Past and Present Futurates: The Role of Tense and Modality

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Abstract

Present futurates, such as "The Nicks are playing the Yankees tomorrow" (Lakoff 1971), are typically associated with an inference of (speaker) certainty at the time of utterance. This paper aims to explain both why present futurates convey certainty and why this inference is different in their past counterparts, as in "The Nicks were playing the Yankees tomorrow." Our analysis draws on insights from Copley (2008) and, primarily, Kaufmann (2005), while avoiding specific challenges faced by these previous accounts.

We demonstrate that, crosslinguistically, present futurates exhibit a richer distribution than previously observed, as seen in languages like Dutch and Arabic. This broader range extends beyond planned eventualities and natural dispositions, challenging the traditional English-based data. We propose that both temporal and modal factors kinds drive this variation: The temporal factor is the embedding of grammatical tense that provides the anchoring time. The modal factor involves a necessity modal, embedded under grammatical tense, with an epistemic ordering source, which operates on a metaphysically diverse modal base, effectively dismissing open futures to include only those epistemic possibilities the speaker considers settled. Furthermore, we argue that the possible readings of a futurate in a particular language depend on the interaction between tense and other future-oriented morphology. Finally, we observe that any restrictions on present futurates in a given language also apply to their past counterparts. The contrast between past and present futurates, especially with respect to speaker certainty, is explained through lexical-pragmatic competition (cf. Altshuler & Schwarzschild 2013), but crucially within a model of an open future that acknowledges that expectations and possibilities may change over time.

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1 Introduction

Futurates are sentences about the future that do not employ future morphology. Unlike future sentences that include *will* in English or other forward-looking modals, as in (1), futurates are morphologically distinct: they refer to future events but are expressed through past or present tense morphology (2).

(1) a. We will have lunch together (tomorrow).
b. We shall/ must/ may/ might/ have lunch together (tomorrow).

(2) a. We are having lunch together (tomorrow).
b. We were having lunch together (tomorrow).

The future reference of *will* and other forward-looking modals has been extensively discussed in the literature (e.g., Dowty 1977, Comrie 1985, Steedman 2002, Condoravdi 2002, Kaufmann 2005, Broekhuis & Verkuyl 2014, Giannakidou 2014, Giannakidou & Mari 2018, del Prete 2017). A central debate, here, concerns whether *will* is purely modal or a hybrid of tense and modality (see Cariani 2021), though few accounts treat *will* as a purely temporal morpheme (but see Kissine 2008 for a contrary view).

Futurates have received some attention in the literature (e.g., Garey 1957, Vendler 1957, 1967, Zandvoort 1965, Goodman 1973, Vetter 1973, Wekker 1976, Lyons 1977, Dowty 1979, Moens 1987, and more recently Copley 2002, 2008, 2014, 2018, Ippolito 2004, Kaufmann 2005, Broekhuis & Verkuyl 2014, Giannakidou 2014, and Rullmann et al. 2023). However, the semantic behavior and distribution of futurates have yet to be fully understood. For example, it remains unclear how future sentences in (1) differ from futurates in (2), and how present futurates (2a) differ from past futurates (2b).

Let's first briefly address some major properties of futurates. We start with discussing some properties related to tense, before we address some modal, and finally aspectual properties of futurates.

An obvious observation is that the truth of a past sentence with a past interpretation, or a present sentence with a present interpretation, typically corresponds to reality. The examples in (3) are considered true at their respective times —2 o'clock yesterday or at the moment of speech.

(3) a. The Red Sox played at 2 o'clock yesterday.
b. Red Sox are playing at the moment.

However, since the future is open, the truth of a future or futurate utterance depends on a reality that has yet to unveil itself. This raises a series of questions: What is the contribution of present or past tense morphemes to future meaning? How do past and present morphemes serve as means for future expression? What enables these morphemes to convey future meaning in the first place?

Note in this respect that a present-tense futurate conveys that the speaker is certain, at the time of utterance, that the denoted event will indeed occur (or not when negated), as illustrated in (4).

(4) a. The Red Sox are playing the Yankees tomorrow, (#but they won't / might not / I don't think they will).
b. The Red Sox aren't playing the Yankees tomorrow, (#but they will / might / I think they will).

In contrast, the same continuations seem acceptable with past futurates, as they lack the same sense of certainty at the time of utterance.

(5) a. The Red Sox were playing the Yankees tomorrow, (but they won't/ might not/ I don't think they will/ I'm not sure anymore that they will/ aren't they?).
b. The Red Sox weren't playing the Yankees tomorrow, (but now they will/ might / I think they will/ I'm not sure anymore that they won't/ are they?).

The certainty associated with present futurates is referred to as the Certainty Condition (CC) by Kaufmann (2005), who argues that futurates (as any other other present tense utterance) are subject to this condition, much like regular futures involving *will* (6).

(6) a. The Red Sox will be playing the Yankees tomorrow, (#but they won't / might not / I don't think they will).
b. The Red Sox won't be playing the Yankees tomorrow, (#but they will / might / I think they will).

Nevertheless, the notion of this CC is too strong to adequately describe this effect, as past futurates strikingly appear to lack it. As shown in (5), the continuations in (4) are perfectly acceptable. Note that these facts also hold true when the futurate is replaced by a genuine past tense future involving *would*. This suggests, at least superficially, that the CC does not apply to past futur(ate)s.

In fact, uttering a past futurate completely out of the blue without a continuation that usually signals uncertainty sounds unnatural, as illustrated in (5). In the right contexts, past futurates seem to be felicitous across a scale of certainty, encompassing those in which the speaker is at present certain, uncertain, and even certain that not: (7).

(7) a. Certainty: The Red Sox were playing the Yankees tomorrow, and play they will!
b. Uncertainty: The Red Sox were playing the Yankees tomorrow, but I don't think they will/ I'm not sure anymore that they will.
c. Certainty that not: The Red Sox were playing the Yankees tomorrow, but the game just got cancelled, so unfortunately, they won't.

It has also been observed that futurates in English convey a sense that a future-oriented eventuality is planned, scheduled, or otherwise determined (cf. Copley 2008), as illustrated in (8) (adapted from Copley 2008, based on similar examples by Lakoff 1971, who actually favored the Yankees). Choosing a predicate with an outcome that cannot be determined

at the time of utterance renders the futurate unacceptable, as shown in (9) (unless, of course, the game is rigged).

(8) a. The Red Sox *play* the Yankees tomorrow.
b. The Red Sox *are playing* the Yankees tomorrow. (Copley 2008)

(9) a. #The Red Sox *defeat* the Yankees tomorrow.
b. #The Red Sox *are defeating* the Yankees tomorrow. (Copley 2008)

In other languages, however, a "plan-like" restriction is absent. For instance, in Dutch, examples of this nature are completely natural (see (10)-(11)), even though Dutch, like English, also has a future auxiliary available. Similar observations have been reported for French and Italian (Le Goffic and Lab 2001, Ippolito 2003).

(10) Morgen speelt Nederland tegen Duitsland
Tomorrow plays Holland against Germany
'Tomorrow Holland will play against Germany'.

(11) Morgen verslaat Nederland Duitsland
Tomorrow beats Holland Germany
'Tomorrow Holland will beat Germany'.

Putting wishful thinking aside, utterances like (11) could be made by speakers who appear to possess some kind of clairvoyant foresight or who are in other ways convinced of this outcomes. The felicitousness of such utterances are thus strongly context dependent, and convey a strong sense of certainty about the outcome. In such cases, the speaker is generally perceived as having rational reasons for their belief, because factors like the Dutch playing at home and two key German players being injured lend support to the forecast (even though the outcome of a sporting event is inherently uncertain). Crucially, this example shows that contexts beyond mere plans can justify the use of a present futurate in Dutch and that Dutch futurates are thus different from their English counterparts.

Another notable observation is that the "plan-like" restriction at play in English present futurates extends to English past futurates as well, as illustrated in example (12).

(12) a. The Red Sox *were playing* the Yankees tomorrow.
b. # The Red Sox *were defeating* the Yankees tomorrow.

In contrast, Dutch past futurates are as unrestricted as their present counterparts, as demonstrated in example (13). Should the rationale behind a belief weaken –such as when unexpected setbacks occur, like a bus accident on the way to the match affecting player morale– the speaker may no longer feel sufficiently certain to assert the present futurate in (11). A past futurate as in (13) may be uttered instead. This dynamic highlights that while Dutch futurates allow for a broader range of interpretations

compared to their English equivalents, both languages exhibit the same restrictions for past futurates as those governing their present futurates.[1]

(13) Morgen versloeg Nederland Duitsland. Daarvan waren we
Tomorrow beat.PST Netherlands Germany. of.that we were
allemaal overtuigd.
all convinced.
'The Netherlands "was supposed to" beat Germany tomorrow. We were all convinced of that'

This paper addresses several crucial questions regarding tense, modality, and aspect in futurates: (i) Why is (past and present) tense morphology able to make reference to events that occur at a later time? (ii) Why do present tense futurates convey speaker certainty at the time of utterance, while past futurates do not do so? (iii) What accounts for the cross-linguistic variation in the kinds of eventualities that can be expressed using futurates? And finally, (iv) what insights can a cross-linguistic investigation of futurates provide about the interactions between tense and modality more generally?

To address these questions, we will propose the following key assumptions: (i) Grammatical tense is intertwined with modality: grammatical tense introduces a necessity modal that operates below it, generalizing the notion that the time over which an eventuality (including, but not restricted to, plans) is asserted is constrained by tense. (ii) The modal base for futurates is metaphysical, consisting of real future possibilities. While the future is open, only those possibilities deemed epistemically settled by the speaker are retained through an epistemic ordering source acting effectively as a pruning operation that discards other potential, but unlikely, worlds. (iii) The interaction with other types of future-oriented morphology determines the availability of a forward-looking perspective in a tensed clause in the languages under discussion. (iv) There are certainty dynamics at play: Both past and present futurates express that future eventualities are considered epistemically settled: Present futurates encode current certainty, while past futurates encode past certainty, which often give rise to an implicature of current uncertainty, reflecting changes in speaker confidence over time. This competition between the two tense forms, clarifies why certainty only appears to emerge with present futurates. We conclude that certainty acts as an inference rather than as a condition.

Our article is organized as follows. We begin in §2 by discussing and evaluating two recent prominent proposals regarding the distribution and semantics of futurates, namely those by Copley (2002, et seq.) and Kaufmann (2005). While these proposals address certain aspects of futurates, they both fall short of fully accounting for the observed cross-linguistic

[1] An anonymous reviewer wonders why the continuation facilitates the acceptability of the sentence and asks whether this may involve indirect Sequence of Tense, accomodiated by the fact that *daarvan* anaphorically refers to the first sentence. That maybe very well be the case. However, in that case, *versloeg* would still be a past tense futurate, as it is anchored with respect to a time interval in the past where the speaker was convinced but refers to a future time point with respect to that.

differences, which we will demonstrate. Furthermore, although one proposal (Copley 2002, et seq.) can explain the differences between present and past futurates, and the other the role of the usage of *will* (Kaufmann, 2005), a comprehensive understanding of futurates –particularly concerning the dovetailed relationship between tense and modality– remains necessary. This will be discussed in §3.1 and §3.2. We will also illustrate that existing proposals inadequately incorporate the role of other future-oriented morphology. This omission is significant, as will be evident in our examination of the restrictions on the types of predicates that can appear in English futurates and those that can appear in other languages (§3.3). §3.4 discusses the asymmetric entailment relation between present and past morphology. We observe that past futurates are semantically compatible with all kinds of certainty effects certainty — ranging from certainty to uncertainty to certainty that not —yet they are typically used in contexts where the speaker lacks certainty about the future realization of the event, unless the speaker explicitly indicates otherwise; here, we argue that this is due to the fact that speaker certainty needs to be evaluated against grammatical tense. Finally, §4 concludes.

2 Previous accounts: Insights and Challenges

2.1 Futurates as Causatives

2.1.1 Copley (2008, 2018)

Copley's seminal work on futurates (2008, 2014, et seq.) argues that futurates are not merely arbitrary utterances where a future reading emerges without future morphology. In English, at least, futurates arise under particular semantic/pragmatic constraints. Broadly speaking, English futurates refer to planned or settled eventualities (though these are not the only available readings, see (16) discussed below). Accordingly, Copley (2008) posits that futurates *presuppose* the existence of a director with the capability to ensure that a particular event (a so-called p-eventuality) will occur, and *assert* that this director is committed to the realization of the p-eventuality. Since baseball games can be planned but not their outcomes, this explains the contrast in (14):

(14) a. The Red Sox are playing the Yankees tomorrow.
b. #The Red Sox are defeating the Yankees tomorrow.

For Copley (2008), the mere existence of a plan and a director is not enough for (present) tense futurates. They also presuppose the speaker's confidence in the director's ability to execute the plan. This explains why the continuations in (15) are unavailable.

(15) a. The Red Sox are playing the Yankees tomorrow (#but they won't/ might not/ I don't think they will).
b. The Red Sox aren't playing the Yankees tomorrow (#but they will/ might / I think they will).

However, planned event readings are not the only interpretations that futurates can yield. Another type of reading involves natural dispositions, as illustrated in (16).

(16) The sun rises tomorrow at 6am.

Clearly, no director is involved in the sun's rising, at least not in the sense implied in plans. For this reason, Copley (2018) broadens her original account, arguing that futurates involve a double eventuality structure, consisting of a cause and an effect, with the p-eventuality being true of the effect.

Concretely, Copley (2018) argues that a proper representation of futurates should involve two syntactically encoded eventualities, with the higher one denoting a stative cause (the plan, or more generally, the intention). This stative cause occurs in the present or past, while the effect occurs at a future time. The futurate thus makes reference to both the time of the grammatical tense (present/past) and a future relative to that tense. The truth of a futurate is evaluated by assessing the truth of that higher, stative eventuality rather than the lower, p-eventuality.

In this light, Copley (2018) revisits some assumptions made in her previous work. In this causative framework, the existence of a director is only implicit (merely inferred rather than explicitly stated) and not encoded in the syntax. The causes of p-eventualities include intentions that must be attributed to animate entities. Since for her intentions give an agent the ability to control the outcomes of their actions (as she attributes to Farkas 1988), the inference of the speaker's confidence also follows.

To account for futurates that express natural dispositions, which represent a subset of natural tendencies, Copley draws on ideas from Heim (1992) to argue that the same underlying causative structure applies. However, the nature of the intentional relation differs: instead of a preferential relation (in the case of plans), where the state reflects a preference for the p-eventuality to occur, it is a dispositional relation. In this framework, the intentional state is characterized as a disposition that inevitably leads to an eventuality fulfilling the relevant description. This distinction reinforces Copley's broader view, where both planned event readings and natural dispositions are understood as linked to their respective p-eventualities through a causative structure, highlighting the nuanced similarities between intention and natural tendencies as causal states.

Thus, in both cases, the use of a futurate indicates that p-eventualities are treated as if they are settled to occur. For Copley, this sense of certainty, or likelihood, is not concerned with the outcome of the p-eventuality itself but is fundamentally linked to the plan or physical disposition at the time of utterance, particularly in the case of present futurates (Copley 2018: 17).

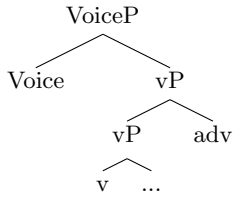
Copley (2018) marks a significant improvement over her earlier work in 2008 by providing a unified account for both futurates that denote planned events and those that denote natural dispositions. Crucially, the presence of directors no longer needs to be explicitly postulated in the syntax. Moreover, the speaker's certainty effect for the present tense follows

straightforwardly, as the causal structure implies that the p-eventuality occurs at a later time, but is planned or intended at the time denoted by grammatical tense. In contrast, past futurates lack this certainty effect because the plan or intention may have seemed certain at a time prior to the utterance, but not necessarily so at the time of utterance itself. Pragmatic competition dictates that a past futurate is only acceptable if the corresponding present futurate no longer accurately reflects the situation. As we will demonstrate in our own analysis in 3.4, this distinction highlights a fundamental difference between present and past futurates. Nevertheless, Copley's approach still encounters certain challenges. In the upcoming subsection, we discuss three of these challenges.

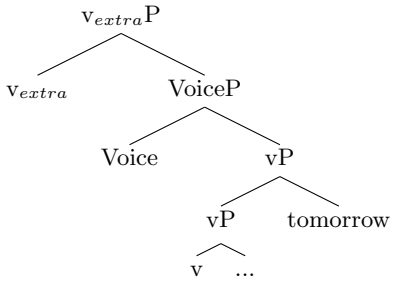
2.1.2 Challenges

The first challenge is posed by the fact that the syntax of present futurates in Copley's approach is more complex than that of corresponding non-futurate present tense examples, as it incorporates a second v head in the syntactic structure, as illustrated in the trees below.

(17) Plain present tense



(18) Present Futurate



In Copley's (2018) analysis, a regular present tense utterance contains a single vP, as illustrated in (17). In contrast, a futurate comprises two vPs, represented in (18): one that introduces the cause and another that introduces the effect, rendering futurates essentially to be homophonic to plain tensed clauses. The presence of this extra head in futurates, for her, is justified by the fact that futurates, unlike regular tensed utterances, permit double temporal adverbial modification, as demonstrated by the examples of a regular past in in (19a) and a past futurate in (19b).

(19) a. ∗Yesterday, the Red Sox were humiliating the Yankees today.
b. Yesterday, the Red Sox were playing the Yankees tomorrow.

However, while these examples provide *semantic* evidence for two temporal referents (in addition to the time of utterance) and, consequently,

for two eventualities, there is no *syntactic* evidence to support the postulation of distinct structures for the different readings of such examples. The existence of different readings does not inherently indicate structural ambiguity. Hence, the null hypothesis should be that a sentence like (20) is underspecified with respect to a regular past interpretation and a past futurate interpretation, rather than structurally ambiguous.

(20) The Red Sox were playing the Yankees (when I came in/ but they changed their plans).

In the following sections, where we pave the way for our own analysis, we will argue that this alternative perspective without structural ambiguity between plain present tenses and present futurates is preferable on several grounds and that, in the absence of supporting evidence, the proposal of a double v-layer for futurates cannot be readily upheld. Present tense futurates do not have to be taken to be homophonous and syntactically different from their plain present tense counterparts.

The second challenge arises from the fact that while natural dispositions, such as in (16), are acceptable, we must question why this does not hold for examples like (21).

(21) #It rains/ $^{??}$It is raining tomorrow at 6.

Copley argues that this is due to two different types of futurates: those whose state is permanent or long-standing vs those where the plan or disposition is more temporary. The former tend do go with simple present/past tense futurates, the latter with progressives. This is evidenced by the fact that (22) is fully ungrammatical.

(22) $*$The sun is rising tomorrow at 6.

Natural dispositions like sunrise are permanent and law-like, making them incompatible with the progressive (see also Rullmann et al. (2023) who convincingly show that simple futurates are only fine with schedules (in the broadest sense)). But this gives rise to problems when it comes to less permanent and more temporary eventualities like rain. Her reasoning may clarify why the simple present form in *It rains tomorrow* is generally unacceptable. But, it fails to account for why *It is raining tomorrow* is only (marginally) acceptable for some native speakers.

At the same time, while rain does not always follow a predictable pattern it could still be seen as involving a somewhat permanent tendency, for instance when rain is very likely in particular seasons. There, *It rains tomorrow* should be more acceptable, contrary to fact. It, therefore, seems preferable to explain these cases without postulating two separate types of natural dispositions —permanent versus temporary— as this contrast doesn't consistently predict the unacceptability of examples like (21).

The third challenge is posed by cross-linguistic empirical facts, which reveal that other languages exhibit examples with more liberal interpretations than those attested in English. For instance, as illustrated in (23)-(24), Dutch futurates, similar to English, can refer to both planned and natural events. However, Dutch also accommodates interpretations

involving (meta)-physical events that lie outside the scope of an agent's capacities, as seen in (25). Consequently, Dutch futurates demonstrate a semantic flexibility that is not present in their English counterparts.

(23) We eten vanavond om 7 uur
We eat tonight at 7 o'clock
'We are having diner tonight at 7.'

(24) De zon komt morgen om 6:30 op.
The sun comes tomorrow at 6:30 up
'The sun rises tomorrow at 6:30'.

(25) Morgen regent het.
Tomorrow rains it
'Tomorrow it'll rain.'

Dutch even permits conjectural readings of present futurates, which express speakers' conjectures about future events occurring, as demonstrated in (11), repeated here in (26), albeit it that the speaker appears to have some kind of clairvoyant foresight or is in other ways convinced of this outcome. Notably, the necessity of including *will* in the English translation of these sentences highlights the absence of such conjectural futurates in English.[2]

(26) Morgen verslaat Nederland Duitsland.
Tomorrow beats Holland Germany
'Tomorrow Holland will beat Germany'.

In addition, Dutch allows other volitional futurates that are absent in English, such as promises (27), threats (28), and offers (29).

(27) Morgen geeft Marie je een cadeau.
Tomorrow gives Mary you a present
'Tomorrow, Mary will give you a present.'

(28) Morgen krijg je geen eten.
Tomorrow get you no feed
'Tomorrow, you won't get any food.'

(29) Morgen hoef je niet te werken.
Tomorrow need you not to work
'Tomorrow, you won't have to work.'

A distinctive feature of Dutch in this regard is that it also allows for promises that are beyond the speaker's control, as illustrated in (30). As the translations indicate, these sentences require the overt future auxiliary *will* and cannot be expressed as futurates in English.

(30) Hij komt terug. Dat beloof ik je.
He comes back, that promise I you
'He will be back. I promise you.'

[2] As an anonymous reviewer notes, adding a modal like *waarschijnlijk* ('probably') removes this clairvoyance effect. Presumably this is the case because the speaker then conveys (almost-)certainty about the high probability of the p-eventuality.

Dutch present futurates allow for a variety of readings that cannot be adequately explained by alluding to plan restrictions or deterministic causality.

The differences between Dutch and English futurates suggest that Copley's (2018) causality framework may not be universally applicable across languages. The absence of the hypothesized causality restriction in Dutch indicates that such an analysis may only hold for English, raising the question of whether a unified framework can be developed to account for both the rigid interpretations in English and the more flexible readings in Dutch. Our proposal, presented in §3, aims precisely at establishing a unified framework where we allude to settledness, rather than causality. However, before proceeding, we must first consider a critical question: how can we be certain that Dutch present tense morphology genuinely reflects a present tense rather than a non-past? In other words, can we rule out the possibility that the differences between English and Dutch stem from the fact that English present tense is indeed a present tense, while Dutch present tense is merely a non-past, as suggested by Copley (2008: 262)?

2.1.3 A Tense Parameter or a Flexible Approach?

One potential explanation for the difference between English and Dutch, as suggested by Copley, is based on Pancheva and von Stechow's (2004) proposal that languages with present tense morphology can be divided into two types: *present as present* languages and *present as non-past* languages. In *present as present* languages, the present tense can only refer to the time of utterance, whereas in *present as non-past* languages, it may refer to any time that does not precede the time of utterance.

(31) (Pancheva and von Stechow's 2004)

a. English [[PRESENT_1]] = $\lambda\, p.\ \lambda\, t_1\ [t_1 = t_c\ \&\ p(t_1)]$

b. Dutch [[PRESENT_1]] = $\lambda\, p.\ \lambda\, t_1\ [t_1 \geq t_c\ \&\ p(t_1)]$

where t' $\geq$ t iff there is no t" $\subset$ t', such that t" $<$ t

By considering English as a *present as present* language and Dutch as a *present as non-past* language, the examples discussed in the previous subsection could receive a natural explanation (see Copley 2008: 262; and Giannakidou 2014, who explores whether present tense denotes a present or a non-past more systematically). However, there are at least three reasons to approach this proposal with caution, raising questions about whether a parameter along these lines can underlie the difference between Dutch and English.

The first reason to question this proposal is that past and present tenses in both languages stand in morpho-semantic competition, indicating they should belong to the same morpho-semantic category. In *present as present* languages, that would be straightforwardly the case. However, under the fairly standard assumption that the future functions as a modal rather than a tense, *present as non-past* languages would imply that their past tense is categorically distinct from their present tense. In this view, past tense would be considered a pure tense, while present tense, as a

non-past, would represent a conflation of tense and modality. This conflation would preclude morpho-semantic competition between the two tenses. Consequently, one of two conclusions must follow: either the present cannot be classified as a non-past, or the standard view of past tense must be re-evaluated, suggesting that both past and present tenses are conflations of tense and modality (see Kaufmann 2005; Karawani, Kauf & Zeijlstra 2019, and §3.1, where we pursue this in more detail). Moreover, while some scholars have defended binary (past/non-past) tense systems (e.g. Comrie 1985, Broekhuis & Verkuyl 2014), Cable (2017) contends that, empirically, the only true tenses attested across languages are (at most) past, present, future, and non-future (see also Cable 2013). If this is accurate, then cross-linguistically, there would be no grammatical space for a non-past category.

A second reason to question the *present as present* versus *present as non-past* parameter is that, in specific contexts where we would expect the two language types to behave differently, they actually demonstrate similar behavior.

For instance, as mentioned by an anonymous reviewer, both in English and Dutch, statives in the present tense lack a future reading (unless indicated by an additional adverbial).

Consider example (32). Here, we see that when a stative appears in the present tense, it cannot gives rise to a future reading. Only with adverbial modification is this possible (33). If Dutch was a true present as non-past language, both examples should behave alike in this respect.

(32) Marie is beroemd.
Marie is famous
'Marie is famous.'
#'Marie will be famous.'

(33) In 2030 is Marie (vast en zeker) beroemd.
In 2030 Marie is (surely and certainly) famous gets
'In 2030 Mary will (most certainly) be famous.'

Of course, the question arises why (33) is still possible in Dutch (while its English counterpart is lacking). This, however, involves he fact that the speaker in one way or the other must already be certain now about Marie's fame in 2030, indicating that (33) has more than just a future reading.

Another context involves so-called *double access* readings. Consider examples (34) and (35). In both cases, the time of Mary's pregnancy should overlap with the time of saying *and* the time of utterance. If the time of saying is located too far away from the time of utterance, these sentences sound odd. In English, the simultaneity of the pregnancy with the time of John's saying is easily explained if the embedded tense is understood as a (relative) present. But then, it is hard to understand why in (35) the present would not be a relative non-past and would allow a reading where the pregnancy starts later than the time of saying. These examples indicate that the present tense behaves similarly in both Dutch and English, further supporting the notion that the Dutch present tense is not merely a non-past.

(34) John said (#two years ago) that Marie is pregnant now.

(35) Jan zei (#twee jaar geleden) dat Marie (nu) zwanger is.
Jan said (two years ago) that Marie (now) pregnant is
'Jan said two years ago that Marie is pregnant now.'

A third reason to question the idea that a parameter such as the one discussed above is at play comes from crosslinguistic empirical observations. This parameter suggests a binary classification of languages: *present as present* languages, where futurate readings are heavily restricted, and *present as non-past* languages, where futurate readings should in principle always be available. However, the cross-linguistic picture is more varied. For instance, Modern Standard Arabic present tense is more liberal than English regarding futurate interpretations, allowing for natural events like rain and future predictions, which implies that it cannot be classified as a *present as present* language (as illustrated in (36)). At the same time, it does not fit the *present as non-past* classification either, as futurates are not as free as in Dutch. This is exemplified in (37a), where a present futurate (which is normally expressed via a present participle) cannot be used for promises that are beyond the speaker's control. Instead, much like *will* would be required in English, the overt prospective aspectual morpheme *raħ* (accompanying the imperfective verb) is employed, as seen in (37b).[3]

(36) a. hayha mšatye bukra.
see.this rain.PTCP.SG.F tomorrow
'It will rain tomorrow.'

b. bukra barsilona ɣaalbiin
Tomorrow Barcelona win.PTCP.PL
'Barcelona will win tomorrow.'

[3]Although we refer to a present tense interpretation in the discussion of (36)-(37), this tense is not morphologically realized. Following standard assumptions in the analysis of Arabic tense, we assume that present participial predicates are embedded under a null present tense operator (Karawani 2014). In Arabic, present tense is therefore not obligatorily encoded by overt verbal morphology. Independent evidence for this comes from so-called nominal sentences, which consist of nouns, adjectives, or participles and lack any copula or auxiliary carrying tense. In the absence of overt tense marking, such clauses systematically receive a non-past—typically present—interpretation. An illustration is given in (i)-(iii), where a participial predicate without verbal inflection yields a present progressive reading (see, Karawani 2014, 57: ex.(94-99)):

(i) huwwe walad
he boy.n.sm
'He's a boy.'
(ii) huwwe naayem
he sleep.ptc.sm
'He is sleeping.'
(iii) huwwe mabsuut
he happy.adj.sm
'He's happy.'

We therefore use the term present tense to refer to the semantic tense of the clause, which may be realized as null in the morphosyntax.

(37) a. #(b-awʕid-ek inno) huwwe raajiʕ
(MOD-promise.1.SG.IMPFV-you.F that) he PTCP.SG.M-come.back
bukra.
tomorrow
Intended: '(I assure you that) he will be back tomorrow.'

b. (b-awʕid-ek inno) huwwe raħ- yirjaʕ
(MOD-promise.1.SG.IMPFV-you.F that) he PROS -come.back.3.SG.IMPFV
bukra
tomorrow
'(I assure you that) he will be back tomorrow.'

The facts above indicate that the difference between the Dutch, Arabic and English futurates is not categorical: Arabic takes a middle position between English and Dutch. That means that a Copley-system in terms of causatives cannot underlie futurates in general, calling for a more flexible approach to futurates that allows languages to differ with respect to the availabilty of futurates, while at the same time providing a uniform account for the present tense. We will provide such an account, but we need to discuss another approach to futurates first.

2.2 Futurates as modals

2.2.1 Kaufmann (2005)

What we have observed so far is that languages exhibit variation in the types of events that can be expressed by futurates. English restricts futurates to planned events and particular types of natural dispositions, while Dutch allows for a much less restricted range of events. Other languages, such as Arabic, occupy an intermediate position in this spectrum.

What these languages have in common is that futurates in the present tense, regardless of their usage restrictions, convey a certainty inference at the time of utterance. We have already seen this in English with the example in (15), which is repeated below under (38a). The same inference holds for the Dutch and Arabic counterparts presented in (38).

We already saw that for English in (15), repeated below in (38a). The same applies to the Dutch and Arabic counterparts in (38b,c).

(38) a. The Red Sox are playing the Yankees tomorrow, #but they won't/ might not/ I don't think they will.

b. Ajax speelt morgen tegen Feyenoord, #maar ik denk van
Ajax plays tomorrow against Feyenoord, #but I think of
niet / #ik denk dat ze dat niet zullen doen.
not / #I think that they that not will do
'Ajax plays against Feyenoord tomorrow, #but I don't think so / #I think they won't do that.'

c. barcilona laaʕbe bukra, #bas mis raħ yilʕabu/
Barcelona PTC.SG.M.play tomorrow, but not PROS play.IMPFV-3PL/
#yimkin la2/ #b-afakir-eš.
maybe not/ MOD-think.1SG-NEG
'Barcelona play tomorrow, #but they won't play/ maybe not/

I don't think so.'

Kaufmann (2005) argues that not only futurates, but all present tense clauses are subject to a so-called Certainty Condition (CC), which asserts that a tensed sentence is felicitous only if it is compatible with the speaker's epistemic state at the time of utterance. This condition on assertability is echoed in other accounts (e.g., Ippolito 2003, 2004) and of course operates alongside Gricean pragmatics.[4] However, the CC is not without controversy, as it seems absent when these constructions appear as the antecedent of a conditional. Veltman (1986) points out that a proposition p can be embedded in the antecedent of a conditional if the truth of p remains unsettled, i.e. if the truth status of p is open.

(39) a. If he submits his paper to a journal, we won't include it in our book.
b. He submits his paper to a journal.

While the sentence in (39b) is indeed subject to a CC —indicating the speaker's certainty about the future paper submission— the same does not hold for the antecedent of the conditional in (39a). Nevertheless, Kaufmann (2005) argues that even the antecedent in (39a) remains subject to the CC, though its effect is suppressed by its embedding under *if*. He posits that all clauses in bare tenses (i.e., past and present) contain a covert epistemic necessity operator, which evaluates their prejacent against an epistemic modal base introduced by the speech act. This covert operator is what triggers the CC in futurates. For a sentence like (40), this means that for every accessible world, it has already been settled at the time of utterance that the p-eventuality will occur – which is precisely what the CC amounts to in English, according to Kaufmann.

(40) He arrives tomorrow.

Kaufmann (2005) derives the futurate reading by assigning the following semantics to (40):

(41) $\lambda s.\Box\ (\lambda j.\mathrm{s} \approx \mathrm{j})(\lambda \mathrm{j}.\exists \mathrm{k}\ [\mathrm{j} \leq k \wedge \mathrm{TOM}_s(\mathrm{k}) \wedge \mathrm{V(he\ arrive)(k)}])$
(where 'k' and 'j' are world-time pairs, '$\approx$' is an objective accessibility relation and '$\leq$' is a temporal non-past relation).

When (41) is applied to a particular speech index s* (a world-time pair as well), the result is TRUE iff at every world-time pair objectively accessible to the speech index, there is a world-time pair k such that the time of k is later than the time of utterance and is included in tomorrow, and is true that he arrived in k:

(42) iff $\forall j$ such that $s* \approx j$, there is a k such that $j < k$ & $\mathrm{TOM}_s*(\mathrm{k}) = 1$ & $\mathrm{V(he\ arrive)(k)} = 1$

[4]Note that the difference between this CC and an inference derived from the Gricean maxim of Quality is that this CC is not-cancelable. It can be thought of as a grammaticalized encoding of this maxim.

(42) amounts to (41) applied to s* being TRUE iff it is settled at s* that he arrives on the next day, which is indeed the meaning (40) has, including the CC.

Kaufmann argues that the covert epistemic necessity modal is inherently part of the meaning of tense, whether it refers to the present, future, or past. Consequently, every tensed utterance induces a CC. However, it is only in the case of future reference that this certainty emerges as a distinct semantic ingredient beyond mere truth. This is because, for any time prior to the moment of speech, truth and certainty naturally align, whereas in the future, truth and certainty have yet to coincide, making the certainty more prominent.

Kaufmann's system offers two significant advantages: first, it can deal with the observation that languages like Dutch and Arabic exhibit less strict restrictions on the usage of futurates compared to English. For Kaufmann, a futurate can be felicitously uttered if it already appears settled in some way at the time of utterance that the p-eventuality will occur. While this still necessitates an explanation for the absence of more liberal usages of settledness in English, this may be easier to achieve than in Copley's approach where it is less trivial how more liberal futurate readings can be accomodated.

Second, the fact that Kaufmann explains the CC in an intuitively appealing manner strengthens the case for attributing a necessity modal to futurates. For Kaufmann, this modal is present in every sentence, which allows him to avoid making any specific claims regarding the syntax of futurates, unlike Copley. However, Kaufmann's account does encounter several challenges, particularly when examining the past tense instead of the present tense.

2.2.2 Challenges

For Kaufmann, the modal necessity operator is always evaluated with respect to the speech index. This means that for every tensed expression, the speaker must be certain about the p-eventuality at the time of utterance. In the case of past tenses, this entails that the speaker must be certain that the relevant event indeed occurred in the past. Indeed, we observe that both examples in (43) are distinctly odd.

(43) a. # The cat is asleep, but I don't think it is.
b. # The cat was asleep, but I don't think it was.

However, as shown in (5) and reiterated in a slightly altered form below, the continuations in (44) are perfectly acceptable.

(44) a. The Red Sox were playing the Yankees, (but they won't/ might not/ I don't think they will/ I'm not sure anymore that they will).
b. The Red Sox weren't playing the Yankees, (# but there was never any plan they would).

While Kaufmann provides a detailed analysis of present tense futurates, he does not address past tense futurates. Nevertheless, since his

system predicts that the CC applies across all sentence types, one would expect it to be relevant here as well. Yet, this is contrary to the observed facts. Notably, in this example, the certainty requirement (at the time of utterance) can be lifted, highlighting the challenges associated with this condition.

What (44) conveys is that the speaker was once certain about the occurrence of the p-eventuality but is no longer. Under Kaufmann's analysis, however, these examples are interpreted such that in every accessible world, it was already settled at the time of utterance that the p-eventuality would occur. Thus, his CC remains encoded in the meaning assigned to past sentences, even though they crucially lack it.

Furthermore, given the way Kaufmann treats deictic elements like *tomorrow*, his theory predicts that any futurate sentence with a future temporal frame adverbial modifying a past tense verb will result in a contradiction. For instance, consider a sentence like (45), which, under Kaufmann's approach, must have the semantics given in (46) –disregarding the meaning contribution of *according to his original plans*.

(45) (According to his original plans,) he *arrived* tomorrow.

(46) $\lambda s.\Box(\lambda j.\text{s} \approx \text{j})(\lambda \text{j}.\exists \text{k}\ [\text{j} > \text{k} \wedge \text{TOM}_s(\text{k}) \wedge \text{V(he arrive)(k)}])$

When applied to s*, the result is TRUE:

(47) iff $\forall j$ such that $s* \approx j$, there is a k such that $j > k$ & $\text{TOM}_s*(\text{k}) = 1$ & V(he arrive)(k) = 1
The result is TRUE iff at every world-time pair objectively accessible to the speech index, there is a world-time pair k such that the time of k is earlier than the time of utterance, and is included in tomorrow and it is true that he arrived in k.

Since tomorrow lies after the time of utterance (given $\text{TOM}_s*(\text{k})$) and since the index k at the same time must precede s* (given $j > k$ and given the accessibility relation between j and s*), (47) results in a contradiction.

Hence, whereas Kaufmann's analysis for present futurates as involving settledness seems more powerful than Copley's causation, it faces severe problems when it is applied to past tense futurates.

2.3 Interim conclusions and prospects

In §2.1, we demonstrated that Copley's account, which relies on plans and causality and is tailored for English futurates, is too narrow to be applied cross-linguistically.

Next, in §2.2, we examined Kaufmann's (2005) modal account, which captures the intuition that certainty (a subjective notion) diverges from (objective) settledness—and thus from truth—in future contexts. However, since Kaufmann posits a covert necessity modal on top of all tensed sentences to account for the CC, his account cannot differentiate between past and present futurates. As a result, both are predicted to be equally certain at the time of utterance, contrary to the observed differences.

To capture the key intuitions while addressing the limitations of previous accounts, we present our own proposal now, in §3. We adopt Copley's insights regarding the restrictedness of English and the contrast between past and present futurates, but also Kaufmann's view that tense inherently involves modality. However, unlike Kaufmann, we propose that this modal is embedded under grammatical tense rather than linked to the speech index. Our proposal inherits from Kaufmann the idea that every tensed clause —both present and past— carries a covert necessity modal. Yet, following Copley, we assert that the (certainty/likelihood) of futurates must be evaluated relative to grammatical tense, not the speech index. Additionally, we assume that this modal operates on a metaphysical modal base, ordered from the speaker's epistemic perspective. Here we also differ from Kaufmann, who argues that this modal is not modified by an ordering source. Our account further distinguishes itself by emphasizing the role of aspectual and modal morphology in the formation of futurates, in order to capture the cross-linguistic variation.

3 Proposal

Our proposal is based on four assumptions that we outline below.

The first assumption is that each tense indeed introduces an epistemic necessity modal, but, unlike in Kaufmann's (2005) account, this modal takes scope below grammatical tense. This expands on Copley's (2008: 35) insight that "the time over which the plan is asserted to hold is constrained by tense," albeit extending this idea beyond just plans. As we will show in §3.1, this assumption can also apply to any future event or state of affairs that is *taken to be settled* within the same epistemic state from the speaker's perspective at the time of evaluation.

Our second assumption is that the modal base for futurates is metaphysical: it consists in real possibilities for the future. Yet, while the future is really open, there is an epistemic ordering source according to which only those possibilities that the speaker takes to be settled survive.

Our third assumption is that the assertability conditions of futurates, which convey future settledness or "certainty" in a broad sense, may arise from lexical-pragmatic factors, including pragmatic competition effects, that affect the exact readings of futurates. Crucially, the interaction with other future-oriented morphology dictates to what extent a forward-looking perspective is available, as discussed in §3.3.

Our fourth assumption, outlined in §3.4, is that both past and present futurates convey that a (metaphysically open) future eventuality is taken to be epistemically settled —either at the time of utterance (for present futurates) or at some past time (for past futurates). In the case of past futurates, it is typically inferred that the speaker at the time denoted by grammatical tense was certain that the (metaphysically open) future eventuality would occur. However, because the future remains really open (and plans or reasons for settledness may change), past certainty does not imply continued or current certainty — though it does not preclude it either. The speaker might still be certain, may have become uncertain, or might even have revised their expectation entirely to the contrary. Pragmatic

competition between present and past futurates thus results in speaker certainty inferences emerging only with present futurates, explaining why past futurates generally tend to convey uncertainty.

3.1 The role of tense in anchoring the modal

To avoid the challenges in Kaufmann's (2005) theory, we introduce two modifications in of it. First, rather than evaluating the necessity modal directly against the speech index, we evaluate it against an index s', such that s' matches the speech index for present tense but precedes it in past tense utterances. Second, we propose that the event must be epistemically settled at the modal evaluation time—whether in the present or past—even though the event occurs later. Kaufmann (2005) posits that the present tense contributes a temporal accessibility relation under the necessity operator. In contrast, we propose that this temporal accessibility is integral to this modal itself, which we interpret as having a relative non-past temporal component. This is an advantage as the temporal anchoring of both present and past futurates to the best of our knowledge this phenomenon has received descriptive but no full explanatory analysis yet.

To see this, take Kaufmann's original semantics (49) for (40) (repeated as (48)). What is highlighted in (49) is Kaufmann's take on the contribution of present tense.

(48) He arrives tomorrow.

(49) $\lambda s.\Box(\lambda j.\text{s} \approx \text{j})(\lambda \text{j}.\exists \text{k}[\boxed{\text{j} \leq \text{k}} \wedge \text{TOM}_s(\text{k}) \wedge \text{V(he arrive)(k)}])$

For us, the meaning of (48) is (50), highlighting our take on the contribution of present tense.

(50) $\lambda s.\boxed{\exists\ s'.\ \text{s}{=}s'} \wedge \Box(\lambda j.s' \approx \text{j})(\lambda \text{j}.\exists \text{k}\ [\text{j} \leq k \wedge \text{TOM}_s(\text{k}) \wedge \text{V(he arrive)(k)}])$

As the reader can see, (49) and (50) are truth-conditionally equivalent, for the simple present tense. However, in the past tense, they diverge significantly. Take (45), repeated below again:

(51) (According to his original plans,) he arrived tomorrow.

In our analysis, when (52) is applied to a particular speech index $s*$, the result is TRUE iff it is settled at some index s', earlier than $s*$, that he arrives on the day after $s*$ (disregarding the contribution of *according to his original plans*)..

,

(52) $\lambda s.\boxed{\exists s'.\ s' < s} \wedge \Box(\lambda j.s' \approx \text{j})(\lambda \text{j}.\exists \text{k}\ [\text{j} \leq k \wedge \text{TOM}_s(\text{k}) \wedge \text{V(he arrive)(k)}])$

This is indeed the meaning (51) has and not the meaning that Kaufmann predicts for past futurates. Since s' and $s*$ are temporally ordered with s' preceding $s*$, the past tense morpheme anchors the modal to an index earlier than $s*$. The contradiction Kaufmann's (46) faced with respect to past tense futurates now no longer arises.

As pointed out by an anonymous reviewer, the question is whether the presence of the necessity modal is at issue or not at issue. Our semantics in (50)/(52) suggest is is part of the assertion, but under negation, questions and conditionals, the certainty effects remain:

(53) a. Do the Red Sox play the Yankees tomorrow?
b. If the Red Sox play the Yankees tomorrow, ...

(53a) cannot be replied to by saying *No, they don't have to*, *No, it's not necessary* or *No, it's not certain*. In fact (53a) does not mean the same thing as 'Is it certain /necessary that the Yankees play the Red Sox tomorrow?' Similarly, (53b) does not mean the same thing as 'If it's certain that the Red Sox play the Yankees tomorrow, ...' This rather suggests that the modal part of the meaning contribution is presuppositional in nature.

At the same time, it is not clear that these facts have to be analyzed in terms of presuppositions. Much depends on where in the clause the necessity modal takes scope. If this modal takes scope above negation, the absence of the negative replies around (53a) may follow as well with the modal being part of the assertion. Then the polar question would would mean {It is certain /necessary that the Yankees play the Red Sox tomorrow, it is certain /necessary that the Yankees don't play the Red Sox tomorrow}. Only if the negation that distinguishes the two disjuncts that represent the meaning of the polar question were to apply lower in the structure, as in {It is certain /necessary that the Yankees play the Red Sox tomorrow, it is not certain /necessary that the Yankees play the Red Sox tomorrow}, the continuations could be felcitous. It is the relative position of the necessity modal and negation that matters.

In this light, it is relevant to remark that in many languages (epistemic) necessity modals, like English *must*, are Positive Polarity Items (PPIs, cf. Iatridou & Zeijlstra 2013), and therefore must take scope above negation. Hence, it would not be that much of a surprise if the covert necessity modal here is also a PPI and hence needs to outscope negation.

For the case of (53b), here what matters, again, is the structural position of the modal. As is well known from the literature on English tense (cf. von Stechow 2003 a.o.), the locus of semantic tense and morphological tense do not always coincide: morphological tense generally appears in a lower position than where tense is interpreted (due to an agree(ment) relation between the two). If that is the case, it is very well possible that the modal in (53b) takes scope above the conditional, and then so does the certainty inference.

This does, however, not mean that the meaning effects discussed around (53) cannot be attributed to presuppositions. It is rather that at this stage, no decisive argument can be provided for either an at-issue or a not-at-issue treatment. For this reason, we stay agnostic here and invite

the reader to think of the representations in (50)/(52) as overall meaning contributions.

However, one caveat needs to be mentioned. If *The Red Socks play the Yankees tomorrow* presupposes that the speaker is certain that the Red Socks play the Yankees tomorrow and asserts that the Red Socks play the Yankees tomorrow, depending on the exact nature of the necessity modal, here is a risk that the presupposition would entail the assertion, rendering the assertion trivial and thus infelicitous. Hence, in order to at least maintain the presuppositional option here a viable alternative, it needs to be shown that the necessity modal is not veridical. Otherwise, a presuppositional account would not be possible. This is, however, exactly what we will do in §3.2.

The question of whether modals occur within the scope of tense concerns how modals acquire their temporal perspective for evaluating their prejacent. It is often observed that in unembedded clauses epistemic modal auxiliaries are typically interpreted from the perspective of the time of utterance (Groenendijk and Stokhof 1975:70) and that they directly take the local evaluation time as their perspective in embedded clauses (Abusch 1997:23). This suggests that there is no syntactic tense scoping over the modal in the logical representation of sentences with modals.

However, Condoravdi (2002), building on Crouch (1994) and Enç (1996), argues that an outer present tense operator sets the temporal perspective of the modal to the utterance time. According to Condoravdi, epistemic modals express "that it is possible or necessary as far as the knowledge of an agent (e.g. the speaker) at the present moment is concerned, that a certain state of affairs obtains at the moment or will obtain in the future" (Condoravdi 2002: 60). Rullmann & Matthewson (2018) extend argue that both present and past tense always scope over (epistemic and other) modals, and that therefore it is the past tense that causes the modal to have a past temporal orientation, a perspective we adopt as well.

We base ourselves on Rullmann & Matthewson (2018), who propose that the modal accompanying grammatical tense is anchored by that tense, be it past or present: past tense shifts the modal's perspective to the past, making it possible or necessary, given the epistemic state of an agent at that past moment, that a certain state of affairs obtains in the future; the present tense relates the modal's perspective to the time of utterance. This analysis thus is able to properly distinguish past from present futurates.

Note, finally, that our approach further predicts that tensed clauses should resist backward shifting, contrary to what happens in, for instance, Broekhuis & Verkuyl's (2014) account. This prediction is indeed borne out by the data. For instance, the present tense in (54) means that the playing event occurs either at the time of evaluation or later, but not before –provided it is epistemically settled at the evaluation time that the event takes place or is bound to happen.

(54) The Red Sox are playing (now/tomorrow/*yesterday).

3.2 The role of the modal base and ordering source

If grammatical tense includes a necessity modal (indicating something that must be the case), this raises questions about the set of accessible worlds this modal relies on —known as the modal base— and whether an ordering source is available to determine the most relevant possibilities for the context of evaluation (Kratzer 2012). Modal bases can vary widely depending on the type of information they draw from; for instance, a modal base might be metaphysical (based on laws of nature), epistemic (based on knowledge), doxastic (based on beliefs), deontic (based on obligations or norms), or bouletic (based on desires or preferences), etc. According to Kaufmann (2005), the modal base in futurates can be "objective" or "subjective," aligning with Condoravdi's (2002) categorization of modal interpretations into metaphysical (objective) vs. epistemic/doxastic (subjective) types.[5]

In standard cases, if the necessity modal is assessed using metaphysical or epistemic/doxastic bases, its truth depends on different forms of settledness. Metaphysical settledness refers to what is determined by the laws of nature, while epistemic settledness depends on what is known (or believed to be known) by the speaker. When the future is not yet fixed (i.e. when the laws of nature make it the case that the future is metaphysically open), any claims about a future being settled can only rely on the speaker's knowledge, making them epistemic rather than metaphysical.

Condoravdi's example, *He may meet the dean* (55), has become a classic for illustrating how modal interpretations hinge on whether a situation is considered settled. This distinction is central to understanding the intended modal base in context. Consider Condoravdi's (2002) examples below:

(55) a. It has been decided whom John will meet, the dean or the provost, but I don't know who it is. He may meet the dean.
b. It hasn't been decided whether John will meet the provost or the dean. He may meet the dean.

In (55a), the question of whom John will meet has already been decided; as the past is closed, the decision is metaphysically settled. Here, the modal *may*, which is a possibility modal, can only be interpreted epistemically —that is, the possibility is open on the speaker's epistemic state, given her lack of knowledge. In contrast, in (55b), the decision remains metaphysically unsettled, so the modal *may* is understood metaphysically, as it reflects open possibilities governed by the way things are objectively, rather than the speaker's subjective knowledge alone.

Condoravdi (2002) argues that unsettledness is essential for a future-oriented modal to receive a metaphysical interpretation, as stated by the Diversity Condition, which requires the event to be open and unsettled at the time of utterance. In contrast, past events, having already been

[5]For simplicity, we will omit the term "doxastic"" and clarify that when we refer to epistemic, we mean what the speaker knows—or, more precisely, what the speaker believes or thinks she knows. Although this could be understood as referring to doxastic rather than strictly epistemic states, nothing in our argument hinges on this distinction. We will use "epistemic," acknowledging that it may imply something weaker than knowledge.

settled, allow only for epistemic uncertainty —a speaker's possible lack of knowledge about past outcomes— rather than metaphysical uncertainty. This aligns with the concept of historical necessity (Kamp 1979, Thomason 1970, 1984, going back to Aristotle). Thus, only future propositions can be unsettled. That being said, let us note, though, that not every future possibility is metaphysically open. For instance, it is metaphysically settled that we will be dead in 200 years (56).

(56) We will all be dead in 200 years.

This highlights that while many future events are uncertain and any settledness claims are contingent on the speaker's sources of knowledge, or reasons for certainty, some outcomes are determined by the laws of nature. Thus, the interpretation of modals must recognize both (un)certainty and (un)settled futures.

We have established, then, that the modal base for future events is predominantly metaphysical. Apart from examples like (56), the examples we used throughout involve cases where the future remains metaphysically open and diverse, meaning that both p and $\neg p$ are possible outcomes: e.g., *The Redsox will play* or *They will not play*, *The Dutch team could win* or *The Dutch team could lose*. However, speakers often convey their beliefs about the future as if certain outcomes were settled within their state of knowledge. This allows futurate statements to imply an epistemic certainty that is distinct from metaphysical certainty, and which is expressible despite the fact that it lacks objective certainty.

In cases where a proposition p is epistemically settled, it is true across an equivalence class of worlds consistent with the speaker's belief state. This is because a proposition cannot be uniformly *true* in an agent's belief state without being also *settled* within that state. Therefore, when futurates refer to an outcome as if it were already resolved (even when it is metaphysically open), they express epistemic settledness —an interpretation that the outcome is taken to be true in every world compatible with the speaker's knowledge or belief, despite future openness.

The role of the ordering source of the necessity modal, in this case, is to establish epistemic homogeneity within the otherwise diverse metaphysical modal base. Certainty acts as the ordering criterion, filtering possibilities to favor those worlds where the speaker's belief about p aligns most closely with certainty. The ordering source takes away worlds where $\neg p$ holds, ensuring that the resulting equivalence class of worlds is homogeneous with respect to p. Thus, even though the future remains metaphysically open, the ordering source creates a set of possibilities that reflect the speaker's sense of epistemic certainty about p, allowing them to express futurate statements with an inferred certainty about an unsettled future. Note that this opens up the way to adopt a presuppositional account for the semantics presented in the previous section: If p is metaphysically unsettled but the speaker nevertheless takes it to hold, then p (the assertion) would not entailed by the (presuppositional) proposition that the speaker is certain that p.

This way the speaker can eliminate certain possibilities to make a (metaphysically open) future event epistemically salient. The rationale

behind this is that we can only effectively engage with a limited number of live possibilities in navigating the world. See Figure 1, illustrating this with respect to "John is coming to dinner tonight." Think of the moment m in Figure 1) as occurring *at the moment of speech*. As the future is really open, from the perspective of that moment, we know that he might not come of course, but we have reasons to disregard all unlikely possibilities that may intervene (e.g., Hollywood calling for an audition, catching Covid, breaking a leg, a meteor hitting, ...) and keep the one in which John comes as the only live possibility we consider. For an illustration of a past futurate, think of the moment m in Figure 1) as occurring *in the past of the moment of speech*, and do the same.

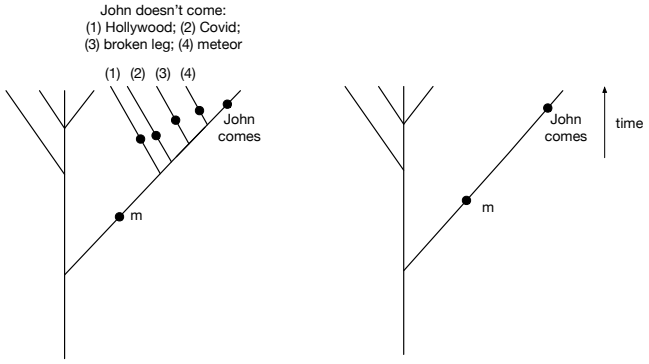


Figure 1: The tree on the right shows the effect of the ordering source: the only live possibility we consider is the one in which John comes. In present futurates, m corresponds to the moment of speech; in past futurates, m is in the past of the moment of speech.

A corollary of our proposal is that futurates require epistemic (though not metaphysical) settledness. For non-futurate present and past tenses, (epistemic) settledness is (trivially) satisfied at the evaluation time, whether at the moment of utterance or a prior time, since truth entails settledness. In contrast, for futurates, truth and settledness do not coincide, making the epistemic ordering source not only useful but in fact essential.

3.3 The role of future-oriented morphology

Given the above, the semantics for futurates is the same across languages (along the lines sketched above), but their usage conditions differ across languages. As we will argue, whether a language exhibits more liberal or more restricted usages of futurates, depends on whether it has other types of future-oriented morphology at it disposal. Thus, we now turn to the exact role of future-oriented morphology when it comes to determining to what extent futurates can be used in a particular language. In this section, we focus on future tense/modal markers like English *will*.

It is well-known fact that both English and Dutch exhibit future temporal/modal markers, *will* and *zullen*, respectively. However, as we will see, they strongly differ in their usage conditions. This, we argue, may explain already why in languages like English futurates are more marked than plain futures, and may therefore lead to futurates being more restricted in their usage conditions. In Dutch, the mirror image appears to be the case. The usage of the future tense/modal marker *zullen* is substantially more marked, and different in its meaning contribution, than that of a futurate.

To see this, let us first look at the competition between English futurates and corresponding sentences with *will*. Kaufmann (2005) provides examples illustrating that *will* does not convey a certainty effect in contrast to present tense futurates. For instance, he shows that in a scenario where a fair coin is about to be tossed a large number of times, (57a) can be felicitously uttered, but (57b) cannot.

(57) a. The coin will come up heads (eventually).
b. #The coin comes up heads (eventually).

Kaufmann (2005) argues that *will* futures express something weaker than certainty, due to particular restrictions on its epistemic ordering source. If he is correct about that and we are correct in that the necessity modal that is present in every tensed clause, including futurates, has an epistemic ordering source operating on a metaphysical modal base, then it stands to reason to assume that this is what underlies the relative strength of futurates vis-à-vis speaker certainty. Irrespective of the exact nature of the ordering source of epistemic *will*, it is reasonable to assume that speakers will opt for a *will*-clause whenever its use is more appropriate than a futurate. A futurate is then felicitous only when the speaker has a clear motivation not to use *will*. We argue that this is only the case when at a given moment, from their epistemic perspective, the event appears certain to the speaker. That is indeed the case with planned events and natural dispositions. This competition with *will*, may thus account for the additional, English-specific usage conditions for futurates beyond settledness.

Strikingly, the Dutch counterpart of (57) functions in exactly the opposite way.

(58) a. ??Het zal (eens) kop worden[6]
It will (once) head become
The coin will come up heads (eventually).
b. Het wordt (eens) kop
It becomes (once) head
The coin comes up heads (eventually).

This suggests that the Dutch *zullen* ('will') makes a different meaning contribution than English *will*. To see what the meaning contribution

[6]An anonymous reviewer reports that this sentence becomes better once *ooit* ('ever') is included: *Het zal ooit eens kop worden* (It will ever once head become). We have no clue why that would be the case.

of *zullen* exactly amounts to, let's focus on the following examples from Broekhuis and Verkuyl (2013).

(59) Het huis stort morgen in.
The house collapses tomorrow PARTICLE

(60) Het huis zal morgen instorten.
The house will tomorrow collapse

Broekhuis and Verkuyl argue that *zullen* denotes purely epistemic modality and not a future tense operator, which expresses the level of speaker's confidence about the likelihood of the p-eventuality. However, they also argue that while (59) conveys that the speaker expects the house to collapse, (60) indicates that there is reliable evidence supporting this expectation. In Dutch, the auxiliary *zullen* ('will') primarily then signals that the source of the evidence, which underpins the speaker's commitment to the truth of the statement, appears to be objective. For instance, (60) could be uttered by a an expert that can conclude after some measurements that the house will collapse despite appearing in a good shape. In this sense, this auxiliary should not be considered a standard future tense marker. *Zullen*, we thus presume, is an epistemic necessity modal but one that we makes an extra meaning contribution on the reliability of the source of evidence, while the covert modal is an epistemec modal that 'just' signals speaker uncertainty..

Here, the Dutch examples differ from their literal English translations (*The house collapses tomorrow* vs. *The house will collapse tomorrow*). In English, *The house collapses tomorrow* suggests that the collapse is part of an inevitable progression, while *The house will collapse tomorrow* is more neutral and serves as the standard, unmarked, way to express a future tense reading. Thus, whereas the *will*-future in English is the default way to indicate futurity, the futurate requires specific speaker commitments. Dutch, in contrast, presents the mirror image of that.[7]

Hence, full speaker certainty about the settledness is indeed a necessary condition for the use of futurates in English, directly following from the assumed epistemic ordering source that applies to the covert necessity modal, part of every tensed utterance. When this certainty is absent, a futurate cannot be used. In Dutch, by contrast, this is not the case. Here, the speaker can only opt for a non-futurate to speak about the future, when the objectivity conditions for employing *zullen* are fulfilled.

At this stage, we concur that this may account for some of the observed cross-linguistic differences between English and Dutch. However, we also concur that this alone may not not provide a full explanation. To adequately account for the observed cross-linguistic variation, additional language-specific constraints may be at stake as well, for instance, aspectual morphology that could affect the usage conditions of futurates. This, however, is part of a larger question concerning the usage conditions of aspectual morphology in futurates in general (e.g., the distincion beteen

[7] As an anonymous reviewer states, this may also underlie the facts in (57); they argue that a futurate can only be used here when the events takes place at a specific (scheduled) time, not when it is only clear it will take place at some point.

simple present and progressive present futurates in English), which constitutes a study of its own. We therefore refrain from any further analyses concerning the all possible factors involved in cross-linguistic variation. The take-home message, however, is that the covert necessity modal (with a metaphysical modal base and an epistemic ordering source) in principle may capture the entire range of possible futurate readings, and that additional language-internal (morpho-pragmatic) competition may further restrict the usages of futurates in particular languages.

3.4 The role of lexical-pragmatic competition of the tenses in futurates

In previous sections, we have shown that the certainty attested in present tense futurates derives directly from the necessity modal operating within the grammatical tense. However, this does not imply that all instances of modal necessity result in speaker certainty. Even if something is metaphysically settled at the time of utterance, the speaker may not view it as epistemically settled—meaning they might not be certain about it. When the speaker lacks certainty, a present futurate is not licensed. Interestingly, a past futurate may still be licensed if the speaker was certain about the event at an earlier time. Since certainty can shift over time, a past futurate only requires epistemic settledness at the relevant time in the past, not at the time of utterance. Thus, using a past tense futurate rather than a present tense futurate signals that the event's settledness only needs to hold at an earlier time, leaving open the possibility that it is no longer settled now.

This creates a three-way distinction for past futurates, highlighting how tense interacts with epistemic certainty over time:

(i) p was settled in the past and remains settled now (canceling the implicature that circumstances have changed).

(ii) p was settled in the past but is, but now it is settled that not p.

(iii) The speaker cannot confirm or deny the current status of p; they only know that, at some point in the past, p was considered settled, not not anymore.

(61) a. The Nicks were playing tomorrow, and they still are.
b. The Nicks were playing tomorrow, but they just cancelled.
c. The Nicks were playing tomorrow, but they just announced that a few players caught Covid, I don't know if they are still playing.

That said, the most natural use for past futurates, especially when introduced out of the blue, aligns with contexts like the one in (61c). We observe that past futurates in fact require some marker of speaker uncertainty. Uttering a past futurate without any contextual indication of uncertainty sounds odd, as illustrated in examples (62a) for English and (62b) for Dutch.[8]

[8]That some kind of uncertainty marker is required in past futurates is also confirmed by more crosslinguistic data. The following examples from French show that a question or a

(62) a. We were meeting tonight, #(weren't we)?
b. Het regende morgen, #(toch?)
It rained tomorrow PRT
'It will rain tomorrow, won't it?'

These examples show that uttering a past futurate indicates that the event's future occurrence was settled in the past while also conveying the speaker's current uncertainty. This raises the question of where this uncertainty inference comes from in the default case. For instance, sentences like *We were meeting tonight* or *Het regende morgen* ('It was raining tomorrow') imply that the speaker was certain about the meeting tonight or the rain tomorrow from the perspective of a time before the utterance. However, they do not inherently communicate the speaker's current level of certainty.

In our view, this effect of present uncertainty arises from the pragmatic competition between past and present futurates. If we assume that past and present futurates compete with one another, it follows that the hearer can infer that by using a past tense futurate, the speaker believes the corresponding present tense futurate to no longer be valid. Consequently, uttering a past tense futurate conveys that the speaker is no longer certain of the corresponding present tense futurate.

One notable implementation of the competition between past and present tense is presented by Altshuler and Schwartzchild (2013). They point out that cessation inferences arise when a past tense form is used in a context where a present tense form could have been employed had the speaker chosen to use it. For example, in (63), the response in (b) comes along with a cancellable implicature suggesting that Scotty is no longer anxious.

(63) a. How is Scotty doing?
b. Scotty was anxious.

Altshuler & Schwartzchild (2013) argue that this cessation inference functions as a scalar implicature. They posit that the present tense is stronger than the past tense. Consequently, when a speaker uses a past tense form, a scalar implicature arises—based on the Gricean maxim of quantity—indicating that the speaker is not in a position to use the corresponding present tense.[9]

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modal adverbial like "normally" helps license an otherwise infelicitous past futurate:

(1) a. #Demain on mangeait ensemble.
tomorrow WE eat-IMPF together
'Tomorrow we ate together.'
b. Demain on mangeait ensemble, non?
tomorrow WE eat-IMPF together right
'Tomorrow we ate together, right?'
c. Normalement demain on mangeait ensemble.
normally tomorrow WE eat-IMPF together
'Normally tomorrow we ate together.'

[9]Some authors (ex. Musan 1997, Magri 2009, Thomas 2012) reject the idea that present

There is an important caveat here: it is not trivial to assume that asymmetric entailment relations hold between present and past futurates. For this assumption to be valid, one must also assume that plans and the reasons behind predictions can change over time. Once this understanding is in place, applying the logic of the quantity maxim to present and past tense futurates becomes straightforward: a past futurate indicates that the speaker no longer believes the corresponding present futurate to be valid. In other words, the speaker uses a past futurate only when they consider the relevant event to be unsettled. This analysis effectively explains why past futurates express speaker uncertainty, which, in turn, accounts for the pragmatic oddity of past futurates in the absence of hedges signaling some form of speaker uncertainty.

Support for this competition analysis is evident in the observation that, unlike planned events, natural dispositions are poorly suited to past futurate constructions. Take (64):

(64) #The sun rose at 6:36 tomorrow.

Given our analysis, for uttering (64), it must have been settled in the past that the sun would rise at 6:36 the next morning. However, unlike plans, for natural dispositions, once they are determined to hold, they remain determined to hold and are not expected to change. Consequently, if the past futurate (64) is true, then the corresponding present futurate (65) must also be true, leaving the speaker with no reason to choose (64) over (65). Hence, (64) is correctly predicted to be infelicitous.[10]

(65) The sun rises at 6:36 tomorrow.

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tense entails past tense. Take (i):

(i) Gregory is from America.

Musan (1997: 279) argues that "if Gregory came into existence right now, at this very moment while I utter this sentence, then *Gregory is from America* would be judged true, but *Gregory was from America* would be judged false." Musan is assuming the possibility of a first moment for the tenseless Gregory be from America. Similarly, Thomas (2012) considers the sentences below and claims that "...the present tense sentence in (ii)b is not stronger than the past tense sentence in (ii)a. Rather, the two sentences are logically independent." Thomas concludes: "If the present sentence is not stronger than the past sentence, it cannot be negated by exploiting the maxim of quantity according to Gricean reasoning" (ibid: 47-48).

(ii) a. John was a graduate student.
b. John is a graduate student.

Nevertheless, consider this contrast:

(iii) a. John was a graduate student, in fact, he still is.
b. #John is a graduate student, in fact he already was.

We take this to suggest that it is indeed the case that past tense is weaker than present – as is well known, one may follow an utterance by a stronger one, but not by a weaker one.

[10] Unless the disposition all of the suddenly radically changed, as in *Before the giant asteroid hit Earth, the sun rose at 6:36 tomorrow, but now it rises at 6:38*, which is in line with our analysis. We thank an anonymous reviewer for bringing this up.

This provides a pragmatic explanation for why past futurates are most appropriate when the speaker is uncertain about the event's settledness anymore.

4 Conclusions

In this article, we have presented an account of futurates that incorporates insights from previous accounts while effectively addressing their challenges. Our perspective offers a new understanding of futurates.

We propose that tense in futurates involves a necessity modal, taking scope below grammatical tense. This modal comes along with a metaphysically diverse modal base and an epistemic ordering source that reorders, or effectively removes, particular future possibilities from the speaker's epistemic standpoint, so that it appears epistemically settled (for the speaker) that the prejacent holds. We also distinctively emphasized the significant role of future-oriented morphology in the formation of futurates — a factor that has not been adequately considered in prior research. We propose a cross-linguistically testable hypothesis: languages that utilize other future-oriented morphology, such as future auxiliaries, impose more restrictions on the usage of futurates than languages that lack such morphology. Additionally, our account elucidates the distinction between present and past futurates vis-à-vis temporally anchored certainty.

One key theoretical implication of our approach is to reconceptualize the meaning of tense morphology as both temporal and modal, extending this understanding beyond futurates. This insight not only enriches our understanding of futurates but also opens avenues for further research into the interplay between tense, aspect, and modality across languages.

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