The real, the fake, and the fake fake: In counterfactual conditionals, crosslinguistically
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CHAPTER 3

Patterns of Real and Fake Tense and Aspect in Counterfactuals

3.1 Introduction

This chapter attempts to test whether the generalizations reached in the previous chapter hold beyond Palestinian. The previous chapter reached three conclusions with respect to Palestinian which may prove significant for the typology of counterfactuals. (i) The semantics of counterfactuality relies on non-actual veridicality (NAV) semantics (that can be) carried by morphemes traditionally considered to be past tense morphemes. (ii) The syntax of counterfactuals is composed of the following skeleton: CP ⟩ MoodP ⟩ TP_{fake}. The CP of the if-clause is headed by an overt complementizer which could be the default complementizer in the language or a complementizer with dedicated CF meaning. MoodP is optional, but when overt, it is headed by a non veridical morpheme, typically represented by subjunctive morphology. TP is optional only if the complementizer is a dedicated CF morpheme, otherwise it is obligatorily headed by a non-actual veridicality (NAV) morpheme, typically represented by a past tense morpheme – in other words, in case the complementizer is the default complementizer, a NAV morpheme is necessary. We call this TP _fake_ because we are used to calling the morpheme that heads it a past tense morpheme and in this environment it gets a ‘fake’ interpretation (‘fake’ à la Iatridou 2000).  

1 I will continue to label the TPs as real or fake where necessary but only for the sake of facilitating the story telling. The syntax does not care whether this TP gets a real or a fake interpretation. All that syntax cares about is that T is headed by the right morpheme, be
via the stacking of NAV morphemes or a marker that is at least as strong, such as a dedicated CF marker.

This chapter, thus, aims to place the grammatical composition of counterfactual constructions in Palestinian in a crosslinguistic perspective, and to test how strategies followed in Palestinian fit within the crosslinguistic picture. More importantly, given the arguably relative transparency of Palestinian counterfactual structures, this chapter aims at explaining crosslinguistic patterns based on findings from Palestinian.

Data explored in the previous chapter establish that counterfactuality is achieved in Palestinian main clauses via a past tense morpheme operating modally. This observation is noted in Iatridou (2000) and Ippolito (2002), among others, for other languages. Yet, what the previous chapter establishes in addition is that the past tense morpheme is able to function modally and quantify over worlds only if real tense is specified in the sentence. If real tense is not specified, then the past tense morpheme cannot operate modally and must operate temporally to specify tense – thus yielding a past tense reading, and not a counterfactual one. The past tense is able to perform this dual function of tense and modality by virtue of its NAV semantics. NAV is defined in (162). I note that NAV as defined below is inspired by Giannakidou’s notion of veridicality, and is a formalization of Iatridou’s notion of exclusion. In simpler terms (162) reads as follows: NAV morphology presupposes that it cannot be guaranteed that the world-time pair quantified over is equivalent to the actual world-time pair (of ‘here’ and ‘now’).

\[
∥NAV∥ \phi(w,t) \text{ is defined iff } \exists w,t.[(w,t) \neq (w^0,t^0) \land \phi(w,t)]
\]

As mentioned, the past tense morpheme is able to introduce counterfactuality, in Palestinian, if and only if tense in the sentence is specified via an additional morpheme. Hence, the structure of Palestinian counterfactuals actually includes two TPs, one specifying real tense, and a higher TP (that is part of the counterfactual complex) specifying modality (i.e. fake tense). The structure in (164) represents the counterfactual structure of the conditional in (163).

(163) iza kan-ha mbaareh kaanat fi lbet, kaan if be.PST-SUBJ.INC.3SF yesterday be.PST.3SF in-the-house, be.PST radd-at t-talafon answer.PST.PFV-3SF on-the-telephone ‘If she had been home yesterday, she would have answered the phone.’

\[\text{it a tense head or something else like a NAV morpheme. Note that this means that } kaan,\text{ for example, is always NAV, and as a NAV morpheme it is able to head T, but depending on where it is in the syntactic structure it gives us a ‘fake’ or ‘real’ tense interpretation. In chapter 2, I have shown that the higher T is part of a CF complex and gets a ‘fake’ semantic tense, i.e. modal, interpretation.}\]
Recall from chapter 2 that Palestinian has two complementizers, iza and law. iza is used in CF and non-CF conditionals and is therefore considered a default complementizer. law is a complementizer that is used in CF conditionals and wishes and is therefore considered as a dedicated complementizer as it is found only in CF constructions. As such, in CF structures, NAV morphology (carried by morphemes traditionally referred to as ‘the past tense’) is obligatory with the default complementizer, but optional with the dedicated one. In other words, as a default complementizer, in order for it to be able to introduce CF clauses, iza requires the presence of the NAV morpheme operating modally in $T^0_2$, but the subjunctive morpheme ?inno in Mood⁰ is optional with iza. On the other hand, since law as a dedicated CF complementizer can introduce counterfactuality on its own, the presence of the NAV morpheme in $T^0_2$ or a subjunctive morpheme in Mood⁰ is redundant and therefore optional. See (165) and (166). This redundancy means that, when present, NAV morphology (and/or subjunctive morphology) results in an emphatic effect and the strengthening of the CF inference.
Although I argue for reinterpretation of past tense morphology into NAV morphology, in the following examples, NAV morphology is glossed as past tense conforming with the tradition followed in the literature. NAV morphology is able to introduce counterfactuality, given the fact that tense is specified lower in the structure. The NAV morpheme thus embeds a TP, as shown in (164), the T head in which is specified, but need not be headed by an overt morpheme. This is made possible if the language allows for null tense. In Palestinian, covert present tense is thus a sufficient candidate, as shown in chapter 2.

In (167a), the past counterfactual reading is achieved via a NAV morpheme (represented by the auxiliary kaan) which operates modally and embeds a NAV morpheme (represented by the past perfective verb) which operates temporally and specifies real tense and aspect. In (167b), the present counterfactual reading is achieved via a NAV morpheme operating modally and embodying a future/habitual imperfective form that is specified for present tense, hence a covert present tense morpheme in T, as present tense is null in Palestinian Arabic, as argued in chapter 2. In (167c), the future-less-vivid (FLV) reading is achieved via the past perfective verbal form in the following manner: the NAV morpheme (represented by the past perfective verb) operates modally given the fact that perfective aspect is able to specify tense. This is possible because the presence of the perfective morpheme rules out the present tense interpretation (given the incompatibility of the present tense with perfectivity, as is attested crosslinguistically). Hence, once tense is specified, the NAV morpheme is able to operate modally and the counterfactual future interpretation obtains.

(167) a. iza kann-o ayad id-dawa (mbaareh),
    if be.PST.3SM-he take.PST.PFV.3SM the-medicine yesterday,
    kaan thassan
    be.PST.3SM get.better.PSTPFV.3SM
    Past CF: ‘If he had taken the medicine yesterday, he would have

2Palestinian has a covert present tense copula.
3As in previous chapters, I continue to follow Iatridou (2000) in her use of the traditional grammarian’s term Future Less Vivid (FLV), “even though these mark the worlds of the conditional antecedent as unlikely to come about, rather than the [stronger and] more commonly associated meaning with CFs. In many languages they receive the same marking as what are more traditionally called CFs and so we will group them with CFs when relevant” (Iatridou 2009:1). For our purposes, thus, FLVs pattern with past CFs, present CFs and future CFs in that NAV morphology is included (at least in the antecedent).
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gotten better.’

b. iza kann-o b-yayod id-dawa
    if be.PST.3SM-he b-take.IMPFV.3SM the-medicine
    (*mbaareh)/(kul yom), kaan b-ykuun ?ahsan
    (*yesterday)/(every day), be.PST.3SM b-be.IMPFV.3SM better
Present CF: ‘If he took the medicine (every day), he would be better.’

c. iza ayad id-dawa (*mbaareh) (bukra),
    if take.PST.PFV.3SM the-medicine (*yesterday) (tomorrow),
    (kaan) b-yithassan (be.PST.3SM) b-get.better.IMPFV.3SM
FLV: ‘If he took the medicine (tomorrow), he would get better.’

We can test that the past tense morpheme is ‘fake’ (i.e. that the NAV mor-
pheme is operating modally) by modifying the examples above with temporal
adverbials. Only (167a) is compatible with a past adverbial and this shows that
only (167a) contains a real past tense. The compatibility of (167b) and (167c)
with present and future adverbials proves that the past tense morpheme is fake.
This compatibility is ungrammatical outside of counterfactuals where all tense
morphemes receive a real interpretation and no temporal mismatch between
the adverbial and the tense is allowed.

In order to be able to extend the line of analysis of Palestinian to account
for counterparts in other languages, this chapter compares and contrasts differ-
ent aspects of counterfactual constructions. Three main questions concern us
here. (i) Are we able to predict when NAV morphology operates temporally to
specify real past tense and when it operates modally to specify counterfactual-
ity? (ii) Is the characteristic found in Palestinian that T₀ must obligatorily be
filled/specified, in fact, a principle, and if not, where does the parameter lie,
crosslinguistically? (iii) What role do other apparently fake morphemes (imper-
fective aspect and future/habitual modals) play? And (iv) does the availability
of different strategies in one and the same language have implications on the
strength of the CF inference in ways that are testable through the availability,
or lack, of cancellation of the CF inference?

3.2 Real, Fake, and Combined Strategies

Iatridou (2009:15) summarizes the employment of tense and aspect in counter-
factuals in table 3.1. I add Palestinian Arabic to the table.

As the table shows, different languages employ different strategies to ex-
press counterfactuality. In addition, that there are languages mentioned twice
in the table, cf. Hebrew, Palestinian and Zulu, means that different strategies
are found not only across but also within languages. The variation primar-
ily depends on the morphological make up of the language. While many lan-
guages employ fake aspect in their morphological composition of CFs, not all
3.2. Real, Fake, and Combined Strategies

Table 3.1: Iatridou’s table, adapted

<table>
<thead>
<tr>
<th>Language</th>
<th>Tense</th>
<th>Aspect</th>
<th>fake Tense</th>
<th>fake Aspect</th>
<th>dedicated CF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greek, Romance</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Hindi, Persian</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Zulu, Warlpiri</td>
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<tr>
<td>Hungarian, Kashmiri</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Palestinian, Zulu</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Slavic, Palestinian</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Hebrew, Korean</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>N/A</td>
<td>-</td>
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<tr>
<td>Hebrew</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>N/A</td>
<td>+</td>
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<tr>
<td>Tagalog, Tzotzil</td>
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<td>N/A</td>
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</tr>
</tbody>
</table>

Some languages lack morphological aspect altogether, for example Hebrew and Burmese, for which the question regarding the employment of aspect in CFs is non-applicable because they do not exhibit aspeclal distinctions in the traditional sense of (im)perfective morphology. One hard core generalization follows from Iatridou’s table: all languages that do not employ dedicated CF morphology, employ a fake past tense morpheme in their CF structures, i.e. a past tense morpheme operating modally.

Languages that lack tense altogether employ morphemes equivalent to the past tense but from other domains. For example, Burmese and Halkomelem (not in Iatridou’s table) employ (exclusion) markers from the spatial domain; yet other languages, like Blackfoot, employ (exclusion) markers from the person domain (Nevins 2002, Ritter and Wiltschko 2009). Ritter and Wiltschko (2009) argue that what is in common between these three domains is the fact that they are Infl related items. Further, Ritter and Wiltschko (2009) argue that the modal, hence fake, uses of these markers are interpreted in the CP domain. For different accounts of fake tense being interpreted in the left periphery see for instance Ippolito (2003, 2006) and Arregui (2008, 2009), who offer semantic accounts for the interpretation of tense in the left periphery, and Bjorkman (2011), who offers a syntactic account. The ‘counterfactual complex’ argued for

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4 Although Hebrew doesn’t morphologically mark perfective/imperfective distinctions, in later sections it will be shown that Hebrew participles in fact function as present tense/imperfective aspect.

5 Note, however, that Ippolito and Arregui argue that past morphology is real in counterfactuals, i.e. it reflects past tense semantics. Ippolito (2003) argues that past tense semantics restricts accessibility relations and Arregui (2009) argues that past tense semantics restricts similarity relations.
in this dissertation can be seen as an instantiation of a complex interpreted in the left periphery, but nothing hinges on that for the time being.

(168) Burmese
   a. m̀w ei chañ? khe  Re
       snake scare  KHE  decl
       ‘(I) scared a snake [in another place before I arrived here].’
   b. shei  ɓan?' khe  yin, neĩ  kaum  la  ge  lein-me
       medicine drink  KHE  if,  stay  good  come  KHE  predictive-irr
       ‘If he took the medicine, he would have gotten better.’
       (Nevins 2002:442 (2))

Note that, as illustrated in (168), Burmese also uses the irrealis marker me in addition to the distal marker khe.

In Halkomelem, as discussed in Ritter and Wiltschko, a distal marker is used to express another location or past tense, as illustrated in (169).

(169) Halkomelem
   li  qwiyelec  tú-tl’ò
   AUX [+distal] dance  he
   ‘He is/was dancing (there).’
   Ritter and Wiltschko (2009:2(3))

In Halkomelem conditionals, “the distal marker is not directly used to express counterfactuality (i.e. it is not necessary). However, it still bears on the issue as its distal force is lost in counterfactual contexts” (Martina Wiltschko, personal communication).

Further, we mentioned that different strategies are found not only across but also within languages. As we see in the table, not only are there languages that use a dedicated strategy, and others that use a fake temporal strategy; there are also languages that use a mixed strategy, mixing dedicated and fake items. These languages are the ones which occur twice in the table. Hebrew, Palestinian and Zulu are, therefore, considered mixed languages. They employ such a mix by having a dedicated marker in the antecedent, for example, and a fake temporal marker in the consequent. Furthermore, we will see in later sections that there are languages that combine more than one item in the same clause, say the antecedent, to achieve an emphatic CF effect.

Finally, a last point is worth mentioning and that is that adapting Iatridou’s table to our findings in this dissertation means that if we look more closely at those languages which occur twice in the table (i.e. Hebrew, Palestinian, and Zulu), we see that those are languages which can employ a double strategy (i.e. combine more than one CF item in the same clause). As such, these are actual examples of Iatridou’s ‘not found’ and, therefore, should be mentioned there. For example, the last two lines, although labelled as not found in Iatridou (2009), should actually contain Zulu and Palestinian, respectively.

In the following, I touch upon issues from Burmese, English, Greek, Hebrew, Hindi, Hungarian, Italian, Palestinian and Zulu. Special attention will
be given to languages with fake (temporal) or combined (dedicated and temporal) strategies, in an attempt to get a better understanding of the contribution of tense, aspect and mood morphemes to the composition of counterfactual meaning.

**Real (dedicated) Strategy** Hungarian ne/na are phonologically conditioned variants of a specialized/dedicated CF marker. “Every time this marker appears, the construction is CF” (Iatridou 2009). Notice how the indicative conditional (170a) becomes counterfactual (170b) by the sole addition of na in the antecedent and the consequent. The example in (170c) shows that Hungarian past tense morphology does not give rise to counterfactuality, but must be interpreted temporally.

(170) a. ha holnap el-indul, a jóvő hétre oda-ér.
   ‘If he leaves tomorrow, he will get there next week.’

   if tomorrow away-leave the following week onto there-reach

b. ha holnap el-indulna, a jóvő hétre
   ‘If he left tomorrow, he would get there next week.’

   if tomorrow away-leave.CF the following week onto
   there-reach.CF

c. ha hétfőn elindult, (akkor) péntekre
   ‘If he left on Monday, (then) he got there by Friday.’

   if Monday.on away-leave.PST.3SG (then) Friday.onto
   there-reach.PST.3SG.

Zsofia Zvolenszky (p.c.)

Thus, in Hungarian, counterfactuality is introduced in both the *if*-clause and main clause via a dedicated marker\(^6\) that marks the counterfactuality of the antecedent and consequent. As the past tense morpheme does not contribute to counterfactuality, it displays temporal semantics and not NAV semantics. Hence, Hungarian exemplifies that not every past tense morpheme can be considered a NAV morpheme.

\(^6\)This dedicated marker also shows up on the auxiliary as *volna/lenne* (Zsofia Zvolenszky, personal communication).

(1) a. ha hétfőn elindult volna, (akkor) péntekre odaért
   ‘If he had left on Monday, (then) he would have gotten there by Friday.’

   if Monday.on away-leave.PST.3SG CF (then) Friday.onto there-reach.PST.3SG volna
   CF

b. Ha gazdag lenne/volna, New Yorkba költözik-ne.
   ‘If he were rich, he would move to New York.’

   if rich CF.3SG New York-into move.3SG-CF
Fake (Temporal) Strategy In Greek, on the other hand, counterfactuality is achieved not by the addition of a (dedicated) marker, but by changing the temporal-aspectual marking of the conditional – both in the if-clause and the main clause. Notice how a FNV (indicative) turns into a FLV (counterfactual) via the sole change in the tense and aspect of the construction.

(171) a. An pari afto-to siropi θa yini kala
    if take.NPST.PFV this syrup FUT become.NPST.PFV well
    ‘If he takes this syrup, he will get better.’ Iatridou (2000:234 (7))

b. An eperne afto-to siropi θa γινοματ kala
    if take.PST.IMPFV this syrup FUT become.PST.IMPFV well
    ‘If he took this syrup, he would get better.’ Iatridou (2000:234 (8))

Greek, thus, is a language in which counterfactuality is introduced by fake temporal morphology operating modally in both clauses. As discussed in chapter 1, Iatridou considers the past tense (in Greek) to carry an exclusion feature that is able to range over times or worlds. In our terminology here, the past tense in Greek is a NAV morpheme.

Mixed Strategy Palestinian, Zulu and Hebrew have purely (fake) temporal strategies that achieve counterfactuality, this is illustrated in the (a) examples in (172) – (174). Palestinian, Zulu and Hebrew also have dedicated morphemes which can actively participate in CF constructions. Nevertheless, the dedicated strategy is different from the Hungarian example in that this dedicated strategy in Hebrew, Palestinian and Zulu is in fact employed as part of a mixed strategy. For example, Hebrew and Palestinian can employ the real dedicated CF markers in the antecedent, while using fake temporal CF markers in the consequent. Zulu does the opposite: with the dedicated marker in the consequent and the fake temporal marker in the antecedent. This is illustrated in the (b) examples in (172) – (174).

(172) Hebrew
    a. lu yadati, hayiti ofa uga
        ifCF know.PFV, be.PST.1SG bake.PTC.SF cake
        ‘If I had known, I would have baked a cake.’

    b. im hayiti yodaʔat, hayiti ofa uga
        if be.PST.1SF know.PTC.SF, be.PST.1SG bake.PTC.SF cake
        ‘If I had known, I would have baked a cake.’

As mentioned in chapter 2, future neutral vivid is Iatridou’s (2000) terminology to refer to future oriented conditionals which do not express “unlikelihood” of the event denoted, but are neutral with respect to whether it is likely. This contrasts with FLV – see also footnote 3 in this chapter.
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(173) Palestinian

a. law huwwe hon, kaan b-njuufo
   if$_{CF}$ he here, be.PST.3SM b-see.IMPFV.3SM
   ‘If he were here, we would see him.’

b. iza kaan (huwwe) hon, kaan b-njuufo
   if be.PST.3SM he here, be.PST.3SM b-see.IMPFV.3SM
   ‘If he were here, we would see him.’

(174) Zulu

a. ukuba be- ngi- phuma manje, ngabe ngi- zo- fika
   if PST.IMPFV 1SM leave now, CF 1SM- FUT- arrive
   kusasa tomorrow
   ‘If I left now, I would arrive tomorrow.’ Claire Halpert (p.c.)

b. ukuba be- ngi- phuma manje, be- ngi zo-fika
   if PST.IMPFV 1SM leave now, PST.IMPFV- 1SM FUT-arrive
   kusasa tomorrow
   ‘If I left now, I would arrive tomorrow.’

Halpert and Karawani (2012:9b)

Hebrew and Palestinian, thus, can introduce the counterfactuality of the if-clause by employing real (dedicated) CF morphology or fake temporal morphology, while the counterfactuality of the main clause is always introduced by fake temporal morphology operating modally. In Zulu, the counterfactuality of the if-clause is always introduced by fake temporal morphology operating modally, while that of the main clause can be introduced by real (dedicated) CF morphology or fake temporal morphology.

Hence, by ‘mixed strategy’ we mean that the language employs one strategy in the antecedent and a different one in the consequent. This is in contrast with what we will call a ‘combined strategy’ for which we need elements of both types in each clause.

Combined Strategy  The availability of different strategies in a language allows for a combined (or doubling) strategy which can result in emphatic effects. Nevertheless, this is highly dependent on the availability of morphosyntactic means which allow for the stacking of elements – one such means is the availability of auxiliary strategies. We have seen examples of this in the previous chapter for Palestinian – repeated here in (175). Note that Palestinian can add a subjunctive morpheme to achieve an even stronger effect, as illustrated in (175b).
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(175) Palestinian

a. law kaan fi l-bet hala?, kaan
   if$_{CF}$ be.PST.3SM in the-home now, be.PST.3SM
   rad ya-l telefon
   answer.PST.PFY.3SM on-the phone
   ‘If he had been at home now, he would have answered the phone.’

b. law ðinn-o kaan fi l-bet hala?, kaan
   if$_{CF}$ SUBJNc-he be.PST.3SM in the-home now, be.PST.3SM
   rad ya-l telefon
   answer.PST.PFY.3SM on-the phone
   ‘If he had been at home now, he would have answered the phone.’

Similarly, the mix is available in Hebrew as well, as illustrated in (176).

Nevertheless, it is important to note that although Hebrew has the morphosyntactic means to achieve this emphatic effect via stacking CF ingredients in the same way as Palestinian does in (175a) and (175b), in fact, the strategy which employs the dedicated CF marker ilu in Hebrew is considered high register.

(176) a. ilu hi nosa?-at le ðul (kol kayic), ...
   if$_{CF}$ she travel.PTC-SF to abroad (every summer)
   ‘If she travelled abroad (every summer), ...’

b. ilu hi hay-ta nosa?-at le ðul (kol kayic), ...
   if$_{CF}$ she be.PST-3SF travel.PTC-SF to abroad (every summer)
   ‘If she travelled abroad (every summer), ...’

Because law in Hebrew is considered high register, it produces an emphatic effect whenever it is used in everyday speech – even when it is the sole CF ingredient in the antecedent. It is, thus, difficult to test the subtle differences in emphasis between (176a) which includes only ilu and (176b) which includes ilu + hyy$_{PST}$. In other words, Hebrew speakers might find it difficult to quantify the difference, as it is hard to see the pragmatic motivation behind the (further) strengthening in the stacked strategy. Interestingly, Hebrew speakers prefer ilu + hyy$_{PST}$. The reason might be that the contrast for them is between ðim + hyy$_{PST}$ and ilu + hyy$_{PST}$.

With this in mind, however, let us note that Hebrew does show an interesting distinction along the same line. This time the contrast is between ilu + V$_{PST}$ and ilu + hyy$_{PST}$ + PTC, i.e. the distinction depends on the past tense form – be it lexical (where the verb stem carries past tense morphology) or periphrastic (where the auxiliary hyy carries past tense morphology and the verb combines with participial morphology). The contrast in (177) shows that the strategy consisting in the periphrastic form produces an emphatic effect.

(177) a. ilu yaxl-a, ...
   if$_{CF}$ can.PAST-3SF, ...
   ‘If she could, ...’
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b. ilu hay-ta xəzol-a
   if\textsubscript{CF} be.PAST-3SF can.PTC-SF, ...
   ‘If only she could, ...’

The contrast is not only restricted to modal verbs, but to verbs in general, as can be seen in (178).

(178) a. ilu nasʔ-a
    if\textsubscript{CF} travel.PAST-3SF
    ‘If she travelled...’

b. ilu hay-ta nosaʔ-at, ...
    if\textsubscript{CF} be.PAST-3SF travel.PTC-SF, ...
    ‘If only she travelled...’

While Palestinian, for example, achieves the emphatic effect or strengthening the counterfactual antecedent introduced by law by adding a subjunctive morpheme and a modally operating NAV morpheme to the dedicated marker, and while Hebrew achieves the emphatic effect by using the dedicated CF marker ilu and the periphrastic past form, English achieves a similar effect by exchanging the simple form with the perfect. Consider the following examples (cf. Ippolito 2003, 2004 for similar examples).

(179) English

a. If I left tomorrow, I would arrive in time for the conference (I might still be able to do this).

b. If I had left tomorrow, I would have arrived in time for the conference (# I might still be able to do this)/(but this is not possible any more).

We can see that while (179a) is compatible with the continuation I might still be able to do this, (179b) isn’t.\footnote{It is worth noting that, to the best of my knowledge, Ippolito (2001) and Nevins (2002) were among the first to note that the cancellability property correlates with morphological choice.} This is because the counterfactuality of (179b) is grammatically emphasized and, therefore, incompatible with the factual possibility that I might still be able to do this introduces. In other words, once the speaker chooses to grammatically mark counterfactuality, it sounds very odd if s/he chooses to cancel the counterfactuality by saying that the event is still possible. This topic is dealt with in more detail in chapter 4.

For the purposes of this chapter, the above means that the combined strategy does not necessarily solely combine (real) dedicated CF morphology with (fake) temporal morphology, but that some languages can combine (fake) temporal morphology, too. For example, the fact that English past tense morphology is able to function both temporally and modally means that what is traditionally considered as past tense morphology in fact carries NAV semantics; and that the stacking of this NAV morpheme on top of the participle which is
semantically anterior can achieve an emphatic counterfactual effect. Note further that this effect may also be achieved by movement\(^9\) – I-to-C movement as English exemplifies in (180). This means that a combination of temporal morphology with a syntactic operation is also available as means for CF inference strengthening.

\[(180)\quad \text{Had I left, I would have arrived in time for the conference.}\]

This piece of data is used by Ritter and Wiltschko (2009, 2010) and Bjorkman (2011), among others, in order to show that counterfactuality is established in the left periphery and that agree relations hold between T and C by virtue of which past tense morphemes are able to be interpreted modally. In other words, agree facilitates the modal interpretation that is otherwise blocked in the absence of the syntactic configuration which yields it. Hence, without agreement between T and C only the temporal interpretation is possible. Nevertheless, although compatible with the mentioned syntactic accounts, the underspecification approach taken here as represented by the semantics of NAV is able to explain the modality of past tense morphemes in counterfactuals in purely semantic terms.

### 3.3 Ingredients of Fake (Temporal) Strategies

This section is concerned with the syntactic and semantic composition of tense and aspect morphology in counterfactuals.

The theory put forth by Iatridou (1996), elaborated in Iatridou (2000), and further supported by crosslinguistic evidence presented by others (cf. Han 1996, Nevis 2002, Legate 2003, Van Linden and Verstraete 2008, Karawani and Zeijstra 2010, Halpert and Karawani 2012) establishes that past tense morphology is the main ingredient in counterfactuals in those languages that do not use a dedicated CF marker to establish a counterfactual reading. A common ingredient accompanying past tense morphology is imperfective aspect. Imperfective aspect morphology is used in languages like Greek, Hindi, Italian, and Zulu, among others.

Greek exhibits symmetry in the if-clause and main-clause of (CF) conditionals, as we have seen in (171). This is schematized in (181).

\[(181)\]

\begin{align*}
\text{a. } & An + \text{PST.IMPFV}, \theta a + \text{PST.IMPFV} \\
\text{b. } & An + \text{PFV.NPST}, \theta a + \text{PFV.NPST}
\end{align*}

Note that (181a) yields a counterfactual, while the complementary temporal/aspectual morphology in (181b) yields an indicative reading. Past and imperfective thus function to achieve counterfactuality, and are therefore considered (potential) CF ingredients. Note further that, among the temporal morphemes at play, \(\theta a\) is present. Nevertheless, as it shows up in the main clause of

both CF and non-CF conditionals in Greek, it is not considered a counterfactual ingredient. Nevertheless, a future morpheme is considered a CF ingredient in other languages – like Zulu, where it shows up in the consequent of counterfactuals in addition to the imperfective. In Hindi, habitual aspect shows up in addition to the imperfective in both the antecedent and the consequent.

In the previous section, we have seen that past tense morphemes are able to play a role in counterfactuals if they exhibit NAV semantics that allows these morphemes to function modally. In this section, we will try to understand also the role that the imperfective plays in achieving counterfactuality. In particular, languages that use an extra ingredient such as a future or a habitual morpheme will shed light on the role of the imperfective, and thus prove to be instrumental for our understanding of CF typology.

For Iatridou (2000) both the past and the imperfective are fake. Put simply, the past tense morpheme is not interpreted as past tense, and the imperfective is not interpreted as imperfective. According to Iatridou (2000), the conclusion that the imperfective is fake is based on the lack of progressive reading in the interpretation of imperfective aspect in CF constructions, like (171a). The sentence does not mean that if the patient were in the process of taking the syrup, then the consequent would hold. But rather, the sentence receives a perfective interpretation. This means that the future and the habitual readings, which are also hallmarks of the imperfective, are not available either. Is this sufficient to call it ‘fake’? Not necessarily, if we are to acknowledge that imperfective also allows perfective readings outside of CFs. In fact, Iatridou (2009) makes exactly this point: the imperfective shows up in CFs by virtue of being the default aspect. In other words, by virtue of the fact that the imperfective is compatible with imperfective as well as perfective situations, as opposed to the perfective, which is solely compatible with perfective and completed events (cf. Filip 1999, Kagan 2007). In this sense, the imperfective is not fake, but it is merely doing what real and default aspect does – semantically. Further, Iatridou (2009) mentions that, as a default aspect, it shows up in counterfactuals in order to fulfil a syntactic requirement for aspect in those languages in which such a requirement holds. In other words, Iatridou (2009) reaches the conclusion that imperfective aspect is default aspect and shows up in counterfactuals only to fulfil a syntactic requirement, but does not contribute to counterfactuality, per se.

3.3.1 When the Imperfective is Not a Fake Ingredient

While the data discussed in the previous chapter, from Palestinian, establish that it is the role of the past tense morpheme (as a carrier of NAV semantics) that is obligatory for the formation of CF constructions, Palestinian data indicate that the imperfective is not a necessary ingredient. In fact, we have seen

\[^{10}\text{Note that in Zulu, the future morpheme may occur in the consequent of non-CF conditionals, but there its meaning is real – i.e. it contributes a future reading of the conditional.}\]
that Palestinian has a requirement for real (semantic) tense. In other words, semantic tense needs to be realised, such that tense is the necessary ingredient in addition to the fake past tense morpheme, in Palestinian counterfactuals. Tense needs to be semantically specified and syntactically filled in order for the past tense morpheme (or NAV) to be able to function modally. If $T^0$ is specified/filled with a past tense denoting morpheme, the reading is that of a past counterfactual; if it is filled with (null) present tense, the reading is present counterfactual. As present tense is covert in Palestinian, the role of the habitual/future imperfective (composed of the morpheme $b$- and the bare verbal form) was argued to be necessary in present counterfactuals, for it fulfils the function of specifying $T^0$ as present.

In chapter 2, when the use of the imperfective in Palestinian was contrasted with the perfective morpheme in counterfactuals, the perfective, though uncommon crosslinguistically, was shown to occur in counterfactuals due to the fact that it is morphologically coupled with past tense. The common denominator between the two aspects, the perfective and the imperfective, was argued to be a tense specification or a filled T slot. The imperfective fills the T slot by virtue of the habitual/future morpheme $b$- (which as a modal is specified for non-past tense); the perfective by virtue of the past tense that comes coupled with it.

The Palestinian data further gave rise to an intriguing fact: aspect in Palestinian is always real in counterfactual constructions, and not fake. The following examples in (182) illustrate that to be able to refer to a habitual CF situation in the past, real aspect is chosen even if it means that the morphology is not loyal to the real tense of the situation denoted by the conditional. When confronted with the choice between the morphology in (182a) and (182b), (182a) is chosen as it is compatible with the imperfectivity of the event. In other words, even though the event is past, (182c), which would have been loyal to both the tense and aspect of the situation, is ungrammatical and the construction that is loyal to aspect (182d) is chosen over the construction that is loyal to tense (182c).

(182) a. b-yaaklu țifeb
    $b$-eat.IMPFV.3PL grass
    ‘They eat grass/ they are herbivores.’

      b. kaanu yaaklu țifeb
    be.PST.3PL eat.IMPFV.3PL grass
    ‘They used to eat grass/ they were herbivores.’

      c. *kaan kaanu yaaklu țifeb
    be.PST be.PST.3PL eat.IMPFV.3PL grass

      d. kaan b-yaaklu țifeb
    be.PST $b$-eat.IMPFV.3PL grass
    ‘They would have been grass eaters.’

Although Palestinian counterfactual constructions are ultimately transpar-
ent, the above exception displays the puzzling non-transparent morphology that is crosslinguistically attested.

In sum, in Palestinian, aspect appears to be always real. But given the fact that the aspectual morpheme which shows up in imperfective counterfactuals in Palestinian always comes coupled with something else, namely tense, we could argue, for Palestinian, that the necessary ingredient in addition to the fake past tense morpheme is real tense. Could we extend this argument to other languages? Could we argue that imperfective aspect is fake in Greek or Romance, for example, by virtue of being linked to T in disguise, i.e. because it is able to supply real tense?

If the conclusions from Palestinian are to be extended, we need to be able to show that imperfective aspectual markers introduce something more than just pure aspect – namely, tense or some sort of modality that is specified for tense. Recall that Palestinian $b$- and $ra$è introduce imperfective aspect when combined with the bare form, but may also introduce tense. We must keep in mind, however, that this specification (i) can but need not be syntactic – i.e. as mentioned in the introduction, it might turn out that a syntactic requirement for specification of T is merely a parameter. Hence, it might be sufficient that (ii) tense specification is achieved semantically through modal, aspectual or lexical means.

### 3.3.2 Is the Imperfective Specified for Tense?

In Iatridou’s (2000) account, a real use of past tense morphology excludes the time $t$ of the speaker; in Han’s (2006) account, it functions as past; in Karawani and Zeijlstra’s (2010) account, it specifies that $(w,t) \neq (w_0,t_0)$. According to these accounts, a fake use of past tense morphology excludes the world $w$ of the speaker, functions as past$_{w}$, and specifies that $(w,t) \neq (w_0,t_0)$, respectively. In order to exclude both $t$ and $w$, the above accounts agree that two exclusion features, two past morphemes or two NAV morphemes are needed – one for quantifying over $t_0$ and one for $w_0$. This results in a past counterfactual.

If the above approach with respect to the past counterfactual is correct, then the approach with respect to the non-past should, in principle, be similar: we need for tense to be specified. The account (advocated in this dissertation) based on Palestinian, indicates that tense must be specified in order for NAV morphology to quantify over worlds; further, it concludes that tense specification is a syntactic requirement. Is this tense requirement also present in other languages (when the counterfactual is non-past and the morphology is past imperfective)? In particular, if in a certain language when the past imperfective is used in conditionals, it yields a non-past counterfactual (for example, a present CF or a FLV), and if the past is operating modally and yielding counterfactuality, then what is specifying the non-past feature of the conditional, i.e. what is specifying real semantic tense? Is it the imperfective, or some other operator? The question, thus, is this: how exactly is non-pastness achieved in non-past counterfactuals?
This question is important because answering it will not only solve the puzzle of the imperfective, but might solve the non-transparency problem apparent in counterfactuals in many languages. We see, thus far, that while in the case of a past CF, an overt (second) past tense (or at least anteriority) morpheme must be present for one to be able to quantify over worlds while the other to quantify over times; in the case of non-past counterfactuals, morphology is often not as transparent as the past CFs. The problem, it appears, is due to the fact that past tense requires an overt morpheme, while the present tense, on the other hand, does not seem to impose an overt morphological requirement. In fact, Han (1996) advocates the view that the present tense is null in all languages, but that it sometimes surfaces with a morpheme as part of an agreement strategy. In a language like Palestinian, present tense is expressed by a null/zero morpheme (in the nominal case) or by an overt modal/aspectual morpheme which is specified for non-past (in the verbal case). In other languages, such as Italian or Greek, it is less clear whether one can, on independent grounds, argue for present/non-past tense being null. If yes, then one may be able to argue that in non-past CFs, a null non-past tense is present in the construction and specifies tense. This in turn would allow for interpreting the (apparent) sole temporal morpheme, i.e. the past tense morpheme, in the construction as operating modally on worlds, and not specifying real past tense. If this is to be shown to be the case, what we need is to prove that the imperfective in non-past CFs expresses non-past tense; and that outside of counterfactuals, the imperfective also expresses non-past tense. If correct, this explains how the past imperfective gets to achieving a non-past counterfactual reading.

### 3.3.3 The Imperfective and Tense In and Out of CFs

In main clauses outside of CFs, the imperfective yields non-past interpretations. The readings associated with the imperfective are the progressive, habitual, and future – as the following examples in (183) demonstrate.

(183)   a. graf-o
        write.IMPfv-1SG
        ‘I am writing (right now)’./‘I write (generally).’

    b. θa graf-o
        θa write.IMPfv-1SG
        ‘I will write’.

    c. egrafo
        write.PAST.IMPfv.1SG
        ‘I used to write.’/ ‘I was writing.’ Giannakidou (2009, (39a))

    d. θa erxotane tora
        θa come.PAST.IMPfv.3SG now
        ‘He was going to come now.’ Giannakidou (2009, (82))
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In the presence of a past tense morpheme, however, the well known puzzle arises: the readings of the past imperfective are not only associated with a past progressive, a past habit, or a past future, as exemplified in (184), but also with non-past counterfactuality, as in (185).

(184) a. Alle 3, Abelardo guardava un film.
    At 3, Abelard was watching a movie.  
    Ippolito (2004:2 (2))

    In 1998, Gianni often went to the cinema with Maria.
    Lenci and Bertinetto (2000, (16))

c. Domani andavo in biblioteca.
    ‘I was going to the library, tomorrow.’
    adapted from Ippolito (2004:5 (3g))

(185) Se arrivavi prima, vedevi il film dall’inizio.
    ‘If you had arrived earlier, you would have seen the movie from the beginning.’
    Ippolito (2004:22 (18))

The imperfective in the scope of a real past (i.e. in the scope of a NAV morpheme interpreted temporally) yields a past progressive (184a), past habit (184b), or past future readings (184c); but, on the other hand, in a conditional and in the scope of a fake past (i.e. in the scope of a NAV morpheme interpreted modally), the imperfective does not contribute its hallmarks as it would elsewhere (185). Thus, if we are to view the past imperfective verb minus the NAV morpheme, then what is left is the imperfective as it would be outside of the scope of NAV. But importantly, the assumption is that this is made possible only if the construction under the modally interpreted NAV morpheme is able to yield a temporal semantic interpretation on its own.

The readings associated with the imperfective outside the scope of a past tense morpheme are the progressive, the habitual, and the future. Main clauses with imperfective morphology, thus, receive a non-past interpretation, by default. How is this non-past interpretation achieved? Is it by virtue of a pragmatically default link to UT, or by a (syntactic) null tense specification? Further, is this tense specification absolute, or relative? If we are to argue that the imperfective comes along specified for absolute non-past tense, we fail to account for a significant amount of data: the real past imperfective exemplified in (184). We fail, because then every past imperfective would actually be composed of a past, a (covert) non-past, and an imperfective – which would be ungrammatical (given the fact that it would include two tense heads, and therefore ruled
out by the syntax and semantically uninterpretable) or would always receive a CF interpretation. Neither is the case. The past imperfective receives a past progressive, past habit or past future interpretation (outside of conditionals).\textsuperscript{11}

Ippolito (2004), Bonomi (2009), and Squartini (2001), among others, take the common denominator of all three readings associated with the imperfective to be a modal value – given that the future, habitual and progressive are considered modal in many accounts (cf. Condoravdi (2003), Copley (2002) for the future; Delfitto (2000), Boneh and Doron (2008, 2010) for the habitual; Landman (1992) for the progressive). I will assume that by virtue of its modal value, the imperfective requires a specification for tense – as I follow Schulz (2009, p.c.) in her assumption that with respect to the scope of modals and semantic tense, modals require that they be in scope of a tense (morpheme).

When embedded under a past tense morpheme, the past tense specifies the time of modality; in the absence of a past tense morpheme, the modality is linked to UT. But how? It might be that, as a last resort mechanism to save structure in the absence of tense specification, a pragmatic link to UT is established.

In sum, it seems to be the case that what allows the past imperfective to achieve a non-past counterfactual reading in conditionals, then, is not a non-past value inherent to the imperfective; but it is by virtue of the modality of the imperfective, which in turn has a requirement for tense and thus takes care of $T$\textsubscript{0} in the syntax and/or specifies tense as $t$\textsubscript{0} in the semantics. Thereby, once the requirement for real tense is syntactically met and/or semantically saturated, the past tense morpheme (by virtue of its NAV semantics) is able to function modally.

Hence, the argument for tense specification in counterfactuals goes as follows. When past CFs are contrasted with non-past CFs, we see that there exists a requirement for real past or at least anteriority to UT in past counterfactuals and conclude that in the non-past case there must be a requirement for non-past or simultaneity with UT. The same line of argumentation holds here. We do not want to postulate that what is needed in non-past CFs is a modal value, because past CFs do not seem to have this requirement. The common denominator is thus tense and not modality, \emph{per se}. Modality of the imperfective is only instrumental in that it fulfills the requirement of being interpreted in the

\textsuperscript{11}Note that the past future interpretation requires a pragmatically rich environment to invoke the plan reading, and sometimes even displays lexical aspectual sensitivity requiring the event to be telic – cf. Borras Barber (2000), for Catalan. For example, activity verbs (as atelic) are licensed by shifting the perspective via \textit{anar a} (going to):

\begin{enumerate}
  \item a. \# Caminava, però ella li va oferir dur-lo amb cotxe.
  \texttt{walk}\texttt{.pst}\texttt{.impfv}, ...
  ‘He was going to walk, but she offered him a ride.’ (\# = unacceptable under the future for a past reading; otherwise OK)
  \item b. Anava a caminar, però ella li va oferir dur-lo amb cotxe.
  \texttt{go}\texttt{.pst}\texttt{.impfv} to walk, ...
  ‘He was going to walk, but she offered him a ride.’
\end{enumerate}

See also remarks in Karawani (2009).
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scope of tense. In other words, what is needed is in fact semantic tense.

3.3.4 Tense without Imperfective Aspect

If it is true that the imperfective fulfils a requirement for tense, then before proceeding with our investigation into the role of imperfective aspect, we need to understand the role of tense without imperfective aspect. As a language that lacks imperfective aspect, I want to focus on English, in this section, in order to understand the role of syntactic and semantic tense in counterfactuals.

Syntactic Real Tense in CFs – a parameter

The discussion in this section shows that the requirement for real syntactic tense specification (the syntactic requirement for real T to be filled in order for the past tense morpheme to be able to function modally) is actually parametrized. English seems to be a language for which the counterfactual structure allows for the embedding of a bare vP under the modally operating TP (but any predicate is allowed and sometimes even a second TP in case of the infinitive). This is illustrated in the structure in (186) representing the counterfactual structure for English antecedents.

(186) \[ CP C [TP T_{NAV} vP] \]

The embedded predicate, in turn, is able to semantically provide the temporal specification of the counterfactual. Hence, it seems to be the case that while the requirement for real syntactic tense is parametrised, the requirement for real semantic tense specification is universal.

The Valuation of Real Semantic Tense

Ritter and Wiltschko (2009, 2010) solve the problem of zero tense in T and by doing so they bring us closer to answering the question we raised earlier which still stands unanswered: how does Infl or T (in tensed languages) get to be valued? Recall from the discussion in chapter 1 that the main argument of their paper is that the uninterpretable feature in Infl is valuated regardless of whether or not we have a T head in the sentence (or even the language, in general). In their words, this happens “independent of [Infl]’s morphological feature content” (Ritter and Wiltschko 2010:3).

Ritter and Wiltschko (2010), thus, add to our debate the idea that even without an overt tense head, nothing forbids spec-IP from being valued, say by agree relations between V₀ and I₀. Hence, whether the underlying sentence embedded under if+PST contains a tense morpheme is orthogonal to the fact that it is Infl that must be valued: this can be achieved via an (overt/covert) tense morpheme, or (lexically) from the verb in the VP. This means that, for our purposes, we have two options to consider in explaining the facts of English.
The one allows for null tense (an option that Han (1996)\textsuperscript{12} opts for); the second achieves temporal specification VP-internally (an option that I will opt for). As we want to be able to account for (past and non-past) sentences and (past and non-past) counterfactual conditional sentences under one and the same theory, we must chose one of the following options as descriptively adequate: Table 3.2 or Table 3.3.

\textbf{Table 3.2: First Option for past and non-past counterfactuals}

<table>
<thead>
<tr>
<th></th>
<th>C\textsuperscript{0}</th>
<th>T\textsuperscript{0}</th>
<th>T\textsuperscript{0}</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAST CF</td>
<td>C</td>
<td>NAV</td>
<td>NAV</td>
</tr>
<tr>
<td>Non-PAST CF</td>
<td>C</td>
<td>NAV</td>
<td>NULL</td>
</tr>
</tbody>
</table>

To clarify: the main purpose of this section is to account for the structures corresponding to past and present counterfactuals in English. By doing so we will settle the question as to whether the past perfect in English consists of a double semantic past or one semantic past and an aspectual complement. I will argue that if the past perfect consisted of a double past then counterfactual

\textsuperscript{12}Han (1996) advocates an account in which a conditional counterfactual construction consists of a complementizer, a past,\textsubscript{w} and an underlying sentence. For example, in counterfactuals composed of a past perfect in English (i) \textit{if} in the if-clause evokes worlds; (ii) one past tense morpheme excludes \textit{w}; and as according to Han “the pluperfect counts as having two pasts” (1996:9) then (iii) the second past tense morpheme provides the earliest possible time for evaluation of truth. Since the earliest possible evaluation of truth is a past time, the counterfactual is a past counterfactual.

Han (1996) proposes that the structure in (1) represents counterfactuals marked by the past perfect in English.

(1) If ... had V-Past ... , ... would have V ... \hspace{1cm} \text{Han (1996:4 (12b))}

On the other hand, Han (1996) proposes the structure in (2) for counterfactuals marked by a single past tense morpheme.

(2) If ... V-Past ... , ... would V ... \hspace{1cm} \text{Han (1996:4 (12a))}

Han (1996) argues that in counterfactuals composed of a sole past tense morpheme in English, (i) and (ii) above hold (i.e. \textit{if} in the if-clause evokes worlds and the one past tense morpheme excludes \textit{w\textsuperscript{0}}), but (iii) does not hold because there isn’t another tense morpheme in the construction which provides the earliest possible time for the evaluation of truth. Yet, the construction is still interpretable. Han (1996) proposes that this is possible due to the fact that there is a null present tense which saves the reading of the underlying sentence (which equals the CF construction minus the complementizer \textit{if} and the modally operating past morpheme). In other words, once the verb is ‘stripped’ from the past\textsubscript{w} feature, the bare form is interpreted as present. Han, therefore, does not distinguish, say, the bare form \textit{go} from \textit{goes} and considers the latter as an instance of agreement phenomena – following Enç (1990). In fact, Han proposes that all languages have null present tense but that in some languages the present tense surfaces with a morpheme as part of an agreement strategy.

Han (1996) postulates a null present/non-past tense in non-past sentences, in and out of counterfactuals, as a last resort mechanism to save structure and provide an evaluation time for the proposition expressed by the sentence. Han (1996) builds her argument based on data which show sensitivity to lexical aspect, i.e. on the fact that lexical aspect is able to provide temporal specification, in a language like English.
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Table 3.3: Second Option for past and non-past counterfactuals

<table>
<thead>
<tr>
<th></th>
<th>C(^0)</th>
<th>T(^0)</th>
<th>V(^0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAST CF</td>
<td>C</td>
<td>NAV</td>
<td>PTC</td>
</tr>
<tr>
<td>Non-PAST CF</td>
<td>C</td>
<td>NAV</td>
<td>BARE</td>
</tr>
</tbody>
</table>

Constructions composed of a past perfect consist of two TPs; and then by analogy we would have to say that corresponding counterfactual constructions about the present would also have to consist of two TPs, albeit one of which would consist of a null present tense morpheme. I will show that this option (illustrated in Table 3.2 above) cannot be maintained. Instead I will argue that past counterfactuals composed via the past perfect consist of a semantic past and an aspectual complement, whereas non-past counterfactuals consist of a semantic past and a bare verbal complement.

So far, in the discussion of past counterfactuals in English, I have assumed following Steedman (1997) and Iatridou (2000) that the past perfect introduces two layers of past such that in past perfect counterfactuals one past layer introduces modality while the other introduces temporality. But if we are to assume this for the past counterfactual then we must assume the same for the non-past counterfactual. In other words, we must assume that a layer of past tense morphology operates modally and that a (null) non-past morpheme operates temporally in the non-past counterfactual. The assumption is that we need parallelism between past and non-past CFs, i.e. they must have the same structure; and if we are to follow Steedman (1997) and Iatridou’s (2000) assumptions, then we should also follow Han’s (1996).

On the other hand, if we assume that the past perfect is actually composed of a past and a verbal participle – which lexically encodes an anterior event argument\(^{13}\) by virtue of perfect aspect (cf. Reichenbach 1947) – then we are able to maintain that non-past counterfactuals are composed of a past and a bare form – which is semantically default/ a root of the proto-Semitic type (cf. Borer 2005). This latter option is what I will assume.

In sum, I suggest that, in the counterfactual antecedent in English, pastness in past counterfactuals is established semantically via the lexical anteriority of the participle, i.e. anteriority established via a Davidsonian event argument prior to UT (Kratzer 2000). Taking the verbal participle to be lexically anterior or part of an aspect phrase explains the verbal participle’s lack of lexical sensitivity, as opposed to the bare form, which does in fact show lexical sensitivity to lexical aspect/Aktionsart.\(^{14}\)

\(^{13}\)Although this might be over simplification, it suffices for our purposes. As Sabine Iatridou (personal communication) points out, it is actually extremely hard to show which part of the meaning of the perfect comes form the participle and which part from the auxiliary. Moreover, current theories of the perfect do not have an anteriority component in it, and pastness is gotten indirectly. For example see Iatridou, Anagnostopoulou and Izvorski (2001), among others, for an overview of the perfect.

\(^{14}\)The verbal participle in English is different in this respect from the adjectival passive,
Thus, under this view we do not have a morpho-syntactic past vs. non-past distinction under the modally operating NAV (i.e. fake past tense) morpheme in CFs, but morpho-semantic participle vs. bare form distinction. The participle provides anteriority and yields a past counterfactual, while the bare form provides the verbal root carrying lexical aspect, which, in turn, establishes non-anterior relations with UT. Eventives are ruled out from being interpreted as simultaneous to UT and thus yield FLVs, while statives can coincide with UT and thus can yield present CFs. This suggests that the bare form establishes non-past relations via complementary distribution or asymmetric entailment relations vis-à-vis the verbal participle: where the verbal participle establishes anteriority, and the bare form does not, i.e. the morpho-semantic makeup of English blocks the bare form from establishing anteriority relations. Thus, while English lacks morphological aspect and the perfective/imperfective distinction, still it exhibits bare verb vs. verbal participle distinction which proves sufficient for establishing temporal specification and the requirement for tense is saturated semantically. The sentence includes one TP carrying past tense morphology and that TP is able to function modally, given that the past tense morpheme carries a NAV feature which is able to vary over worlds. Temporal specification, thus, takes place in the semantics. Or alternatively, importing semantics into the syntax, if we want to follow the approach taken by Demirdache and Uribe-Etxebarria (2000) we might say that this temporal specification is a valuation of spec-VP.

If we are to follow the convention followed by Ritter and Wiltschko (2009, 2010) – which builds on Hale’s (1986) notion of coincidence and Demirdache and Uribe-Etxebarria’s (2000) proposal – I suggest that the following structures in (187) represent how (real) tense gets to be valued. However, please keep in mind that in order to do so we must also adopt the idea that agree relations hold. In past sentences there is agreement between VP and TP; in CF sentences there is agreement between TP and CP. Hence, the past feature, or \[\neg \text{coin}\], percolates up. Further, note that the notion \[\neg \text{coin}\] must also be modified as suggested in chapter 1: \[\neg \text{coin}\] will mean not present, i.e. not coincide with UT. Hence, in relation to T, it does not automatically mean past time reference but can mean future.

Consider the following structures in (187) for English.

\[(187)\]

a. Structure for past CF in English
   
   \[TP_{fake} \text{ NAV } [v_P \neg \text{coin (ptc)}] \]

b. Structure for non-past CF in English
   
   \[TP_{fake} \text{ NAV } [v_P \text{(bare)}] \]

which does exhibit lexical sensitivity and manifests resultant state passives as opposed to target state passives. See Kratzer (2000), Anagnostopoulou (2003) and Karawani (2008) and references therein for an analysis of participial constructions in different languages.

\[\text{15}\]

The facts concerning lexical aspect and counterfactuality are quite clear, though unresolved – see Iatridou (2000) and (2009) for detailed examples, but also section §5.5, which is the section on lexical aspect in the concluding chapter of this dissertation.
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c. Structure for past perfect indicative in English
   if \([TP_{real} \text{ NAV } [V_P \neg \text{ coin }] \text{ (PTC)]}\]

d. Structure for past indicative in English
   if \([TP_{real} \text{ NAV } [V_P \text{ (bare)]}]\]

e. Structure for non-past indicative in English
   if \([TP_{real} \text{PRS } [V_P \text{ (bare)]}]\]

Regarding (187a), considering the participle to be lexically specified for
antiority means that it reads as past to UT, thereby valuating Infl as \([\neg \text{ coin}]\).

In (187b), the bare form lacks the anteriority semantics that the participle
carries. As such it lacks the feature \([\neg \text{ coin}]\). But this does not mean that it
is specified for \([+ \text{ coin}]\). In fact, it can be \([+ \text{ coin}]\) or \([\neg \text{ coin}]\) depending on
the lexical aspect of the root in bare form. For example, an eventive verb will
always be \([\neg \text{ coin}]\) with respect to UT because eventives are incompatible with
a present tense interpretation, as is attested crosslinguistically.\(^{16}\) Therefore,
because I consider \([\neg \text{ coin}]\) to mean non-present, \([\neg \text{ coin}]\) is not enough to
establish a reading past to UT – thus these tentative structures are preferable
to those proposed by Ritter and Wiltschko (2010), as the ones represented here
allow \([\neg \text{ coin}]\) to receive a future interpretation, hence accounting for FLVs.

These suggestions also appear to be favourable to Han’s (1996) account: you
see the present tense feature, when combined with the bare form, is apparent
through 3\(^{rd}\) person singular agreement morphology in non-counterfactuals, as
opposed to it being absent in CFs.

The question that arises is the following: what determines whether the TP
is interpreted as modal or as real? In particular, what allows the past tense
to function in the modal domain? Principally, it is the underspecification se-
manitics of NAV. And further, the type of syntactic requirement for tense. For
example, we have seen that English does not have a requirement for real tense,
but only a requirement for tense – which can be fake or real. As such, when
the syntactic requirement for tense is met by the past tense morpheme in, say,
the antecedent of the conditional, then the event denoted by the VP is able to
establish semantic temporal relations with UT and the sole past tense can func-
tion modally (in the CP domain) and the interpretation is counterfactual. If,
on the other hand, contextual cues or adverbial modifiers refer to the past, then
the reading is indicative: the past tense morpheme is interpreted temporally
and functions in TP.\(^{17}\)

Given the fact that English seems to have a requirement for tense but
not specifically for real tense, the discussion in this section shows that the

\(^{16}\)What is attested crosslinguistically is that eventives are incompatible with present in the
perfective. In the imperfective, for example in the progressive, they have no problem.

\(^{17}\)It might be instructive to test the role that intonation plays in marking the phrasal
boundary. Take the contrast between indicative and counterfactual If they were tall. My
guess is that in the indicative tall would be stressed as opposed to were in the counterfactual.
Same for if he had done it in the indicative versus if he had done it in the counterfactual
case.
requirement for syntactic real tense argued for in chapter 2 actually turns out to be a parameter in the antecedent. Nevertheless, recall that the Palestinian data teaches us that while null/covert tense is allowed in the antecedent, null/covert tense is not allowed in the consequent, but an overt morphological place holder in T is required. We shall now return to this issue in the following section, looking at the consequent of counterfactual conditionals.

3.3.5 Future/Habituality Puzzle

Back to the (Modality of the) Imperfective  
As noted earlier, a common ingredient accompanying the past tense is the imperfective in counterfactuals. Therefore, in our quest for the syntactic-semantic composition in counterfactuals we need to understand the contribution of the imperfective. In §3.3.2, I presented a view according to which the imperfective merely fills a required aspect slot; hence, being the default aspect is the reason for why it is the imperfective that is chosen (Iatridou 2000). Nevertheless, regarding Romance, or at least Italian, a view was presented according to which the imperfective is modal in nature (Bazzanella (1990), Bonomi 2009, Ippolito 2004, Squartini 2001). Hence, if it is indeed the case that the imperfective is modal in nature, or at least has modal-aspectual features, then this is a view which in counterfactuals can be used to advocate that the imperfective shows up in counterfactuals by virtue of its modal feature (which may be syntactically hosted by a Modal head, above AspP). Section §3.3.2 ended with only this suggestion and the questions as to (i) whether this modality is sufficient to saturate the requirement for tense specification and (ii) whether the requirement for tense is also syntactic in nature. The discussion, then, turned towards English – a language which lacks morphological aspect and we concluded that it also lacked real tense in CFs; hence, we were able to answer the second question concluding that the requirement for syntactic specification of tense is not universal (in the antecedent). In answering the first question, English is instrumental – precisely because English is a language which lacks imperfective aspect. The English facts show that imperfective aspect is not required as a CF ingredient. We saw that the antecedent can survive with just the bare form, as what is required is a form that is able to provide (semantic) temporal specification. In the consequent, however, a modal, represented by would, is necessary. In the absence of this modal in the consequent, a counterfactual reading does not arise and the antecedent is (re)interpreted as an indicative.

With such facts we can return to Iatridou’s (2009) suggestion that aspect is merely default aspect providing the requirement for Aspect. Nevertheless, in that same handout, Iatridou points our attention to an intriguing fact. She mentions that in those languages which overtly distinguishaspectual meanings morphologically, it is future/habitual morphemes which show up in counterfactuals and not the morpheme which yields progressive readings. This generalization comes from Bhatt (1997) on Indo-Aryan and it capitalizes on the fact that while the imperfective is associated with progressive, habitual, and
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future, in those languages that morphologically distinguish these readings, it is not simply any imperfective form that is used but the habitual or future. This can be seen in other languages, for example Persian, and even English: the form that is used in CFs is the one that is used in habitual/futures, and not the progressive (Iatridou 2009, p.c.). In other words, if the imperfective were merely default then we would expect the progressive to show up just as much as the habitual or future. But this is not the case. The progressive is excluded. Therefore, if the imperfective is chosen for any reason other than being default in CFs, then it is chosen by virtue of its habitual/future modality. Bhatt’s generalization is confirmed by Palestinian data presented in the previous chapter where b- as a habitual/future marker is attested in non-past counterfactuals and not the progressive marker  %am. In the following, I present Hindi and Zulu examples which show that Hindi and Zulu are languages that use the habitual and future in counterfactuals, respectively. In fact, we will see that English is such a language, too, as confirmed by the usages of would.

3.3.5.1 Hindi Habitual-Imperfective

Hindi shows that it is the habitual facet of meaning of the imperfective that is able to yield counterfactuality. The Hindi data provide another important fact: morpho-syntactically, both fake and real imperfective morphology are attested in counterfactuals. In other words, not only do we see fake imperfective morphology, but in the Hindi CF structure there is also room for real aspectual distinctions. The following examples demonstrate that the slot for real aspect remains intact, and that an extra slot of fake aspect shows up in both the antecedent and the consequent. Note, for example, that in (188a) perfective and habitual aspect are stacked, and in (188b) that two habitual morphemes are stacked, and that in (188c) a progressive and a habitual morpheme are stacked in one and the same clause.

(188)  
a. agar Ram-ne phal khaa-yaa ho-taa  
   if Ram-erg fruit ate-pfv be-hab  
   Past CF: ‘If Ram had eaten the fruit, ...’  
   Bhatt (1997:2 (6c))

b. agar Ram phal khaa-taa ho-taa  
   if Ram fruit ate-hab be-hab  
   Habitual CF: ‘If Ram had been eating fruit habitually, ...’  
   Bhatt (1997:2 (6e))

c. agar Ram phal khaa-rahaa ho-taa  
   if Ram-erg fruit ate-prog be-hab  
   Progressive CF: ‘If Ram had been eating the fruit, ...’  
   Bhatt (1997:2 (6g))

Stacking of aspect outside of CFs is ungrammatical in Hindi, as illustrated in (189). Hence, outside of counterfactuals there is only room for one aspect morpheme. The stacking of aspect is allowed only if a habitual aspect morpheme
operates fakely, i.e. operates to yield counterfactuality and not to specify real aspect.

(189)  
a. *Ram-ne phal khaa-ya ho-taa  
      Ram-ERG fruit ate-PFV be-HAB  
b. *Ram phal khaa-taa ho-taa  
      Ram fruit ate-HAB be-HAB  
c. *Ram phal khaa rahaa ho-taa Bhatt (1997:2 (6d,6f,6h)  
      Ram-ERG fruit ate-PROG be-HAB  

Thus, the ungrammaticality of the above is expected given the assumption that the structure that allows stacking and yields counterfactuality is different from that of non-counterfactuals. Furthermore, although covert, the past tense is also an ingredient in the above constructions. Bhatt shows that the habitual imperfective can only appear without overt tense morphemes in a past context. We can, therefore, assume that a covert past tense morpheme accompanies the habitual morpheme in Hindi counterfactuals.

In contrast, in main clauses, outside of counterfactuals, habitual imperfective morphology obligatorily occurs with overt tense morphemes, as (190) shows:

(190) Ram phal khaa-taa *(hai/thaa)  
      Ram fruit ate-HAB PRS/PST  
      Present/Past Habitual: ‘Ram eats/used to eat fruit.’  
      Bhatt (1997:2 (6b))

On the other hand, in main clauses which are, say, part of a discourse the reference of which is past time, habitual imperfective morphology may occur without overt past tense morphology. Since this behaviour is only licensed in past tense contexts, this fact leads Bhatt (1997) to argue that the habitual imperfective morphology occurring in CFs accompanies a covert past. Hindi, thus, fits within the crosslinguistic generalization according to which the past tense morpheme is the main CF ingredient (Iatridou 2000). Nevertheless, the question why is an overt past tense morpheme ungrammatical in CFs as (191) shows – or, in other words, why must the fake past tense be covert – remains unexplained.

(191) agar Ram phal khaa-taa (*hai/*thaa)  
      if Ram fruit ate-HAB (PRS/PST)  
      CF: ‘If Ram ate the fruit, ...’  
      Bhatt (1997:2 (6a))

The structure in (192) represents what I expect the Hindi CF structure to look like. Nevertheless, (192) remains only a tentative suggestion for two reasons: (i) why an overt fake tense in Hindi is ungrammatical still needs to be accounted for, and (ii) I remain agnostic as to whether we have a bi-clausal structure, i.e. whether Hindi includes another TP. In (192), ModP GEN AspP IMPFV stand for the habitual morpheme taa.
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(192) Skeleton of Hindi CFs \[\text{CounterfactualComplex TP covert pst } \text{ ModP gen } \text{ AspP IMPFV} \} \text{ AspP PFV/IMPFV}

3.3.5.2 Zulu Future-Imperfective

Looking at Zulu, we see similar facts. First, fake past tense and fake imperfective aspect show up in both the antecedent and the consequent. However, unlike Hindi, where a habitual morpheme shows up in both clauses, in Zulu, a future morpheme shows up but only in the consequent, as exemplified in (193a). This future morpheme is interpreted as fake, i.e. it does not contribute semantic futurity as it would in an indicative conditional which lacks the fake past imperfective, as in (194).

(193) a. ukuba be- ngi- phum- e izolo, be- ngi- if PST.IMPFV- ISM- leave- PFV yesterday PST.IMPFV- ISM- zo- fik- ile ekuseni FUT. arrive- PFV LOC.dawn ‘If I had left yesterday, I would have arrived at dawn.’ Halpert and Karawani (2012:101 (9a))

b. ukuba be- ngi- phuma ngesikhathi ngi- ku- bona, if IMPFV.PST- ISM- leave LOC-time 1SM- 2- see be- ngi- zo- fik- ile ekuseni IMPFV.PST. 1SM- FUT- arrive- PFV LOC.dawn ‘If I had been leaving when I saw you, I would have arrived at dawn.’ Halpert and Karawani (2012:105 (22a))

(194) ukuba u- phum- e izolo, u- fik- ile ekuseni if 1SG- leave- PFV yesterday 1SG- arrive- PFV LOC.dawn ‘If he left yesterday, then he arrived at dawn.’ Halpert and Karawani (2012:102 (10a))

Second, Zulu data show that there is also a slot for real aspect available, see (195). However, unlike Hindi where real perfective or real imperfective aspect may show up on the verb, in Zulu only real perfective can. In other words, in CF constructions, both imperfective and perfective aspect may appear at the same time, just in case the predicate receives a perfective interpretation; there is no way to stack additional be- morphology on the verb:

(195) ukuba u- be- shad- e nenkosazana, u- be- if 1SM- PST.IMPFV- marry- PFV with-princess 1SM-PST-IMP- FUT zo- ba nemali be with-money ‘If he married the princess, he’d have money.’ Halpert and Karawani (2012:105 (20a))

Further, double aspect marking outside of counterfactuals is ungrammatical:
In (193a) and (195), the antecedent is marked with both imperfective and perfective but interpreted perfectly. This is only possible in counterfactuals, as the ungrammaticality of (196) shows.

Halpert and Karawani (2012) argue that the unavailability of stacking of imperfective as opposed to perfective is due to the fact that the imperfective is coupled with tense, while the perfective is purely aspectual. Hence, given the lack of syntactic means (as auxiliary structures, for example), only one tense can be hosted. There is no such restriction on aspect in Zulu, as imperfective and perfective aspect are hosted in different locations – while the imperfective is a prefix, the perfective is a suffix. As such, perfective aspect can show up on the verb and is interpreted as real. Imperfective aspect, on the other hand, seems to be necessary only by virtue of the past tense that comes coupled with it.

In addition to the past tense, another necessary ingredient is the future marker zo. In counterfactuals, this marker does not contribute futurity, as we can see from its compatibility with past CFs, non-past CFs and FLVs. Outside of CFs the future morpheme zo receives only real interpretation, and is incompatible with non-future adverbials or situations.

In a nutshell, Zulu and Hindi data show that it is not, per se, the imperfective that is a counterfactual ingredient, but a habitual/future morpheme that is not interpreted as real. I assume the common denominator to be the modality of the habitual/future. Hence, given the fact that this modal appears in both the antecedent and the consequent in Hindi, but only in the consequent in Zulu, I will assume that this modality is at least necessary in the consequent. Looking at English, this is confirmed. In the following, English, as a language that lacks morphological aspect, once more confirms that it is not the imperfective that is a necessary ingredient but the modal woll. For definitions of woll as the modal underlying will and would, see the discussion in chapter 1, but also Thomason (1970), Condoravdi (2001), Copley (2002), and Kaufmann (2005).

### 3.3.5.3 English Habitual and Future woll

In this section, we are concerned with the question as to what the contribution of would is to counterfactuality. This question is important because, as English is a language that lacks imperfective aspect, understanding the contribution of would allows us to understand the contribution of imperfective aspect when it combines with past tense morphemes in other languages. Would is composed
of a fake past and a modal *woll*. This modal functions to yield a habitual or a future outside of CFs, i.e. when it composes with a real past tense. This means that we find in English the same ingredients that we encounter in Hindi and Zulu – a past tense morpheme and a habitual/future modal. But what allows, or triggers, the past to function modally? Is it by virtue of the modality that *woll* introduces? Yes, but not because modality *per se* is required, but rather the modality is necessary by virtue of the fact that modals come specified for tense. Hence, what is necessary is that the requirement for semantic tense is saturated.

In the previous section, we saw that English CF antecedents include a past tense morpheme carrying NAV semantics and a verbal participle or a bare form. In turn, whether the past tense is hosted by the verb itself or an auxiliary *have* or *be* depends on the inflectional and selectional requirements of the embedded form: the bare verbal form can combine with past tense, the verbal participle requires that past tense be carried by *have*, and non-verbal forms require that past tense be carried by *be*. In the consequent, on the other hand, the past tense is carried by *woll*, yielding *would*. The bare verbal form imposes no further requirements, whereas the participle requires *have*.

The examples below show that *would + bare form* yield non-past CFs as illustrated in (198a), whereas *would + have + participle* yield past CFs as illustrated in (198b).

(198)  

\begin{enumerate}
\item If Peter got the plane, we would make it in time.  
Schulz (2007:178 (110))
\item If Peter had gotten the plane, we would have made it in time.
\end{enumerate}

Iatridou (1996, et seq.), among others, assumes that the modality of the past tense morpheme in the antecedent is triggered by the modality introduced by *if*. This could be what modal elements like the habitual/future achieve in the consequent, in those languages in which they are required. However, the fact that there are languages like Palestinian in which a modal element of this sort is possible, but not particularly required (as Palestinian allows a past perfective form in past counterfactuals, hence a form which does not include a modal, see (167a)), shows that the modality of the NAV morpheme, in fact, is not necessarily triggered by a modal element in the structure. The Palestinian data show that a different requirement allows the past tense morpheme to operate modally: in Palestinian, it is a requirement for syntactic tense specification. In non-past counterfactuals, a modal element specified for non-past tense is required; but in past counterfactuals, a verbal form specified for past is required. The common denominator is a place holder in tense. Hence, the following generalization in (199).

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18 Actually *would + have + participle* can also yield non-past counterfactuals. We will see, in §3.6 that this is an instance of counterfactual strengthening.
(199) What triggers the modally operating past?

- (i) An element triggering modality in the antecedent. A (conditional) complementizer may be sufficient.

- (ii) An element triggering modality in the consequent. This element can be a modal. This modal element is not always overt – as in Romance.

- For some languages (ii) is actually (iii) an additional tense element which triggers the interpretation of the NAV morpheme as operating on worlds.

Recall Bhatt’s generalization that when the imperfective is used in CFs, in Indo-Arian languages, it is always either the future or habitual morpheme that shows up – not the progressive morpheme. This generalization extends to other languages like Palestinian and Zulu. It also extends to English, and Hebrew, as we will see.

English would has two uses: it introduces counterfactual consequents but is also a marker of past habits or past futures. When tense is specified as past, the modal value of will gives rise to the habitual/future reading. Hence, habit in the past as in (200a) or future in the past as in (200b). On the other hand, when tense is specified as non-past, the past feature in would operates on worlds, as in (200c).

(200) a. (Whenever it was her birthday), he would bake her a cake.
   b. A child was born. He would be king.
   c. (...) He would arrive tomorrow.

In the CF usages of would, the past component of would is the, thus far, familiar fake past; in the habitual/future usages of would, it is a real past with the modality of will operating to yield a habitual or a future. The NAV semantics associated with the past tense in English allows the past component of would to be fake and yield the CF reading in would. But, furthermore, it seems that there is a need for a trigger which induces the modal reading of the past tense morpheme and blocks the temporal one.

Might the trigger which induces the modal reading of the past tense morpheme be merely the if in the antecedent? If we are to answer this question positively, then we might risk circularity: it would look as if we are postulating that the fake past tense in the consequent is triggered by the fake past tense in the antecedent. If this is correct then we might want to consider the morphology found in consequent of counterfactual conditionals as mere agreement. While this might turn out to be a plausible idea, we do not have enough evidence to support this conclusion as of yet. In fact, evidence seems to suggest that this is incorrect. Precisely the evidence discussed here that the consequent seems to require an extra modal. In other words, a fake past tense morpheme in the consequent is not sufficient, but will in addition is required.
Consider the ambiguity in (201).

(201) \textbf{If she had} the time, my grandma \textbf{would} go to the garden, pick some apples and make us the best pie.

What determines whether the reading is counterfactual or not? Context. Context in its ability to provide the interpreter with time specification: if the event of \textit{grandma having the time, picking apples and making pie} is a past event, then the conditional is non-counterfactual (‘indicative’) as the past tense in \textit{had} and the past tense in \textit{would} are interpreted as real. On the other hand, if it is contextually salient that the event is non-past, then the extra past tense morphology in the construction both in the antecedent and the consequent cannot but be interpreted as fake, thus introducing counterfactuality.

The following continuations in (202), thus, disambiguate (201).

(202) a. She usually had the time.
   b. She seldom had the time.
   c. But grandma never has the time (anymore)
   d. I don’t think she has the time (today).

The fact that contextual cues (hence, pragmatics) play a role in determining whether the conditional is interpreted as counterfactual is further evidence that real tense specification is a semantic requirement and not a syntactic requirement in English. Note further that the strength of the counterfactual inference is also determined contextually. One can emphasize the counterfactuality of the future event by (202c) or merely express an expectation that the future event is counterfactual (202d).

According to Condoravdi (2003), the difference between factual ‘indicative’ \textit{would} and counterfactual ‘subjunctive’ \textit{would} is that the former has past indicative features while the latter has present subjunctive features. See (203).

(203) \textit{woll} in Condoravdi (2003)
   a. \textit{will}: present + woll
   b. factual \textit{would}: past\textsubscript{indic} + woll
   c. counterfactual \textit{would}: present\textsubscript{subjunc} + woll

Nevertheless, note that Condoravdi’s notion of ‘present subjunctive’ is used in the philosophical sense. From work by Iatridou, we know that present and subjunctive \textit{per se} are not grammatical features which are able to function to yield CF readings.\textsuperscript{20} And further, we have seen that English appears to require

\textsuperscript{19}The strengthening of the CF inference is dealt with in section 3.6, and further in chapter 4.

\textsuperscript{20}See von Stechow (1995), however, for an alternative view according to which “\textit{would} in the consequent must be semantically tenseless and is perhaps best interpreted as a semantical subjunctive if the subjunctive is the operation deleting tense.”
a semantic specification of tense in order for factual and counterfactual usages of \textit{would} to be distinguished.

According to Condoravdi, \textit{will} and \textit{CF would} differ merely in their ‘mood.’ Since Condoravdi means ‘subjunctive’ in the philosophical sense, not the morphological sense, and since in this chapter, we are interested in identifying the ingredients of counterfactuality such that ‘indicative’ and ‘subjunctive’ in the philosophical sense are distinguished on morpho-syntactic and semantic grounds, I will suggest the following semantics for \textit{CF would} based on the crosslinguistic data discussed so far:

\begin{equation}
\text{counterfactual } \textit{would} = \text{NAV} + \text{present} + \text{woll}
\end{equation}

According to the suggestion in (204) \textit{will} and \textit{CF would} differ in that \textit{CF would} is \textit{will} + past. That is, \textit{CF would} has an extra past tense (i.e. NAV) feature. On the other hand, \textit{CF would} differs from factual \textit{would} in that \textit{CF would} has an additional tense feature, specified as present, and supplied contextually or via non-past adverbials. Note that the suggestion in (204) remains loyal to the morphological make-up in that both \textit{CF would} and factual \textit{would} include past + \textit{woll}. Furthermore, this observation shows that English is consistent with the crosslinguistic picture (by including a past feature in counterfactuals).

But more importantly, if this is correct, then it explains the facts of English: (i) no lexical aspectual sensitivity takes place in the consequent, and (ii) the temporal morphological makeup on the auxiliary \textit{have} and on main verbs in counterfactual consequents. (205) summarises the CF ingredients in CF consequents in English.

\begin{equation}
\textit{would } \textit{V} = \text{NAV} + \text{woll} + \text{present} + \text{bare verb}
\end{equation}

\begin{equation}
\textit{would have ptc} = \text{NAV} + \text{woll} + \text{present} + \text{participle}
\end{equation}

Note that this is in line with the analysis proposed by Schulz (2007) – although Schulz assumes lexical ambiguity of the simple past as expressing two different syntactic feature combinations: either it asks for the tense operator PST or for the mood operator SUBJNC, which we need not assume here because of the underspecification semantics of NAV. Schulz (2007) assumes, as we do here, that when the past tense morphology is interpreted as mood, the verb carries a [PRS] feature. Hence, the counterfactual/modal interpretation of the past morpheme obligatorily combines with present tense (Schulz 2007:205). My interpretation of the perfect diverges from that of Schultz (2007) in that I regard \textit{have} to be simply fulfilling a selectional requirement of the perfect participle and that \textit{have} surfaces bare – in turn the participle (or the bare verb in the absence of the perfect) establish temporal relations with the present tense feature. Schulz (2007) considers the same ambiguity she assumes for the past tense morphology to occur also in the case of the perfect. She argues that \textit{have} is also lexically ambiguous and is either interpreted as the perfect operator or selects for counterfactual mood (ibid.). Another important divergence from
the proposal made by Schulz (2007) is that I claim that \( prs \) is found only in the consequent in English and that this is a feature of counterfactual \( \text{would} \). Note that this also enables us to account for the data without postulating null present tense in the antecedent as Han (1996) does.

Following Abusch (1985, 1988) and many others who consider future not as a simple tense but as a complex tense composed of two parts: a true tense part, i.e. present tense or past tense, plus the abstract modal \( \text{woll} \). Wurmbrand (2011) associates the structures in (206a) and (206b) with \( \text{will} \) and factual \( \text{would} \), respectively.

\[(206)\]
\[
\begin{align*}
\text{a. Future will} & \\
TP & \\
T^0 & \text{WollP} \\
\downarrow & \\
\text{PRS} & \text{woll} \text{vP} \\
\downarrow & \\
\ldots & \\
\text{b. Factual would} & \\
TP & \\
T^0 & \text{WollP} \\
\downarrow & \\
\text{PST} & \text{woll} \text{vP} \\
\downarrow & \\
\ldots & \\
\end{align*}
\]

Wurmbrand (2011:7 (16))

According to the proposal made here, counterfactual \( \text{would (have)} \) looks as illustrated in (207).

\[(207)\] Counterfactual \( \text{would (have)} \)
\[
\begin{align*}
\text{a. Syntactically} & \\
TP & \\
\text{NAV} & \text{ModP} \\
\downarrow & \\
\text{Mod}^0 & \text{vP} \\
\downarrow & \\
\text{woll} & \ldots & \\
\end{align*}
\]
b. Semantically

If the analysis proposed here is correct, then syntactically what we have is a TP and a ModP; and semantically, we have a NAV morpheme and a modal with present time reference. It is important to keep in mind that present is a semantic specification. Following Heim (1994), Kratzer (1998) and Abusch (2004), we can think of it as a zero tense – that is, a tense variable that is bound by a binder inserted at LF. Hence, in the syntax, there is only one TP and this TP hosts the NAV morpheme. The structure of the consequent in English is, thus, different from that of the antecedent. In the consequent, there is an extra ModP hosting the modal head.

I propose the following syntactic structure of English counterfactuals.

(208) a. Structure for CF Antecedent in English
   CP → MoodP → TP → vP

   b. Structure for CF Consequent in English
   CP → TP → ModP → (AspP) → VP

Interestingly, inversion in the antecedent depends on the nature of the complement; see the contrast between (209a) and (209c).

(209) a. * Were he rich, ...

   b. * [CP were [TP he [AP/NP/PP/P P rich/a doctor/at home/leaving]]

   c. Were he to leave/ have been leaving, ...

   d. [CP were [TP he [TP to leave/ to have left/ to have been leaving/ to have arrived/ to have been killed]]]}

One more point is worth mentioning, and that is that in the case of English what is crucial is that the embedded phrase cannot be a CP. With infinitives, we have no choice of tense. But evidence also comes from the passive – that is, from the fact that the embedded phrase can contain an auxiliary and the passive, as in were he to have been killed. That the subject can be a subject of

---

21 Noam Chomsky (personal communication) notes that when the embedded predicate is infinitival then English allows for two TPs in the clause. He also notes that, in French, for example, the embedded phrase cannot be a TP. In contrast, in Palestinian, the nature of the complement is different – there’s is always a TP.

22 The participle has selectional requirements for have.

23 This is a simplification, of course. See Wurmbrand (2011), and references therein, for a detailed discussion of infinitival tense.
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a passive shows that the downstairs subject raised from even a lower position. This is evidence that the whole construction is a full clause. The same goes for unaccusatives like *were he to have arrived*.

In the antecedent, fake past tense is hosted by the highest element that can carry it: the auxiliary or the verb. In the consequent, the highest element is the modal, and thus the past tense is hosted there. Further, in the antecedent, temporal specification comes from the verb’s lexical aspect or the participle’s lexical anteriority. In the consequent, *will* provides semantic present tense — decomposed into *woll* + *prs*. That *will* provides semantic present tense is crucial and it accounts for a crucial difference between the antecedent and the consequent: the fact that there is no lexical aspectual sensitivity in the consequent, where the participle gets an anterior reading and the bare form gets a non-past reading. ²⁴

### 3.3.5.4 Hebrew Past Participle

Recall that Hebrew has two past forms: a synthetic (lexical) past (in the consonant-vowel form of *CaCaC*) and a periphrastic past consisting of the past tense auxiliary *hyy* and a participle (in the consonant-vowel form of *CoCeC*), as illustrated in (210).

(210) a. *yael avda* ba-gina
   Yael work.pst.3sf in.the-garden
   ‘Yael worked in the garden.’ Boneh and Doron (2010:5 (9a))

   b. *yael hayt-a oved-et ba-gina*
   *yael be.pst.3sf work-sf in.the-garden*
   ‘Yael used to / would work in the garden.’
   Boneh and Doron (2010:5 (10a))

The default complementizer *?im* plus the lexical past yield an indicative reading only, as shown in (211a). For the lexical past to be able to participate in a CF structure, the complementizer *ilu* is obligatory, as in (211c).

(211) a. *im yael avda b-a-gina,*
   if Yael work.pst.3sf in-the-garden
   Indicative: ‘If Yael worked in the garden,’

   b. *im yael hay-ta ovedet b-a-gina*
   if Yael be.pst-3sf work.ptc.sf in-the-garden
   CF: ‘If Yael worked in the garden,’

   c. *ilu yael avda b-a-gina,*
   if CF Yael work.pst.3sf in-the-garden
   CF: ‘If Yael worked in the garden,’

²⁴See Iatridou (2000) for a discussion of lexical aspectual sensitivity in counterfactuals and §5.5 of this dissertation for some notes on the topic.
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d. ilu yael hay-ta ovedet ba-gina
   if$_{CF}$ Yael be.PST-3SF work.PTC.SF in-the-garden
   CF: ‘If Yael worked in the garden,’

The unavailability of a counterfactual reading in (211a) shows that the synthetic form is able to yield only temporal past readings. This suggests that the synthetic form has temporal past semantics and not NAV semantics. Only the periphrastic form can yield a CF reading with the default complementizer ?im (211b), suggesting that it is the semantics of NAV which allows the periphrastic form to yield temporal and modal readings and to vary over times and worlds. As opposed to NAV semantics, the semantics of the temporal past varies over times only, as represented in (212). (212) simply means that the time of the event precedes the utterance time. For formal treatments of past tense semantics, see, a.o., Reichenbach (1966), Partee (1973), Bennet and Partee (1978), Smith (1978), and Enç (1987). For simplicity, I assume the semantics in (212), which captures the fact that past tense varies over events and locates them prior to UT, but see (213) for a proposal by Enç (1987) in which the past tense takes sentential arguments and (214) for a proposal by Schulz (2009) in which the past tense requires a world argument.

(212) The semantics of temporal past: $t \prec (t^0)$

(213) Where $\phi$ is a sentence, PAST $\phi$ is true at a time $t$ iff there is a time $t'$ such that $t' (t \land \phi$ is true at $t')$. Enç (1987:(1))

(214) Deictic semantics for the past tense
   Past$_1$ : $\lambda P \lambda t_0 \lambda w. t_1 (t_0 \land P(w)(t_1))$ Schulz (2009:4)

The above pieces of Hebrew data are important as they shed light on two factors. (i) So called past tense morphemes need to be considered as NAV morphemes if they are able to yield both temporal and modal readings, as we have seen. (ii) Moreover, further investigation into the data shows that not only are the lexical past and the periphrastic past semantically distinct, but they are syntactically distinct as well. Their structural differences provide evidence for the structure of CF syntax proposed in this chapter.25

In addition to the NAV semantics carried by the auxiliary, Hebrew shows that a temporal/aspectual operator is necessary to yield CF readings – this operator is carried by the participial form as we will see shortly. In Hebrew, the periphrastic past form consisting of the auxiliary hyy and a participle is ambiguous between a past habitual and a counterfactual (Boneh and Doron 2008). As mentioned, this suggests that the semantics of hyy, which is traditionally regarded as a past auxiliary, in fact, exhibits NAV semantics allowing

25For example, the periphrastic past and the lexical past behave differently with respect to licensing of null subjects in conditionals. I will not explore this topic in detail here as it is beyond the scope of this chapter. Nevertheless, the data are intriguing and so are worth mentioning, as we will see in the end of this section on Hebrew.
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it to yield real temporal past tense semantics, as exemplified in (215), and counterfactuality, as in (216).

(215) Actual (Habitual)

safta fel yaht-a of-a ugot mejajot, hi yaht-a
grandmother my be.pst-3sf bake-sf cakes amazing, she be.pst-3sf
yoc-et la-gina ve-qotefet tapuqim, aya r-kay hi yaht-a
go.out-sf to.the-garden and-pick-sf apples then she be.pst-3sf
chose r-et la-mittehay u-mega rejet et kulam.
return-sf to.the-kitchen and-shoo-sf ACC everybody

‘My grandmother used to bake amazing cakes. She would go out to the

(216) Counterfactual

ili rac-ta, yael hay-ta nosa?-at l-a-avoda b-a-otobus.

‘If she wanted.3sf, Yael be-3sf go.3sf to-the-work in-the-bus

Boneh and Doron (2010:12 (26))

Boneh and Doron (2008) assign the following structures to the habitual
past and the counterfactual, respectively. In both (217a) and (217b) they posit
a null operator ∅. In (217a), ∅ is a habitual operator that starts out in Asp⁰
and moves to T⁰ passing through Mood⁰. In (217b), ∅ is a subjunctive operator
that starts out in Mood⁰ and moves to T⁰.

(217) a.

Boneh and Doron (2008:6 (7))

b. [TP [TV [null subjinc¹ HYY.past ] [MoodP [Mood⁰ t₁] [AspP [Asp⁰ Neutral ] [VP ]]]]]

Boneh and Doron (2008:6 (8))

However, under the assumptions considered thus far in this chapter, the
structure that Boneh and Doron (2008) assign to the counterfactual is unlikely
to account for counterfactuality: (i) given that, crosslinguistically, the subjunc-
tive is not a sufficient ingredient for yielding counterfactuality, and (ii) given
the fact that subjunctive morphology is not attested elsewhere in Hebrew. Thus
the assignment of a ‘subjunctive’ operator seems to me to be an ad hoc solution
to the question that we are after or just a label to the phenomenon we wish to
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The analysis of the counterfactual reading of the periphrastic form in Hebrew is merely marginal in Boneh and Doron’s (2008) paper, which actually focuses on habituality in Hebrew; therefore, I do not mean to highlight the shortcomings of handling the counterfactual as if it were the focus of their proposal. But I do wish to focus on their analysis of the habitual. Their analysis is instructive in our debate precisely because it seems to be the case, crosslinguistically, that counterfactuality is associated with forms that otherwise yield habitual/future readings.

In my opinion, to be able to answer the question as to why the periphrastic past (consisting of a past auxiliary and a participle) in Hebrew gets to be ambiguous between a past habit and a counterfactual, it suffices to consider the readings associated with the participle outside of the scope of the past auxiliary $hyy$.

Outside the scope of $hyy$, the participle in Hebrew is associated with three readings: simultaneous, habitual and future, as represented in (218).

(218) a. Simultaneous
ani medabre′ et ba-telefon ka-Rega.
I speak.PTC-SF in-phone right-now
‘I am on the phone right now.’

b. Future
ani nosa?’-at la-avoda ba-?otobus ma’ar.
I travel.PTC-SF to-work in-bus tomorrow
‘I will go to work by bus tomorrow.’

c. Habitual
ani nosa?’-at la-avoda ba-?otobus, kol yom.
I travel.PTC-SF to-work in-bus, every day
‘I go to work by bus, every day.’ Karawani (2009:12 (21-23))

A look at the environments in which the participle in Hebrew distributes suffices to conclude that the participle has a temporal (simultaneous) usage, as well as modal usages (habitual/future). If the temporal usage is the one active in CFs, then Hebrew might be a language that functions like Palestinian, where the temporal form fulfills a syntactic requirement for tense – a sort of place holder which ‘pushes’ the NAV morpheme to a higher node and allows it to function in the CF complex in the CP domain. On the other hand, if it is the modal usage that is active in CFs, then Hebrew might actually be a language which functions along the lines of English (and maybe Hindi), where, arguably, the modal establishes the required temporal specification semantically, thereby allowing the NAV morpheme to be interpreted modally.

Hence, we are faced with a choice that needs to be made: Hebrew is a language that requires the participle (i) due to its ability to provide temporal specification via it being a place holder in Tense, or (ii) due to the fact that it carries a covert modal which is able to semantically introduce temporal specification. The upcoming typology will allow us to answer whether
3.3. Ingredients of Fake (Temporal) Strategies

Hebrew is a type one language or a type two. The main challenge in answering these questions lies in the fact that the past participle yields both past and non-past counterfactuals. In other words, Hebrew does not distinguish past from non-past counterfactuals and uses the periphrastic form for both, see (219). Further challenging is the fact that, whatever it is that the participle is introducing, it is covert.

(219) ?im hayiti yodaḥ-at et ha-mespa rim ha-zoqim, if be.PAST.1SG know.PTC-SF acc the-numbers the-winning,
    hayiti zoq a-lot. past 1sg win.PTC-SF in-the lottery
    ‘If I knew the winning numbers, I would win the lottery.’
    ‘If I had known the winning numbers, I would have won the lottery.’

The readings associated with the participle in Hebrew, as exemplified in (218) above, are the same as the familiar hallmarks of imperfective aspect attested in other languages. And even though Hebrew lacks morphological distinctions of perfective/imperfective, the relevant readings for our purposes (hence, habitual/future modalities which are hallmarks of imperfective aspect, crosslinguistically, and show up in CFs) are indeed attested, and they accompany the participle. There is, thus, reason to consider the covert modal head $HAB$ (from the structure in (217a) as proposed by Boneh and Doron 2008) to play a role in yielding the counterfactual, thus placing Hebrew on the side of Hindi and English.

This answer is, unfortunately, not definitive because the participle also displays tense, or at least temporal information, as (218a) indicates. Sharvit (2003) and Doron (2010) instruct us on this matter.

The participle in Hebrew “can be characterized as a non-finite form of the verb inflected for a combination of nominal and verbal features. [...] It is the nominal features of the participle which account for its non-finite nature” (Doron 2010:1), although the participle conveys temporal information in much the same way as finite verb forms. Participles which function as primary predicates of main clauses receive a present tense interpretation (Doron 2010:3). Participles which function as secondary predicates are interpreted according to the rules of sequence of tense: functioning as simultaneous to the main predicate, or as simultaneous with speech time (Sharvit 2003). There is thus reason to consider the role of covert tense as accompanying the participle in Hebrew counterfactuals. Boneh and Doron (2005) assign the following structures for the participle in Hebrew: (220a) and (220b). As a main predicate, the participle functions as a temporal predicate and specifies the tense node with present tense; as an embedded predicate, the participle functions only aspectually.

26 Thanks to Anita Mittwoch for pointing out this fact to me at the very beginning of my Ph.D. She said ‘Hebrew CFs lack those temporal distinctions which seem so important in their English counterparts.’
The fact that the participle is able to introduce temporal information places Hebrew on the side of Palestinian and accounts for the fact that the periphrastic form in Hebrew is able to yield both past and non-past counterfactuals. However, to be able to follow the line of argumentation according to which structural tense plays a role in Hebrew counterfactuals, we need to postulate that, in past counterfactuals, a הָיָה denoting real past tense deletes under identity with the overt הָיָה denoting counterfactuality – as Han (1996) assumes for Korean, where the second past morpheme in past CFs deletes at PF but is present at LF, such that we actually have (חמ) + NAV_{fakeTP} + NAV_{realTP} + embedded participle at LF. If this analysis is correct, then the following trees represent Hebrew counterfactual structures. (221a) represents Hebrew past CFs and (221b) represents Hebrew present CFs. Note that the past participle in Hebrew is, in fact, a participle embedded under הָיָה. And a present participle is a participle embedded under null present tense.
3.3. Ingredients of Fake (Temporal) Strategies

(221) a. $hyy + \text{past participle}$

\[
\text{TP}_{\text{fake}} \quad \text{TP}_{\text{real}}
\]
\[
\text{T}^0 \quad \text{NAV}\quad \text{T}^0 \quad \text{PerspectiveP}
\]
\[
\text{NAV}\quad \text{Perspective}^0 \quad \text{AspP}
\]
\[
\text{Asp}^0 \quad \text{Neutral} \quad \text{VP}
\]

b. $hyy + \text{present participle}$

\[
\text{TP}_{\text{fake}} \quad \text{TP}_{\text{real}}
\]
\[
\text{T}^0 \quad \text{NAV}\quad \text{T}^0 \quad \text{PerspectiveP}
\]
\[
\text{Present} \quad \text{Perspective}^0 \quad \text{AspP}
\]
\[
\text{Asp}^0 \quad \text{Neutral} \quad \text{VP}
\]

Note that, in principle, the semantics of NAV can account, on its own, for the Hebrew ambiguity of CF structures between a non-past CF and a past CF interpretation. NAV says that the $[t, w]$ pair is distinct from $[t^0, w^0]$, and as such NAV can specify that the $[t, w]$ pair is $[t^0, w']$ or $[t', w']$, hence accounting for non-past and past CFs, respectively.

Whether, as is the case in Palestinian, Tense in Hebrew counterfactuals is indeed a syntactic requirement, and the structure in (221a) is correct, I leave for future research. For the time being, since on the one hand both the past CF and the non-past CF are identical, and on the other hand, the NAV morpheme $hyy$ is able to provide both real past and fake past, then we are done. Nevertheless, I think there is reason to assume that the participle is responsible for tense specification in both the antecedent and the consequent – such that the periphrastic form $hyy + \text{participle}$ is in fact $hyy + \text{past participle}$ or $hyy + \text{present participle}$. If so, then I suggest to explain the former in
terms of deletion under identity: by postulating that the lower NAV morpheme denoting real past phonologically deletes under identity with the higher hyy that is contributing CF.\textsuperscript{27} As for the latter, that simultaneity with the present or utterance time is not morphologically marked is not surprising, as there is independent evidence for null present tense in Hebrew. Hence, tense is a requirement that the participle is able to fulfil. In turn, the hyy auxiliary is inserted to fulfill the counterfactual requirement, as it carries NAV semantics.

Alternatively, what we can conclude is that there is a requirement to semantically specify tense. As modals are able to specify temporal information, then the structure in (217a) can also account for CFs, but instead of MoodP we would have ModalP. Nevertheless, Hebrew displays an intriguing behaviour of null-subject licensing\textsuperscript{28} (see (223)), which might be related to there being a high tense operator in CF conditionals. I, therefore, suspect that the first option (i.e. that tense is required in Hebrew CFs) is more apt to account for the Hebrew data. The Hebrew data concerning null subject licensing seems to point to the fact that there is (syntactic) covert tense, and not merely a modal with semantic tense specification.

The synthetic (lexical) past in Hebrew yields only a past tense interpretation and does not yield CF readings in conditionals. This means that there is no reason to consider the lexical past in Hebrew to be a NAV morpheme. Thus, a semantic difference between the past tense auxiliary (hyy) and the synthetic past in Hebrew is that only the former is a NAV morpheme, while the synthetic (lexical) past simply carries past tense semantics. But there is also a syntactic difference: the ability to license null subjects. Taking the hyy auxiliary to be a NAV morpheme together with the assumption that the counterfactual construction in Hebrew has a slot for real, although covert, tense allows us to explain not only the ability to introduce counterfactuality that the auxiliary construction exhibits but also its ability to license null subjects, as is illustrated in (223), which the synthetic (lexical) form lacks as shown in (222).

\begin{verbatim}
(222) im *(hi) yaq?a me ha-bayit, ...
   if (she) leave.pst.3sf from-the-home
   Indic: 'If she left home, ...'

(223) a. im (hi) hayt-a b-a-bayit etmol, ...
   if (she) be.pst-F in-the-home yesterday
   Indic: 'If she was at home yesterday, ...'
\end{verbatim}

\textsuperscript{27}Following Han (1996:5) for Korean who writes “two past tense morphologies [...] may be phonologically contracted yielding effectively one past tense morphology.” Ideally, this should be motivated on language specific grounds, because Palestinian does not do it this way, as far as I could tell, for example.

\textsuperscript{28}I thank Ilona Spector and Ivy Sichel for going through long lists of grammaticality judgements. I especially thank Ivy also for very intriguing and inspiring discussions of this issue at MIT and in Tel Aviv.
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b. im (hi) hayta b-a-bayit āzfav, ...
   if (she) be.pst-f in-the-home now
   CF: ‘If she were at home now, ...’

c. im (hi) hayta b-a-bayit maţa r, ...
   if (she) be.pst-f in-the-home tomorrow
   CF: ‘If she were at home tomorrow, ...’

d. ilu (hi) hayta b-a-bayit etmol/āz fav/maţa r, ...
   if CF (she) be.pst-f in-the-home yesterday/now/tomorrow
   CF: ‘If she had been/were at home yesterday/now/tomorrow, ...’

In the examples above, we see ?im hyy patterning with ilu with respect to null subject licensing. (223a) is non-counterfactual and still licenses a null subject. On the other hand, (224) is counterfactual but cannot license a null subject.

(224) im *(hi) yaţla la?azov, ...
   if she can.pst.3SF to-leave, ...
   ‘If she could leave, ...’
   Ivy Sichel (p.c.)

Thus, licensing of the null subject is not related to semantic counterfactuality. Instead, the licensing of the null subject seems to be related to the position of the tense morpheme. Intervention effects seem to block the lexical past from reaching the high position that licenses null subjects. This problem does not arise with the auxiliary as it can be base generated in the high position.

De Crousaz and Shlonsky (2003) argue that null subject licensing is related to rich verbal inflection, especially in contexts involving an overt complementizer, in Romance. The data above show that rich verbal inflection is not enough, but that licensing of pro seems to depend on (the position of) tense. A high tense position is able to check D-features (see Chomsky 1995, Torrego 1998, Benmammoun 2000, and Shlonsky 2009).

3.3.6 Tentative Typology

The answer as to what is in common among habituality, futurity and counterfactuality such that habitual/future morphemes are often found in counterfactuals may reduce to the modality of such elements, which is able to trigger world-quantification – a role that in the antecedent is assumed to be played by the modality introduced by if. But we have also seen that there is a requirement for semantic tense specification. The same requirement for tense specification holds in the consequent. So what makes a modal in the consequent crosslinguistically attested is the fact that modals are specified for tense. Interestingly, from crosslinguistic data discussed so far, it seems to be the case that these modals are necessity modals.

In the following, I summarise the typological conclusions reached thus far in this chapter.
(225) Tentative Typology

a. Type 1:
In a language where a modal is required in CF constructions, it seems that this requirement holds in the consequent. Two general characteristics of modals and one specific to modals in CFs are exhibited. (i) Modals introduce worlds and (ii) they require tense specifcation – this tense is in agreement with contextual information or adverbial modification (in other words, these modals are in the scope of a semantic real tense). (iii) Modals found in CFs seem to be necessity modals.

b. Type 2
In a language where (overt) Tense is required in CF constructions, a modal isn’t. In other words, tense specifcation via a morphological head playing the role of a place holder in the syntax can ‘push’ the past to quantify over worlds by virtue of its NAV feature which varies over worlds too.

We are now able to understand how counterfactuality functions in languages in which morphology is transparent to a lesser extent.

Hebrew, for example, offers sets of data that show that (i) NAV semantics is essential for yielding counterfactuality in languages that use a temporal strategy. Specifically, that past tense morphemes, per se, cannot yield counterfactuality unless they exhibit NAV semantics – i.e. past tense semantics is not sufficient to yield counterfactual readings and does not contribute to counterfactuality. (ii) Hebrew provides further evidence that CF structures include an element contributing a ModP or a TP to the structure.

In Palestinian the clausal complementizer can have tense, unlike Romance where there isn’t a second TP. English NAV is followed by a weak vP or a TP – depending on the nature of the complement. Note, however, that this is true of the antecedent. In the consequent, NAV is followed by a ModP. Zulu NAV is followed by an AspP in the antecedent and a ModP in the consequent. In Hindi, covert NAV is followed by ModP, symmetrically in both clauses.

Importantly, the requirement for tense and/or modality is shown to be parametrized; and furthermore, the requirement for imperfective aspect is a masquerade for fulfilling the requirements for T/Mod.

3.4 The Syntax of Counterfactuality

According to the discussion thus far, the following structures represent the scope relations in counterfactuals in English, Hebrew, Hindi, Palestinian, and Zulu.

\[
\begin{align*}
\text{Hindi} & \quad \text{CP} & \quad \text{Fake TP} & \quad \text{Fake AspP}_{\text{HAB}} & \quad \text{Real TP}_{\text{PST}/\text{PRS}} & \quad \text{Real AspP}_{\text{HAB}/\text{FUT}/\text{PROG}}
\end{align*}
\]
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Palestinian CP$_{Piza/law}$  MoodP$_{SUBJNC}$  Fake TP$_{PST}$  Real TP$_{PST/covert-PRS}$ Real AspP$_{PFV/b-IMPFV}$ (Real AspP$_{FUT/PROG}$)  
Zulu CP  Fake TP$_{PSTIMPFV}$  Real AspP$_{PFV}$, CP  Fake TP$_{PSTIMPFV}$  ModP$_{FUT}$  Real AspP$_{PFV}$  
English CP$_{if}$  MoodP$_{SUBJNC}$  Fake TP$_{PST}$  vP, CP  Fake TP$_{PST}$  ModP$_{FUT}$  
Hebrew CP$_{if}$  Fake TP$_{PST}$  TP/ModP, CP  Fake TP$_{PST}$  TP/ModP  

Hence, we reach the following cartography:

\begin{equation}
(226) \text{Counterfactual Complex}
\end{equation}

\begin{align*}
\text{CP} & \rightarrow \text{MoodP} \rightarrow \text{TP}_{\text{fake}} \rightarrow \text{ModP}/\text{AspP}_{\text{fake}} \rightarrow \text{TP}_{\text{real}} \rightarrow \text{AspP}_{\text{real}} \rightarrow \vP
\end{align*}

The variation above shows that languages attempt to maximize the morphological exponents of real tense and aspect, but the ability of each language to implement both the CF requirements and real tense and aspect depends on the availability of stacking strategies. As such, the ability to realize these requirements is independently predictable from the specifics of the morphosyntactic properties of the language.

To realize real tense or aspect, the language needs a place for the real morphology to go. In a language like Hindi, with a consistent strategy to yield stacking, we see both fake and real morphology in CFs. As such, Hindi exhibits the most transparency, and also symmetry, in antecedent and consequent among the languages we have looked at – with the (past) habitual representing the CF morphology and slots for real tense and aspect available.

As for Zulu, since the past comes coupled with the imperfective, Zulu appears to have fake aspect because the imperfective cannot occur as real, since that would mean that another layer of past tense will be in the structure and Zulu does not have an auxiliary strategy that allows this stacking. But since Zulu perfective is a suffix and is solely aspectual, it can be hosted in a slot for real aspect.

In Palestinian, the auxiliary structure with kaan hosts fake past, so real tense and aspect can be realized on the main verb. Palestinian is asymmetric in one respect and that is that the antecedent allows for null tense, but the consequent does not and requires an overt place holder in tense. In this respect, Palestinian and English show that something extra is required in the consequent: tense and/or a modal. Palestinian requires that tense be overt and English requires a modal.

The syntax of English has a requirement for TP, but it does not care if this TP is real or fake. The semantics requires that this TP is headed by a NAV morpheme operating modally, hence that past tense inflection is selected for counterfactual interpretation. This inflection can be carried by the verb itself or an auxiliary. In the consequent, the modal combines with the NAV
morpheme. Any other morphemes which have a potential to carry tense must show up tenseless or bare – as English allows for one and only one tense slot. For example, when the embedded predicate is a participle, the participle has a selectional requirement for *have* and *have* shows up in the bare form, as is attested by the lack of third person agreement morphology.

Hebrew appears to be least transparent but symmetric. It looks either like Palestinian or English – although if I had to choose, my guess would be that it is more in line with Palestinian as argued in § 3.3.5.4.

### 3.5 Why NAV and not Past Semantics?

The backtracking approach to the semantics of counterfactuals (introduced in chapter 1), which relies on the semantics of the past tense as introducing a past time from which (future) possibilities branch, might philosophically account for the use of past tense morphemes in counterfactuals. But it cannot account for the use of other NAV morphemes like spatial or participant oriented morphemes which are crosslinguistically used for the same purposes (as the traditionally referred to) as past tense morphemes in tense oriented languages. These morphemes have the same usages as past tense morphemes; they are not only used in counterfactuals to mark falsity or unlikelihood, but also to mark politeness, for example, as illustrated in (227).

(227) Volevo del pane, grazie.

\begin{verbatim}
want.pst.impfv.1sg the bread, thank.you
\end{verbatim}

‘I would like some bread.’ Ippolito (2004:4 (3e))

NAV semantics as represented in (162) should only be minimally amended to account for languages like Halkomelem and Burmese. In a temporality oriented language, NAV means that (given a context) the speaker cannot guarantee the event at here and now. In a participant oriented language, NAV means that (given a context) the speaker cannot guarantee the event to involve the participants who are here, hence the speaker and hearer. In a spatially oriented language, NAV means that (given a context) the speaker cannot guarantee the event at the world here.

The data from the different languages discussed in Nevins (2002) took him to the conclusion that languages are divided: in some counterfactuality is a presupposition, while in other languages it is merely an implicature. However, the semantics of NAV, as proposed here, shows that we can explain the facts without assuming that the (semantic-pragmatic) nature of counterfactuality is any different in the languages we looked at, but that differences arise due to the exact NAV semantics that is available to that language or that the language selects.\(^29\)

\(^29\)See chapter 4 for a detailed discussion of this point.
In addition, without alluding to a semantic-pragmatic difference of presupposition languages vs. implicature languages, the system proposed in this dissertation can further account for Nevins’ (2002) observations regarding the strength of the counterfactual inference and its non-cancellability. Take (168b) repeated here again, as (228). In (228), we see that not only a NAV strategy is used, but also a dedicated strategy: hence, this example is an example of a counterfactual combining the NAV morpheme khe with the irrealis morpheme me.

(228) Burmese
shei ənau? khe yin, nei kau la ge lein-me
medicine drink KHE if, stay good come KHE predictive-IRR
‘If he took the medicine, he would have gotten better.’
Nevins (2002:442 (2))

In the following section, I will show that counterfactual strength is in direct correlation with the number of strategies used, and need not be restricted to languages that use dedicated markers, as previously assumed in Nevins (2002). Hence, it will be shown that even languages that lack dedicated CF strategies and thus use a temporal strategy in counterfactuals are able to achieve strong counterfactual meaning.

3.6 Combined Strategies

We have seen in previous sections that there exist different strategies to express counterfactuality: a dedicated strategy, a temporal strategy (in temporally oriented languages),30 or a mixed strategy in languages that use both and can opt for one strategy in the if-clause and another in the main clause. Combining more than one strategy, or using the same strategy twice, in the same clause is also possible. In this section, we focus on this. Take (175) and (176b), repeated here as (229).

(229) a. Palestinian
law (ʔinn-o) kaan fi 1-bet halaʔ, kaan
if$_{CF}$ (SUBJNC-he) be.PST.3SM in-the-home now, be.PST.3SM
rad ʔa-l telefon.
answer.PST.PFV.3SM on-the phone
‘If he had been at home now, he would have answered the phone.’

b. Hebrew
ilu hi hay-ta nosaʔ-at le ʔul (kol kayic), ...
ifsp$_{CF}$ she be.PAST-3SF travel.PTC-SF to abroad (every summer)
‘If she (had) travelled abroad (every summer), ....’

30Or similarly spatial or participant oriented strategies in spatial or participant oriented languages, respectively.
Combining strategies has the effect of strengthening the counterfactuality of the conditional. In other words, combining different counterfactual strategies results in an emphatic effect.

This is not surprising. An emphatic effect usually arises when optional and, thus, redundant operations take place. Take the simple example in (230).

(230) a. It is very cold out there.
    b. It is very very cold out there.

English lacks a dedicated strategy; and as English syntax rules out the stacking of auxiliaries, it cannot use the same strategy which relies on the NAV morpheme twice. English can, nonetheless, achieve this emphatic effect by combining different strategies. Take the present counterfactual, in (231a), turned into what I will call a \textit{doubly marked} present counterfactual, in (231b).

(231) a. If he owned a car, he would take you for a ride. (He might own one, and so you should ask him to take you).
    b. If he had owned this car, he would have taken you for a ride. (# He might own one, and so you should ask him to take you).

The same happens in a future oriented conditionals. Take the FLV in (232a), turned into a future counterfactual in (232b).

(232) a. FLV: If I left tomorrow, I would arrive in time for the conference.
    b. Future CF: If I had left tomorrow, I would have arrived in time for the conference.

The emphatic effect is achieved via the employment of an extra, redundant, strategy. In other words, because the employment of the perfect is redundant, its presence results in an emphatic effect.

Hence, the operation that results in a stronger counterfactual inference which is formerly assumed to be due to extra backtracking (Dahl 1997, Ippolito 2003, 2006, a.o.) is argued here to be due to the employment of optional and redundant strategies.

Of course, we can also consider the option that the temporal mismatch (as Ippolito 2004 argues) between the contextually provided non-past temporality and the lexical anteriority of the participle contributes to the emphatic effect – that is that the anteriority introduced by the participle contributes ‘another layer of pastness.’ However, although this is a plausible explanation, nevertheless if we do follow this line of argumentation, then we fail to account for emphatic counterfactuals created via I-to-C movement, for example, or other operations (in languages) that do not involve (extra) semantic/morphological pastness or anteriority.

While present CFs and FLVs are turned doubly marked by the addition of a NAV morpheme operating modally on a sentence including lexically specified anteriority, doubly marked past conditionals are achieved by movement, in English. The fact that the emphatic effect is achieved by syntactic movement, and
not by the addition of NAV morphemes or extra anteriority, provides evidence
to the argument that it is the addition of redundant strategies which results in
an emphatic effect or strengthening of counterfactuality.

For past CFs like (233a), as no further stacking is available by the morpho-
syntax, English makes available an I-to-C movement strategy which achieves
the emphatic effect as can be seen in (233b). Note that this option is also
available for non-past CFs too, (233d).

(233)  
a. If he had lost the elections, ...
b. Had he lost the elections, ...
c. If he were to lose the elections, ...
d. Were he to lose the elections, ...

Iatridou (2000) notes a similar example in Greek. In Greek, as in English,
a movement strategy may be employed to achieve an emphatic effect.32 (234b)
is distinguished from (234a) in that (234b) includes the undeclinable “Infl-area
clitic particle [na], which, in combination with the position of the subject, might
indicate that the verb has undergone I-to-C movement” (Iatridou 2000:233, fn.
2).

(234) Greek  
a. An o-Kostas  ίηε  χριματα  θα  αγοραζε αφτò to-spiti  αλα  den  κσρο
   if  Kostas  had  money  fut  buy  this  house  but  neg  know
   an  εχι  χριματα.
   if  has  money
   ‘If Kostas had money, he would buy this house, but I don’t know if
he has money.’

b. Na  ίηε  χριματα  o-Kostas  θα  αγοραζε αφτò to-spiti (## αλα  den
   NA  had  money  Kostas  fut  buy  this  house  (  but  neg
   ksero  an  εχι  χριματα).
   know  if  has  money)
   ‘If Kostas had money, he would buy this house, ## but I don’t
know if he has money.’

31I remain agnostic as to whether this is head movement to C. While in some languages
(cf. English, Greek) this might look like movement into C (evidence for this might be the
deletion of the complementizer and its substitution by the verb), in others (cf. Palestinian)
this looks like an adjunction operation. See Bjorkman (2011), and references therein, for
syntactic arguments in favour of head movement. Note, however, that in many languages (cf.
German, Icelandic) conditional inversion is not semantically restricted to CF conditionals,
but occurs in indicatives, as well.
32Iatridou suggests that the counterfactuality of such conditionals, which involve I-to-C
movement and na, seems to be asserted as opposed to CF conditionals which do not involve
movement or na in which counterfactuality seems to be merely a matter of implicature. How-
ever, in chapter 4, I argue that in both cases, counterfactuality is a matter of presupposition,
but that unmarked ones appeal to a set of expectations, whereas marked ones appeal to a set
of (expectations and) beliefs. For this chapter, what concerns us is that Iatridou shares the
intuition that marked CFs involve something stronger than their unmarked counterparts.
Giannakidou (2009) analyses *na* as a mood particle that is linked to a complementizer *an*. This might explain why the complementizer *an* is substituted by *na*. But more importantly, for the purposes of this chapter, the fact that *na* (as a mood particle) shows up when the verb undergoes I-to-C movement lends support to the syntax of CFs that this chapter argues for, namely the skeleton CP ⟩ MoodP ⟩ TP_{fake}, which is also represented in (226). It shows that, indeed, the counterfactual complex consists of a MoodP that is situated between TP and CF. On its way to C, the verb which carries the fake past tense morpheme must pass through Mood carrying *na* along. Consequently, *na* substitutes the complementizer *an* and an emphatic effect is achieved.

Iatridou and Embick (1994) also notice this emphatic effect which accompanies the counterfactual conditional achieved via I-to-C movement. They write “the implicature that the antecedent is false is defeasible with an inverted conditional but not with an inverted one” (ibid:12). Nevins (2002) and Ippolito (2004) a.o. show that this defeasibility is testable via the availability of cancellation. We can test the difference in strength by the availability of cancelling the unlikelihood in (235a) as opposed to (235b).

(235) English
a. FLV: If I left tomorrow, I would arrive in time for the conference (I think I can still make it).

b. Future CF: If I had left tomorrow, I would have arrived in time for the conference (# I think I can still make it).

The unavailability of cancellation is due to the fact that the counterfactuality in the latter case is taken to be more than mere unlikelihood. I have suggested that the difference is quantifiable and depends on markedness. The more strategies are used, or the more marked the strategy, the stronger the counterfactual, and the harder it is to cancel (on one and the same context). In chapter 4, I explain the contrast in cancellability by arguing that the default, or non-emphatic, CF conditional alludes to a context of expectation (Expect ¬φ), while the emphatic, or doubly marked, CF conditional alludes to a context of belief or knowledge (Know ¬φ).

That a theory of markedness is apt to explain these emphatic effects is further supported by data from Italian. In Italian the employment of indicative mood in counterfactuals also achieves this emphatic effect, as indicative mood in CFs is marked as opposed to subjunctive mood, which is default. This contrast is exemplified in (236).

(236) Italian
a. #Ho regalato il biglietto del concerto a Gianni, per cui è probabile che venga. Se veniva, si...
3.7 Conclusions

The central aim of this chapter has been to offer a reinterpretation of past tense morphology in terms of NAV morphology. NAV morphology varies over time and world pairs such that whenever NAV morphology is used, it specifies that the world-time pair of the eventuality within its scope is distinct from the pair that consists of $w^0$ and $t^0$. In simple words, the eventuality does not take place here and now.

The bulk of counterfactuality, thus, depends on NAV morphology in its ability to vary over worlds and introduce modal interpretation; but although necessary, this morphology is not sufficient. For NAV morphology to be able to function modally, an additional requirement needs to be fulfilled. NAV morphology, heading $T^0$, must be operating within what I have called a CF complex, consisting of $\text{CP} \to \text{MoodP} \to \text{TP}$. In order for $T^0$ to be bound within this CF complex, temporal specification must be provided, semantically or syntactically. When this requirement is syntactic, a place holder in an additional $T^0_{/\text{real}}$ is required; otherwise, a Mod$^0$ is necessary lower in the structure.

Whether it is $T^0$ or Mod$^0$ that needs to be syntactically provided depends on whether the language has a requirement for real tense. In other words, whether or not $T^0$ must be filled in order for the NAV morpheme to function modally within the CF complex is a parameter of the language involved. But when real tense is not required, it seems to be the case that a modal, or some other place holder, is required. For example, Palestinian requires real tense to be morpho-syntactically provided; but in Russian, by seems to be a sufficient place holder. by appears in counterfactuals like (237), but also in optatives and subjunctive complements of verbs like want and desire, and seems to have selectional requirements that the verb be inflected for past tense (Natalia Ivlieva and Sasha Podobryaev, personal communication).
Further, although a CF complex is found in both the antecedent and consequent of counterfactual conditionals, it seems to be the case that the consequent imposes more morpho-syntactic requirements than the antecedent, such that we might be tempted to say that counterfactuality, or counterfactual marking, in conditionals depends on the consequent (but we will not argue for this conclusion because some languages do not require CF marking at all in the consequent, cf. Japanese). For example, we see that in Palestinian antecedents covert (present) tense is possible but not in the consequent. In English, we see that an overt modal is required in the consequent but in the antecedent the NAV morpheme is sufficient.

Consider the following example in (238), in which NAV morphology denotes past tense, and the conditional is interpreted as an indicative.

(238) a. If there were cookies, they ate them.
   b. If he had bought the cookies (by the time she was there), they ate them together.

Hence, NAV morphology on its own is not sufficient to introduce counterfactuality, but modal morphology in the consequent is necessary, as illustrated in (239).

(239) a. If there were cookies, they would eat them.
   b. If he had bought the cookies (by the time she was there), they would’ve eaten them together.

Still, counterfactuality is not guaranteed, as the following example in (240) shows.

(240) If she had the time, she would go to the garden and pick some apples for the pie.

The system proposed in this chapter offers a syntactic and semantic account of this ambiguity. In fact, a counterfactual reading of (240) is available only under temporal mismatch specified via pragmatic cues or adverbially, say via an adverb like tomorrow. When temporal information is provided as non-past, the NAV morpheme does not have to contribute temporal information and can thus denote modality. Consequently, the conditional is interpreted counterfactually.

This chapter concludes that in those languages that require a modal in counterfactuals, it is not the modal, per se, that is necessary to yield a counterfactual reading. But, instead, it is temporal specification that is necessary –
3.7. Conclusions

and so, as modals are specified for tense they fulfil this requirement, by definition. Contrasting the English data with Palestinian, we see that in Palestinian a modal in the consequent is not necessary but that an extra tense morpheme in addition to the modally operating NAV morpheme is required.

Thus, this chapter concludes that, in the absence of a dedicated marker, the semantics of counterfactuals requires a NAV denoting element in addition to temporal specification. Temporal specification can be syntactically provided via a T head, but need not be. This depends on the language. For example, while Palestinian requires a slot for real tense in addition to the slot for fake tense and, therefore, requires two TPs, English syntax requires one TP.\textsuperscript{33} Hence, the tense slot can be real or fake, in English. This means that the requirement for real tense in the syntax is parametrized, but that real tense specification is semantically necessary.

CF requirements are summarised in the following:

**Antecedent:** if + NAV ... vP ...

**Consequent:** NAV + T/MOD ... vP ...

The underspecification approach to the semantics of so called past tense morphemes in terms of NAV proposed here allows for a semantics-free syntax of CFs, and accounts for the ambiguity attested in some structures between a CF and a non-CF interpretation.

This chapter also offers an account of counterfactual strengthening strategies by alluding to markedness: marked strategies – such as the addition of a NAV morpheme, a subjunctive morpheme or movement – result in an emphatic effect. Not only does the addition of NAV or subjunctive morphology (ex. Palestinian law (2\textsuperscript{inn}no) kaan as illustrated in (241a)) result in a sort of marking that affects the strength of the counterfactual inference, but so does the activation of the Mood node via, for example, movement across it on the way to the CP domain (ex. Palestinian iza-\textsuperscript{kanno} as illustrated in (241b) and represented in (242). This is in contrast with (241c), which lacks the emphatic effect.

\begin{itemize}
\item[(241)]
\begin{itemize}
\item[(a)] law (\textsuperscript{2\text{inn}}no) kaan fi l-bet, ...
\item if\textsubscript{CF} (SUBJINC) be.pst.3sm in the-house
\item ‘If he had been home, ...’
\item[(b)] iz-kan-no fi l-bet
\item if-be.pst.3sm-subjinc.3sm in the-house
\item ‘If he had been home, ...’
\item[(c)] iza kaan fi l-bet hala?, ...
\item if be.pst.3sm in the-house now
\item ‘If he were home now, ...’
\end{itemize}
\end{itemize}

\textsuperscript{33}That is, English requires one TP in the consequent. The antecedent, on the other hand, may have two TPs as when the complement of NAV is infinitival, as we have seen in (209c).
Importantly, the account offered in this chapter is able to explain emphatic counterfactuals without alluding to backtracking semantics (cf. Dahl 1997, Ippolito 2003) that can only be appealed to for temporal strategies in tense oriented languages. While the backtracking approach provides a viable philosophical explanation, it fails to explain the crosslinguistic diversity which does not always employ backtracking elements in counterfactuals.

Last, but not least, by comparing more transparent languages with less transparent ones, this chapter solved the puzzle of the imperfective in CFs: the imperfective is an ingredient common in counterfactuals due to its modal uses, the habitual and future. Importantly, however, I have suggested that it is not that there is a requirement for modality, but that what is required is in fact a place holder in T⁰ or in Mod⁰ which, in turn, allows the NAV morpheme to be interpreted modally. English and Hebrew do not transparently display the morphological ingredients that we see overt in Hindi, Palestinian, and (to a certain extent) in Zulu CFs. But the function of the ingredients which are employed in CFs is that of past and future/habituality, outside of CFs. This observation leaves us with a question that is interesting from a typological perspective, and that is whether the common denominator between future and habitual morphemes is simply their being necessity modals. This remains to be tested in future work.