

YES, ENGLISH HAS A FUTURE: A CARTOGRAPHIC TENSE ANALYSIS*

Gregory Campbell Ellison (*Gregory.Ellison@unige.ch*)

1. INTRODUCTION

The long-standing traditional assumption that English expresses future tense through the auxiliary *will* has been challenged by a number of linguists for the better part of three decades. As Enç (1996) argues, because it patterns in certain constructions with other auxiliaries of an uncontested modal status, it too belongs in this category, not in the class of tense markers. So influential has this proposal been, that many linguists accept *a priori* the two-tense status of English, in which only the past and non-past feature in the paradigm.

This working paper will attempt to demonstrate that the traditional view is correct, and that a cartographic analysis allows a theoretically viable explanation for the syntactic differences between *will* and other English tenses. We are therefore not forced to abandon the intuition that the language does in fact have future tense.

Section 2 will begin with a brief description of the cartographic framework, which promotes that the structure of the clause is a highly articulated arrangement of binary functional features projecting in a fixed hierarchy. In this light, an appropriate approach to tense, incorporating substantial modifications to the Reichenbachian model will be proposed, which will set the stage for the remaining sections.

Several of Enç's arguments for treating *will* as purely modal will be considered separately in sections 3 and 4. First, it will be suggested that her analysis neglects to take into account the polysemy that underlies the various uses of the auxiliary. Though it does not always convey futurity, in certain contexts, it does so unambiguously. The cartographic approach necessitates accounting for such differences in meaning in terms of functional features. Evidence will then be offered that the *will* of future construal is in reality a fusional element encoding future tense and evidential modality. The complex compositional nature, and moreover, the presence of a speaker-oriented modal component, are factors that have complicated the investigation of this auxiliary.

Next, the futurate construction, which employs present inflection but is interpreted as locating the situation at a posterior time, will be discussed. It will be suggested that the featural difference it bears to future *will* is the absence of modality. This will be crucial in section 4, which will look at a specific instance of embedded clauses with future construal. In temporal adverbial clauses referring to future times, only present morphology is acceptable. It will be argued that the modal feature of *will* renders it ungrammatical, forcing the usage of the futurate construction.¹

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¹ A third future element of English, the periphrastic *be going to*, will not be considered in this paper. The fact that it alternately indicates prospective aspect would present a significant complication, and it would ultimately contribute little to the analysis.

2. A CARTOGRAPHIC APPROACH TO TENSE

2.1. Cartographic syntax

In recent years, syntactic research has signaled that the structure of the clause is far more articulated than was traditionally assumed. As a result, an innovative “cartographic” approach has arisen, in which it is believed that the import of a functional element and its structural position bear an association. Among others, the works of Rizzi (1997), and Belletti (2004) and Ramchand (2008), have offered important insights into the compositions of the CP- and vP-domains, respectively; and surely, the most ambitious effort to date on the IP-domain is that of Cinque (1999). He proposes the structure, shown in (1), consisting of more than thirty functional projections (FPs), associated with various refined notions of mood, tense, aspect, and voice.²

- (1) [{CP} ...
 [Mood_{SPEECH ACT} [Mood_{EVALUATIVE} [Mood_{EVIDENTIAL} [Mod_{EPISTEMIC} [T(Past)
 [T(Future) [Mood_{IRREALIS} [Mod_{ALETHIC NECESSITY} [Mod_{ALETHIC POSSIBILITY}
 [Mod_{VOLITION} [Mod_{OBLIGATION} [Mod_{ABILITY/PERMISSION} [Asp_{HABITUAL}
 [Asp_{REPETITIVE(I)} [Asp_{FREQUENTATIVE(I)} [Asp_{CELERATIVE(I)} [T(Anterior)
 [Asp_{TERMINATIVE} [Asp_{CONTINUATIVE} [Asp_{PERFECT} [Asp_{RETROSPECTIVE}
 [Asp_{PROXIMATIVE} [Asp_{DURATIVE} [Asp_{PROGRESSIVE} [Asp_{PROSPECTIVE} [Asp_{COMPLETIVEsg}
 [Asp_{COMPLETIVEpl} [Voice [Asp_{CELERATIVE(II)} [Asp_{REPETITIVE(II)} [Asp_{FREQUENTATIVE(II)}
 [Asp_{COMPLETIVE(II)}
 [... {vP}]

Two hallmarks of the hypothesis of Cinque are of particular theoretical importance. First, based on a wide range of cross-linguistic empirical data, he concludes that the hierarchy is universal and therefore an innate computational facet of the Language Faculty. He offers evidence that apparent variations and contradictions found among the world’s languages are superficial, masking this common underlying syntax. Secondly, the functional features associated with the various FPs are potentially valued in two ways, depending on the morphology available in the lexicon of a given language. While an adverb merges as the specifier of the relevant projection, an inflectional affix, auxiliary, or particle merges directly as the head. Although the way in which a feature is realized is presumably inconsequential to interpretation, it may have significant morphosyntactic ramifications, in particular but not limited to the grammatical order in which clausal elements are spelled out.

The current work accepts that the refined and highly articulated structure promoted in the cartographic framework will prove necessary to the ultimate proper understanding of the functioning of language and will therefore employ it in the analysis.

2.2. Tense in the cartographic approach

A vast majority of investigations into tense and temporality continue to assume a model based on the pivotal work of Reichenbach (1947), who posits that tenses establish a relationship between three times, the time of speech (*S*), the time of the event (*E*), and an intermediate reference time (*R*); in terms of precedence, subsequence, and coincidence. The commonly

² The current paper will use alternate labeling for the following functional projections: Mood_{EVIDENTIAL}P → EvidP; T(Past)P → PastP; T(Future)P → FutP; T(Anterior)P → AntP.

accepted version incorporates modifications to the original hypothesis proposed by Comrie (1985), Hornstein (1990), and Giorgi & Pianesi (1991), such that *S* and *E* are not associated directly with each other, but only transitively through *R*. The resulting inventory consists of the nine tenses shown in (2).³

(2)	<u>structure</u>	<u>Neo-Reichenbachian tense</u>	<u>example</u>
a.	<i>R_S</i> & <i>E_R</i>	anterior past	'he had sung'
b.	<i>R_S</i> & <i>R_E</i>	(simple) past	'he sang'
c.	<i>R_S</i> & <i>R_E</i>	posterior past	'he would sing'
d.	<i>S_R</i> & <i>E_R</i>	anterior present	'he has sung'
e.	<i>S_R</i> & <i>R_E</i>	(simple) present	'he sings'
f.	<i>S_R</i> & <i>R_E</i>	posterior present	'he will sing'
g.	<i>S_R</i> & <i>E_R</i>	anterior future	'he will have sung'
h.	<i>S_R</i> & <i>R_E</i>	(simple) future	'he will sing'
i.	<i>S_R</i> & <i>R_E</i>	posterior future	'he will be going to sing'

As the current work proposes a cartographic analysis, an even more substantial modification is necessary. A tripartite split among the past, present, and future, is not viable in a framework that assumes that functional features, being binary, have by definition two potential values. Though largely overlooked, the insightful work of Vikner (1985) offers a theoretically elegant solution, as acknowledged by Cinque. Vikner begins by pointing out two empirical flaws in Reichenbach's system. On one hand, it overgenerates: his posterior present and posterior future are not attested as valid tenses in any known language.⁴ Paradoxically, it also undergenerates: the model fails to account for the cross-linguistically common future perfect-in-past tense.

Vikner suggests that these problems can be overcome by analyzing tenses as relating four times (entailing a second reference time), where each adjacent pair is limited to indicating a disjoint relationship of *either* anteriority *or* posteriority, or otherwise a non-disjoint, coincidental relationship. Hence, for example, *S* and *R₁* (the first reference time) either coincide, or *R₁* precedes *S*, interpreted as pastness. The possibility that *R₁* is subsequent to *S* does not exist. Conversely, *R₂* (the second reference time) may follow *R₁*, interpreted as posteriority, or else be simultaneous, but it cannot precede. And finally, *E* is either anterior to or coincides with *R₂*. The resulting inventory in (3) is comprised of precisely the eight tenses that are empirically authenticated.

(3)	<u>structure</u>	<u>Viknerian tense</u>	<u>example</u>
a.	<i>S,R₁</i> & <i>R₁,R₂</i> & <i>R₂,E</i>	present	'he sings'
b.	<i>S,R₁</i> & <i>R₁,R₂</i> & <i>E,R₂</i>	present perfect	'he has sung'
c.	<i>S,R₁</i> & <i>R₁,R₂</i> & <i>R₂,E</i>	future	'he will sing'
d.	<i>S,R₁</i> & <i>R₁,R₂</i> & <i>E,R₂</i>	future perfect	'he will have sung'
e.	<i>R₁,S</i> & <i>R₁,R₂</i> & <i>R₂,E</i>	past	'he sang'
f.	<i>R₁,S</i> & <i>R₁,R₂</i> & <i>E,R₂</i>	past perfect	'he had sung'
g.	<i>R₁,S</i> & <i>R₁,R₂</i> & <i>R₂,E</i>	future-in-past	'he would sing'
h.	<i>R₁,S</i> & <i>R₁,R₂</i> & <i>E,R₂</i>	future perfect-in-past	'he would have sung'

Because it is based on a series of binary splits, Vikner's insight is easily incorporated into the cartographic framework. Each of the arrangements that he proposes to hold between adjacent

³ Reichenbach represents temporal precedence as an underscore ('_') and coincidence, as a comma (',').

⁴ The examples suggested by Reichenbach in reality reflect aspectual notions.

times should simply be associated with a distinct functional feature that projects independently in the clausal structure. The relationship between *S* and *R*₁ corresponds to the potential values of [+PAST] and [-PAST] giving rise to past and non-past interpretations, respectively. *R*₁ and *R*₂, likewise establish futurity and non-futurity through the [+FUTURE] and [-FUTURE] values; and the *R*₂ – *E* relationship is structurally represented as either [+ANTERIOR] or [-ANTERIOR].

The resulting structural representation of these features is shown in the paradigm of tense compositions in (4). The temporal arrangement that each subsequent pair establishes moves progressively (from lowest to highest) away from the time of the event toward the speaker's time. This is appropriately reflected, in terms of structural dominance, in the order in which the features project. Importantly, (4) also mirrors the relative arrangement of the tense features in (1), established by Cinque.

(4) The binary-feature tense paradigm

	<u>feature combination</u>	<u>tense</u>	<u>example</u>
a.	[[[-PAST] [-FUTURE] [-ANTERIOR]]]]	present	'he sings'
b.	[[[-PAST] [-FUTURE] [[+ANTERIOR]]]]	anterior	'he has sung'
c.	[[[-PAST] [[+FUTURE] [-ANTERIOR]]]]	future	'he will sing'
d.	[[[-PAST] [[+FUTURE] [[+ANTERIOR]]]]]	future anterior	'he will have sung'
e.	[[[+PAST] [-FUTURE] [-ANTERIOR]]]]	past	'he sang'
f.	[[[+PAST] [-FUTURE] [[+ANTERIOR]]]]]	past anterior	'he had sung'
g.	[[[+PAST] [[+FUTURE] [-ANTERIOR]]]]]	future-in-past	'he would sing'
h.	[[[+PAST] [[+FUTURE] [[+ANTERIOR]]]]]	future anterior-in-past	'he would have sung'

Before continuing, it must be acknowledged that both Reichenbach and Vikner treat English *will* as a future tense auxiliary, as reflected in the examples associated with their models above. Though the remainder of this work will attempt to verify this view, the proposals against which we argue would contest these particular examples precisely because they are based on what they consider an unfounded assumption. We may nevertheless state that regardless of the status of English *will*, the wide range of empirical data on which Cinque bases his hierarchy indicates that the feature combinations in (4) will be valid for any language that does exhibit an authentic future morpheme. It can therefore be safely assumed, in the context of this paper, that this is the legitimate cartographic representation of tense.

3. FUTURE TENSE IN ENGLISH

3.1. "Decomposing" *will*

The linguistic analysis of the English auxiliary *will* remains a highly contentious topic. The influence of Enç's (1996) proposal, that the long-standing intuitive view that *will* is a future tense morpheme should be abandoned in favor of treating it as strictly modal, has been so great that many linguists now accept *a priori* that the English system is composed of only two tenses: the past and the non-past. Her conclusion rests partly on the observation that *will* occurs in expressions that lack a sense of futurity. We see this in (5a) (Enç 347:(8)), which expresses a belief (i.e., speaker-oriented modality) concerning a situation that is understood to hold at the time of speech, and in (5b) (Enç 348:(9)), which describes a current characteristic or tendency of the subject. Indeed, in addition to these non-temporal uses of *will*, we can also identify others in which future-orientation is at best consequential to its primary modal value. In (5c), for example, the speaker expresses willingness to undertake an action, while (5d) issues a strong directive, interpretatively equivalent to an imperative.

- (5) a. Pat will be sleeping now.
 b. Sarah will sometimes play loud music to annoy her mother.
 c. I will (gladly) do the dishes.
 d. You will finish your homework ... or else!

Though these examples show that *will* does not always express future tense, they do not demonstrate that it never does. Comparing them to (6a) (Enç 348:(10)) and (6b), we note a conspicuous difference (as Enç acknowledges), in that *will* is construed primarily to relate the situation to a future time, analogous to the usage of past inflection for anteriority. It is therefore not a foregone conclusion that such uses are not genuinely temporal.

- (6) a. Jim will give Tom his keys.
 b. President Obama will discuss his healthcare initiatives tomorrow.

Importantly, this is not meant to imply that this *will* of futurity is strictly temporal, devoid of modality. In fact, just the opposite will be argued in the following sections. It suggests, however, that Enç's analysis makes the mistaken assumption, common in certain linguistic camps, that functional elements can, or even must, be reduced to a single meaning. Such a one morpheme–one meaning hypothesis has been challenged repeatedly in the literature.^{5,6}

The assumption of fine-grained semantic composition based on binary features, as is held in the cartographic approach (among others), makes the premise of morpho-semantic reduction essentially untenable. In light of the refined articulation observed in Cinque's (1999) hierarchy, it is clear that the auxiliary *will* in its assorted uses in (5) and (6) exhibits featural variation. In certain instances, this may be attributable to differences in the bundle of functional features that the auxiliary encodes, indicating genuine cases of polysemy, i.e., phonologically identical, but lexically distinct morphemes. These bundles might well share certain features, giving rise to a degree of conceptual similarity. In other cases, it may be a simple matter of the underspecification of a feature (or features) encoded by a single morpheme.

In short, it appears that by neglecting to account for the semantic variability of auxiliary *will*, and instead lumping together the distinct forms in her analysis, Enç arrives at a faulty conclusion. The next section will argue that temporal *will*, as seen in (6), is a genuine example of a future morpheme. For the sake of brevity, this *will*, construed as indicating futurity, will henceforth be referred to as *will_F*. Among the *wills* of other interpretative values seen in (5), the one conveying speaker-oriented modality, exemplified by (5a) will also be of particular importance. It will be labeled *will_{NF}*.

3.2. “Composing” *will*

One endorsement of a compositional treatment of (future-construed) *will_F* comes from Abusch (1998), who adheres to the reasoning of Enç (1996) that the auxiliary is not future tense. She proposes that there is an abstract (i.e., lexically non-existent) morpheme of prediction or expectation, which she labels *woll*. Occurring under a present tense sentential operator, this morpheme takes the form of *will*, indicating prediction at the time of speech, and thus is interpretable as future orientation; and under a past operator, it surfaces as *would*,

⁵ E.g., Bertinetto & Bianchi (2003).

⁶ Incidentally, we might further wonder why Enç does not oppose the treatment of English past inflection as a tense, given that it systematically occurs in certain non-past contexts, e.g., “*I wish I had a drink right now*”; “*If you started next week, you would finish by the end of the month*”.

expressing prediction at an anterior time which is construed as the future-in-past, for example, in embedded contexts (e.g., “*Last week, Dave said that he would return yesterday*”).

If Abusch’s past / present split is appropriate, as will be argued in subsection 3.2.3, then it begs the question of how her insights, in general, might be integrated into the syntactic cartography, or more precisely, to which functional feature or features the import of her *will* corresponds. The following subsections will propose that it represents a combination of evidential modality and future tense. But first, let us consider the implications of the hypothesis that she and Enç back, that English has a two-tense system. At least some of those who agree take this as a characteristic distinguishing the language from others, such as a majority of the Romance group, in which future orientation takes the form of a verbal inflection that occurs in certain syntactic constructions in which *will* is disallowed. This is treated as evidence of a true three-way tense system that includes a genuine future. The exact cognitive ramifications of this inference are not easy to ascertain. It hardly seems reasonable that, simply by virtue of available morphology, speakers of English are limited to a predictive, i.e., modal, view of the future while those of French and Spanish have a more concrete temporal perspective.⁷

Lyons (1977) observes that there is a significant asymmetry between the human perception of the past and of the future. While we see the past as factual and unchangeable, the future is inherently speculative and uncertain. This does not mean, of course, that we do not at times speculate on or lack knowledge altogether concerning an earlier situation; it simply means that we regard it as theoretically knowable and not subject to change. In contrast, even if we believe a future situation to be beyond doubt, like the rising of the sun tomorrow morning, it will not become fact until it lies in the past. If this could be taken to indicate that futurity and the modality associated with *will_F* are reducible to one conceptual notion – perhaps viewed from different descriptive standpoints – and therefore to correspond to a single functional feature, Abusch’s proposal would suffice. However, this does not seem to be the case. Smith (2005) asserts that futurity is cognitively more complex than pastness because it entails not only a temporal component, but also the sense of speculation. Furthermore, in an analysis of the numerous attempts to reduce *will* to either a purely modal or a purely temporal auxiliary, Sarkar (1998) concludes that it expresses both notions. Let us begin then with an attempt to demonstrate the feature values that *will_F*, as a fusional morpheme, encodes.

3.2.1. *will* as [+EVIDENTIAL]

This section will look at information that suggests that *will_F* expresses evidential modality. One might ask why the modal sense should not simply be labeled predictive or expectative, as some works have assumed (perhaps in the wake of Enç’s and Abusch’s proposals).⁸ Though Cinque identifies neither as a functional feature of the IP-domain, this alone does not preclude

⁷ According to Comrie (1985), in spite of variations in culture-specific views of the nature of time (e.g., as linear or as cyclical), human beings of all societies possess a similar awareness of pastness and futurity. Perhaps one of the most profound theoretical implications of Cinque’s proposal is that it provides viable evidence that many aspects of human cognition, including time, are built into the Language Faculty. If the hierarchy of functional projections is universal, as he argues, then it is no longer an issue of which notions a particular language expresses, but of how. A given category, encoded by a grammaticalized head, obligatory to well-formedness in one language, might be expressed through a grammatically optional adverbial in another. A proper conclusion seems to be that the functional composition of a given intention has a universal representation, and that potentially significant cross-linguistic variations turn out to be superficial reflections of language-specific morphosyntactic differences rather than genuine differences in meaning.

⁸ For a discussion of some recent semantic investigations into the modal sense of *will*, see Ziegeler (2006).

that one (or both) of them should be – he does acknowledge, after all, that fine-tuning to his analysis might ultimately prove warranted.

However, under the assumption that *will*_F encodes either of these notions, we would anticipate that their explicit expression should be redundant, or at most emphatic, making interpretatively equivalent the sentences in (7a) and (7b), in which *will*_F is construed (whether temporally or modally, as Abusch suggests) as locating the situation at a future time. What we sense, however, is greater confidence that the situation will come to fruition in the former. The speaker effectively relates that the situation holds at a future time, based on his current knowledge, presumably founded on what he considers reliable information. In the latter, however, he tempers the proposition by overtly alluding to his personal judgment. The difference is confirmed through a comparison of the two, as potential responses to a question like, “*What’s on this week’s agenda?*” While (7a) is anticipated, (7b) is odd in this context precisely because an agenda is presumed to be independent of the speaker’s speculation.

- (7) a. President Obama will discuss his healthcare initiatives tomorrow.
 b. I predict / expect that President Obama will discuss his healthcare initiatives tomorrow.
 c. I believe that President Obama will discuss his healthcare initiatives tomorrow.

While prediction and expectation unquestionably reflect the speaker’s attitude, they are semantically complex notions. At least as conventionally understood, they resemble mental states expressed by verbs like *believe* and *think*, making sentences (7b) and (7c) similar – the essential difference being perhaps that, in the former, one may sense that the speaker anticipates confirmation at a later time.⁹

Perhaps a more significant reason to reject prediction or expectation as a featural component of *will*_F is that, at times, neither notion is part of the interpretation. Regardless of our inherent uncertainty of the future, sentences like (8) can only be deemed temporal. The speaker asserts that he has knowledge of the time of the situation of the predicate (and of how it relates to speech time), and he merely reports the (relative) location of that time.

- (8) a. This milk will be out of date tomorrow.¹⁰
 b. My driver’s license will expire at the end of the month.
 c. These books will be due on Friday.

Many works categorize *will* as an epistemic auxiliary, and to my knowledge, this paper is the first to suggest that it is evidential.¹¹ This may at first seem like an odd claim. For one thing, evidential modality is more commonly associated with past situations.¹² According to standard descriptions (e.g., Palmer (2001)), it reflects the type of information on which the speaker’s proposition is based. An unmarked value ([-EVIDENTIAL]) indicates knowledge, i.e., the speaker’s presumed certainty of truth, in particular due to having witnessed the situation firsthand.¹³ The marked value ([+EVIDENTIAL]) signals that veracity is inferred, meaning that the speaker is aware of information that suggests the truth of the proposition, but that he

⁹ We disregard here potential non-stative interpretations of *predict* and *expect*.

¹⁰ Example (8a), but not the accompanying argumentation, is based on Ziegeler (2006,89:(13b)) “*They will be out of date next week.*”

¹¹ The epistemic characterization of *will* goes back at least as far as Joos (1964).

¹² As Binnick (1991) relates, for example, evidential modality is a grammaticalized category in Turkish, but only in past tense.

¹³ Note that the representations of default and marked feature values used here are in keeping with Cinque (1999).

cannot offer personal corroboration. In accordance with the earlier discussion of our perception of time, it is obvious that no future situation would fall into the former category because it is impossible for the speaker to have witnessed or even to guarantee as fact something that has not yet occurred. Therefore, this distinction would only be relevant to past situations. Still, from a technical standpoint, given that evidentiality and futurity are encoded by independent functional features (and that they represent distinct functional concepts), there is no theoretical reason to surmise that one should preclude the other. In fact, section 3.3 will argue that evidentiality is at times absent in the expression of a future situation in English.

The general classification of *will* as epistemic likely stems from early semantic works that used this as a general label for speaker-oriented modal senses, to distinguish them from deontic (or root) modality, which relates to the discourse.¹⁴ However, according to a more precise definition of this modality, as employed in Cinque's investigation, epistemicity indicates the degree of confidence that the speaker has that his proposition represents fact. Acceptance that the proposition is true corresponds to an unmarked feature value ([-EPISTEMIC]) while a marked value ([+EPISTEMIC]) indicates uncertainty. A range of epistemic notions is generally recognized, from strong belief (in English, expressed by the auxiliary *must* and adverbs like *certainly*) to qualified confidence (*should* and *probably*) to real uncertainty (*may* and *possibly*).¹⁵ Though this is not the same thing as evidentiality, the two bear certain similarities. They interrelate to the extent that the speaker's epistemic judgment will depend on a number of factors, among which is the evidence of which he is aware. Nevertheless, there are reasons to treat *will_F* as expressing evidentiality rather than epistemicity.¹⁶

The typical epistemic analysis of *will* identifies it as the strong logical counterpart of weak *may*. Enç (1996), for example, depicts them as a pair of operators: a universal quantifier (of necessity) and an existential quantifier (of possibility), respectively.¹⁷ On the surface, this might appear to account adequately for the sentences in (9) (Enç 356:(41), (42)). Assuming that *may* encodes epistemicity, the reading of (9b) that, *in the speaker's view, there is a possibility that the future situation holds*, seems appropriate. However, it is not clear that (9a) similarly conveys that, *in the speaker's view, it is (epistemically) certain that the future situation holds*, and indeed an evidential analysis seems to reflect more accurately the interpretative value of *will*: the speaker relates that *it is evident* (perhaps based on a discussion with Susan), *that the future situation holds – however, he cannot personally corroborate the factuality of the proposition* (precisely because it is not yet fact, as it lies in the future). This seems also to capture the apparent absence of the speaker's judgment in (7a) and (8): he does not express how strongly he believes that the situation will occur, but merely reports that he bases his proposition on evidence rather than fact.¹⁸

¹⁴ For example, deontic *may* grants permission, as in “*You may leave now*” while the polysemous epistemic *may* expresses possibility, as in “*She may be at home*”.

¹⁵ See Cinque (1999) for the suggestion of a more refined categorization of these notions.

¹⁶ Though Coates (1983) labels the modality of *will* as epistemic, she claims that it differs from epistemic *must* in a crucial way. Whereas the latter indicates deductive inference, the former relates inductive inference, based on evidence at the time of judgment (i.e., speech time). This is conceptually clearly similar to the current proposal.

¹⁷ This is part of her defense of treating *will* as modal rather than temporal, as discussed in section 3.1.

¹⁸ What the speaker deems to constitute acceptable evidence is somewhat variable. In (9a), it may be an earlier discussion, and in (7a), a schedule; while in any of the sentences of (8), the evidence comes from a document (milk carton, driver's license, etc.) on which the relevant date is printed. The source may alternately be something like a weather forecast, as in (ia), or a mere glimpse at the sky in (ib).

- (i) a. It will rain tomorrow.
b. It will rain in a few minutes.

- (9) a. Susan will bring her Finnish friend to the party.
 b. Susan may bring her Finnish friend to the party.

This becomes clear through a comparison of the sentences in (10), in each of which occur two elements that are alleged to express epistemicity in the traditional view: one of uncertainty (*may* in (a) and *possibly* in (b)), and the other of strong belief (*certainly* and *will*, respectively). The very fact that they co-occur suggests that epistemic modality cannot be exclusively at stake, as it would present a contradiction in which the speaker judges the situation to be both (epistemically) certain and merely possible. Indeed, the adverb in (10a) appears to play the role of modifying the auxiliary, emphasizing for example that the speaker considers the possibility of the situation genuine. We might imagine this as the response to an earlier assertion in discourse to the contrary (e.g., A: “*I understand that no one plans to bring a date to the party.*” B: “*That’s not true. Susan certainly may bring her Finnish friend.*”). The general sense of the sentence, however, remains largely the same as (9b) – an expression of epistemic possibility.

- (10) a. Susan certainly may bring her Finnish friend to the party.¹⁹
 b. Susan (possibly) will (possibly) bring her Finnish friend to the party.

A similar analysis of (10b), in which the speaker either de-emphasizes his certainty or expresses that it is possible that he is certain of the situation, does not correspond to our understanding. Whereas *certainly* in (10a) does not greatly alter the sense of the sentence, *possibly* in (10b) changes the meaning of (9a) substantially. The speaker considers the situation uncertain, a paraphrase in fact of (9b), and mirroring the past tense analogue, “*Susan possibly brought her Finnish friend to the party*”. In other words, the legitimate epistemic element in the sentence is the adverb, not the auxiliary. While this causes problems for an epistemic analysis of *will*, under an evidential treatment, no conflict arises. The sentence means essentially that, *the evidence is such that the speaker deems it possible that the future situation holds*.

Finally, in certain constructions, *will* does not pattern with epistemic auxiliaries.²⁰ The very fact that the speaker expresses a degree of confidence through an epistemic element explicitly conveys that he recognizes that the proposition may in fact not be true. Presumably for this reason, it may be canceled, as seen in the sentences of (11). A past tense assertion, like (12a), is ungrammatical in this context because the speaker effectively represents contradictory propositions as fact. If *will* were epistemic, we would anticipate that canceling the proposition would be possible, which, as (12b) shows, is not the case. On the other hand, an evidential treatment of *will* naturally accounts for this exclusion: if the evidence suggests that the proposition is true, then it cannot also suggest it to be false. Needless to say, the speaker may not be confident of the truth of either of the propositions in (12), in which case he may express a degree of epistemic confidence. Unsurprisingly, the propositions then become cancelable, as seen in (13). In essence, (13b) is interpreted to mean that *the evidence is such that the speaker considers the situation probable, but it is not sufficient to preclude the possibility that it is not true*.

- (11) a. Mark may leave tomorrow, but he may not leave after all.
 b. Mark must be leaving tomorrow, but he may not be leaving after all.

¹⁹ The alternate deontic reading of this sentence, meaning, “*Susan is certainly permitted to bring her Finnish friend to the party*” is not of interest here.

²⁰ Though the issue under consideration is different, this argument is inspired by Sarkar’s (1998) attempt to demonstrate the temporal nature of *will*.

- (12) a. * Mark left yesterday, but he didn't leave after all.
 b. * Mark will leave tomorrow, but he won't leave after all.
- (13) a. Mark probably left yesterday, but he possibly didn't leave after all.
 b. Mark will probably leave tomorrow, but he possibly won't leave after all.

Hence, the data appear to support the claim that *will_F* encodes the speaker-oriented modal notion of evidentiality.

3.2.2. *will* as [+FUTURE]

Whether the reader is convinced that *will* expresses evidentiality, or maintains the accepted view that it is epistemic, or perhaps even insists on Abusch's view of prediction or expectation, one thing is sure: none of these in itself can account for future construal. The reason is simple: the situation under consideration may be at any time relative to the utterance. This seems to be uncontroversial, and easily demonstrated. A speaker might have evidence of the present or past situation in (14a) and (14b), respectively, but be unable to corroborate its validity, and his intention may be articulated using an evidential expression, as in (15).²¹

- (14) a. Rose is studying linguistics now.
 b. Rose studied linguistics yesterday.
- (15) a. It is evident that Rose is studying linguistics now.
 a.' Rose is evidently studying linguistics now.
 b. It is evident that Rose studied linguistics yesterday.
 b.' Rose evidently studied linguistics yesterday.

In addition to these options, the speaker may also use (non-future) *will_{NF}* to express the modal sense, as shown in (16). Assuming an evidential analysis of the auxiliary, these sentences mean roughly that *it is evident (but not personally corroborated) that the situation holds now* (for a.) / *yesterday* (for b.).

- (16) a. Rose will be studying linguistics now.
 b. Rose will have studied linguistics yesterday.

Of course, the use of *will_{NF}* with no sense of posteriority was mentioned in the previous section, in relation to Eng's analysis; therefore, these sentences are not surprising. But they could be argued to be proof that *will* (whether construed as future or non-future) simply encodes evidential modality, and not futurity. One might, for example, claim that it is the temporal adverbial in earlier examples, like (8a), repeated as (17), that gives rise to the future

²¹ The same analysis applies to epistemic modality and prediction / expectation, as shown in (i) and (ii). The only true sense of futurity associated with prediction / expectation is that, if the speaker ultimately learns of the veracity of the proposition, it will perforce occur at a time later than his utterance.

- (i) a. I feel certain that Rose is studying linguistics now.
 a.' Rose is certainly studying linguistics now.
 b. I feel certain that Rose studied linguistics yesterday.
 b.' Rose certainly studied linguistics yesterday.
- (ii) a. I predict / expect that Rose is studying linguistics now.
 b. I predict / expect that Rose studied linguistics yesterday.

construal, not the auxiliary. However, we have already seen examples that disprove this. The situation of (18) (=9a), for instance, is construed unambiguously as holding at a time after the utterance, though it lacks temporal reference.

(17) This milk will be out of date tomorrow.

(18) Susan will bring her Finnish friend to the party.

In fact, earlier examples offer substantiation that *will_F* does encode futurity. Recall that the sentences (15a/a') and (16a) express essentially the same thing: that the speaker has evidence that the situation of (14a) currently holds, though he cannot personally corroborate that it is fact. When the modal sense is related via an embedding clause or an adverbial (in (15a/a')), present inflection on the verb of proposition is grammatical. This is not unexpected, since the conjectured situation does in fact hold at the time of speech.

When the situation holds at a future time, as in (9a), repeated as (19a), a similar construction is generally not possible.²² As a comparison of (19b and c) to (19d and e) demonstrates, even if another element makes the sense of modality explicit, present inflection is ungrammatical. Furthermore, a disambiguating future adverbial does not render an improvement, as seen in the corresponding examples in (20). If *will_F* were purely modal, following the hypothesis that English has a two-tense past/non-past system, we would not expect a difference of this sort.

(19) a. Susan will bring her Finnish friend to the party.
 b. *^(#) It is evident that Susan brings her Finnish friend to the party.
 c. *^(#) Susan evidently brings her Finnish friend to the party.
 d. It is evident that Susan will bring her Finnish friend to the party.
 e. Susan will evidently bring her Finnish friend to the party.

(20) a. The Saints will win the Super Bowl tomorrow.
 b. * It is evident that the Saints win the Super Bowl tomorrow.
 c. * The Saints evidently win the Super Bowl tomorrow.
 d. It is evident that the Saints will win the Super Bowl tomorrow.
 e. The Saints will evidently win the Super Bowl tomorrow.

The only way to account for this observation is to recognize that *will* in (19a) and (20a) renders futurity 'visible', or more precisely, that it encodes a future feature that is absent from (16a). We can therefore conclude that *will_F* has as functional components both of the features [+EVIDENTIAL] and [+FUTURE], which appear to correspond to the meaning of Abusch's (1998) abstract morpheme *woll*.

3.2.3. *will* as [-PAST]

To complete the compositional analysis of *will_F*, let us return to the proposal of Abusch (1998) that was discussed earlier. Recall her claim that this auxiliary results from the application of a present tense operator to her morpheme *woll*, giving rise to an interpretation of prediction at the time of speech. Under a past operator, the same morpheme surfaces as the

²² There are exceptions in which present inflection with future construal is grammatical. See section 3.3 for discussion.

auxiliary *would*, for a prediction at a past time. Let us now consider how her insight might be incorporated into the current analysis.

The status of English as a tensed language (in contrast to reputedly tenseless languages like Chinese, which lack (overt) tense inflectional elements) is undisputed. The issue in contention is whether it has a legitimate future tense, as the current paper is attempting to demonstrate, or is restricted to two tenses, as is argued by Abusch, Enç (1996), and others. It must be acknowledged that the opposition between the past and non-past tenses in English is in some way more basic. This is reflected for instance in the standard assumption that all finite clauses require inflection (at times, covert) associated with either past or present tense (be it realized on the main verb or an auxiliary). This includes clauses with (traditionally labeled) ‘modal’ auxiliaries, like *will*, (which only occur in finite constructions), that are generally considered to take either a past or non-past morphological form. (In fact, for the most part they are found in tense-marked pairs, like *may : might*, *shall : should*, etc.). The conclusion that English is a two-tense language arguably mistakes this prevalent division to define the tense system in its entirety.

Under the Reichenbachian assumption that a single split accounts for the divergence among the present, past, and future, such a claim would be incomprehensible; however, in line with the tense analysis of the current paper, following the cartographic analysis of Cinque (1999), it is logical. Recall from section 2.2, that pastness and futurity (along with anteriority) correspond to distinct functional features which, in various combinations of marked (+) and unmarked (–) values, render the set of possible tenses. The past feature, which projects highest in the clause, in essence establishes how lower tense features are evaluated. So, while a [-FUTURE] value under [-PAST] constitutes two distinct indications of temporal non-disjunction, and is therefore interpreted as coincidence with speech time (or more precisely, as the conceptual present); under a [+PAST] feature, it indicates coincidence with a time that precedes the utterance, i.e., simply past tense. Likewise, [+FUTURE] in conjunction with [+PAST] gives rise to the future-in-past, i.e., posteriority to a time preceding the moment of speech; and simple future tense is the combination of [-PAST] and [+FUTURE] feature values, indicating a time following the utterance.

In this light, we can rethink the traditional idea that tensed languages grammaticalize the general category of tense (i.e., T), and imagine instead that in a language like English, it is the particular category of past tense that has a grammaticalized status. This would explain the apparently more fundamental split between the past and non-past tenses. Succinctly, this means that finiteness in English forces the encoding (potentially morphologically covert) of a value of the [\pm PAST] feature, while the expression of the value of the [\pm FUTURE] feature is optional to grammaticality. If this is on the right track, then, given that English modal auxiliaries are finite forms, we have reason to believe that *will_F* encodes a value of the [PAST] feature.

In a significant way, part of Abusch’s proposal is amenable to the cartographic approach. The two values of the [\pm PAST] feature, in combination with the [+FUTURE] and [+EVIDENTIAL] features, seem to be interpretatively equivalent to the application of the present and past tense operators that, in her hypothesis, apply to the morpheme *woll* to render *will* and *would*. In other words, though she accounts for future construal purely through a modal-like element, she effectively posits the same binary opposition of past and non-past.

However, there is an important difference in the arrangement of the respective components. Abusch sees the tense operator as structurally dominant, therefore taking wide scope over *woll*. In the current proposal, adhering to Cinque’s hierarchy, the corresponding Past projection falls in the scope of the modal feature, in the case of *will_F*, corresponding to an ordering like [[+EVIDENTIAL] [-PAST] [+FUTURE]] (or evidentiality > non-pastness > futurity).

This configuration seems appropriate as it follows from a well-established characteristic of speaker-oriented modality, that it reflects the speaker's mentality at the time of his utterance, not at the time of the situation of the predicate.²³ It is witnessed by the modalized versions (15b' and b) (repeated as (21b) and (21c), respectively) of the past situation (14b) (repeated as (21a)). The way (21b) is interpreted is that *at the time of his statement*, the speaker possesses evidence that the earlier situation is true.²⁴ Consequently, when the sentence is paraphrased, using an 'embedding' clause, as in (21c), it necessarily employs present tense morphology to reflect the time of evaluation. The past tense alternative in which the evidence is understood to coincide with the situation itself is not suitable: #*"It was evident yesterday that Rose was studying linguistics (at that time)"*.²⁵ According to the hypothesis of Cinque, the adverb in (21b) merges as the specifier of the functional projection of evidential modality, EvidP, meaning that the appropriate partial syntactic representation of this sentence would look like (22).²⁶

- (21) a. Rose studied linguistics yesterday.
 b. Rose evidently studied linguistics yesterday.
 c. It is evident that Rose studied linguistics yesterday.
- (22) Rose ... [EvidP evidently [Evid [+EVIDENTIAL]] [... [PastP [Past [+PAST] <-ed>]] [... studied linguistics ...

What is perhaps more revealing is the remaining paraphrase (16b) (repeated as (23a)), in which (non-future-construed) *will*_{NF} conveys evidential modality. In Cinque's proposal, a functional feature may be valued on one hand by an adverb in a Spec-head configuration (as in (21b/22)), or alternately by the direct merge of a functional head, i.e., an inflectional affix, an auxiliary, or a particle. If *will*_{NF} were a simple (single-feature) evidential head (an exact head version of the adverb *evidently*), (23b) would logically be the appropriate structure of this sentence. This would be read however as the ungrammatical expression, **"Rose will studied linguistics yesterday"*. The well formed sentence, (23a), requires the conspicuous insertion of auxiliary *have*.

- (23) a. Rose will have studied linguistics yesterday.
 b. * Rose ... [EvidP [Evid [+EVIDENTIAL] will]] [... [PastP [Past [+PAST] <-ed>]] [... studied linguistics ...

To explain this, we may turn to the work of Hoffmann (1976). He observes that in certain English constructions, including clauses that are non-finite and those with particular modal auxiliaries, indication that the situation of the predicate holds prior to the utterance requires what he labels 'Past Tense Replacement', in which *have* plays the role of past tense. In Ellison (2007), I argue that in these constructions, inflection on the lower verb is not possible

²³ This has been discussed in numerous places in the literature. See, for example, Palmer (2001).

²⁴ Note that this characteristic sets adverbs of speaker-oriented modality apart. Other classes are interpreted as falling within the semantic scope of tense. For example, in *"Rose almost / briefly / diligently studied linguistics yesterday"*, we understand the quality of the adverb to pertain to the past time of the situation, not to the speaker's time. This distinction is captured elegantly by Cinque's functional hierarchy: features of speaker-oriented modalities uniquely project higher in the clause than tense features, so only they logically do not fall in the semantic scope of the temporal indication of the predicate situation.

²⁵ For the reader who maintains the hypothesis that *will* should be treated as encoding either epistemic modality or prediction / expectation, a similar analysis using the expressions (ib and b') and (ii b) of footnote 21, respectively, will yield the same conclusion: they reflect the mentality at the time of the utterance.

²⁶ Recall that EvidP = Cinque's Mood_{evidential}P; PastP = T(Past)P; FutP = T(Future)P; and AntP = T(Anterior)P.

because PastP is unavailable. In the case of clauses with modal auxiliaries, this is because the auxiliary itself values the feature.²⁷ *Have* serves as a kind of last resort marker of precedence, indicating pastness through Anterior tense, i.e., encoding a [+ANTERIOR] feature value.²⁸

That *will*_{NF} should be analyzed as [-PAST] seems to follow naturally from the fact that the modality that it encodes represents the speaker's mental state when he speaks, comparable to the modal expressions seen in the non-future sentences of (21). Because the auxiliary encoding the feature is interpreted as present time, it has the suitable corresponding present-time (i.e., non-past) value. If this is on the right track, then the structure of (23a) is straightforward and theoretically uncomplicated, shown in (24).

- (24) Rose ... [EvidP [Evid [+EVIDENTIAL] will] [... [PastP [Past [-PAST] <will>] [...
[AntP [Ant [+ANT] have] [... studied linguistics ...

An analysis of (future-construed) *will*_F along the same lines requires only the minor adjustment of including the additional feature of futurity. As an auxiliary encoding modality, we naturally anticipate that it also values the feature of the Past projection, and indeed, as (25a and b) demonstrate, pastness of the situation in relation to the time associated with future tense (here, *tomorrow* from the perspective of *in two days*) forces the insertion of anterior auxiliary *have*; past inflection on the lower verb form is illicit.²⁹

- (25) (I have a meeting with the foreman in two days.)
a. In accordance with the contract, he will have finished the work tomorrow.³⁰
b. * In accordance with the contract, he will finished the work tomorrow.

If we take into account evidential paraphrases relating to a future situation, comparable to those of (21) as related to (non-future) *will*_{NF} in (23a), it is clear that the value of the past feature encoded by *will*_F is similarly [-PAST]. The adverb in (26b) relates that the speaker currently possesses evidence concerning the future situation, which is appropriately expressed through present inflection in the embedding clause of (26c). (Cf. #“*It will be evident tomorrow that Rose is / will be studying linguistics (at that time)*”, in which the future clause yields an unsuitable paraphrase.) Hence, the relevant structure of (26a), shown in (27), naturally follows, demonstrating the full IP-domain composition of *will*_F as [+EVIDENTIAL] × [-PAST] × [+FUTURE].

²⁷ Note that this reflects the standard assumption discussed earlier that English modal auxiliaries are marked as past or non-past.

²⁸ *Have* in these constructions is unambiguously (anterior) tense, rather than perfect aspect. The latter distinctively excludes past frame adverbials, e.g., *“*Rose has studied linguistics yesterday*”.

²⁹ It may seem trivial that *have* occurs in (25a), since the tense of the clause is future anterior, which is acknowledged to consist of *will* + *have*. However, it is not so simple. Only a hypothesis that treats *will*_F as temporal, occupying the higher tense head, would allow such an assumption – and such a hypothesis would furthermore have to recognize that this renders the higher tense head unavailable for past inflection, forcing Past Tense Replacement.

³⁰ The structural representation of (25a) is shown in (i).

- (i) he ... [EvidP [Evid [+EVIDENTIAL] will] [... [PastP [Past [-PAST] <will>] [... [FutP [Fut [+FUTURE] <will>]
[... [AntP [Ant [+ANT] have] [... finished ...

- (26) a. Rose will study linguistics tomorrow.
 b. Rose will evidently study linguistics tomorrow.³¹
 c. It is evident that Rose will study linguistics tomorrow.
- (27) a. Rose ... [EvidP [Evid [+EVIDENTIAL] Will] [... [PastP [Past [-PAST] <will>]
 [...[FutP [Fut [+FUTURE] <will>] [... study linguistics ...

To complete the analysis, let us turn to *would*, Abusch's past form of *will*.³² If her insight is correct, and the past – present (i.e., non-past) opposition is the only aspect distinguishing this auxiliary from *will*, then the natural conclusion is that *would* encodes the combination of [+EVIDENTIAL] × [+PAST] × [+FUTURE] features in the arrangement shown by the partial structure (28b) for the complex expression (28a).

- (28) a. Two days ago, Daisy said that Rose would study linguistics yesterday.
 b. Daisy ... [PastP [Past [+PAST] <-ed>] [... said ... [CP ... that ...
 [Rose ... [EvidP [Evid [+EVIDENTIAL] would] [... [PastP [Past [+PAST] <would>]
 [...[FutP [Fut [+FUTURE] <would>] [... study linguistics ...

The two final features seem uncontroversial, at least under a hypothesis that treats this auxiliary as temporal (i.e., not strictly modal). The traditional view (shared as well by Reichenbach) is that *would* in (28a) expresses the future-in-past. At the time of Daisy's statement, two days prior to the time of the utterance, the embedded situation lies in the relative future, here yesterday. The status of *would* as encoding evidentiality (or epistemicity, according to other prominent hypotheses), however, is less obvious.

One indication that this might indeed be the case can be garnered from the import of (28a). If *would* is evidential, this sentence might appear to violate the premise above that speaker-oriented modality always reflects the mental state at the time of utterance (which incidentally would seem to preclude the combination of pastness and evidentiality altogether). However, the speaker in this instance is not expressing his own assessment of the embedded situation; he is rather reporting the judgment of the matrix subject, at the past time of her statement. In fact, this is made explicit by a direct quote paraphrase, like (29).³³

³¹ As pointed out by C. Laenzlinger (p.c.), in accordance with the present proposal, it would be incorrectly predicted that the double encoding of the [+EVIDENTIAL] feature (adverb *evidently* as a specifier and auxiliary *will* as a head) in (26b) would give rise to ungrammaticality. One way the acceptability of this sentence might be explained is that neither of these elements is mono-featural. While *will_F* also encodes the [+FUTURE] and [-PAST] features, *evidently* arguably encodes some type of additional focus feature, emphasizing the role of the speaker's judgment. This seems to be supported by the stressed intonation this adverb receives in the most natural pronunciation of the sentence.

³² The auxiliary *would* perhaps exhibits an even greater degree of polysemy than *will*. In (ia), it expresses speaker-oriented modality; in (ib), a polite request; in (ic), a sort of hypothetical volition; and in (id), conditionality. They should not be treated as featurally identical. The current analysis is restricted to the *would* of future-in-past tense.

- (i) a. Mark would be at home now.
 b. Would you hand me that red bag?
 c. Who would do such a thing?
 d. If Sandy came to the party tomorrow, Mandy would come too.

³³ At least notionally, other (non-verbal) intensional matrix verbs show a similar pattern, e.g., "*Two days ago, Daisy thought that Rose would study linguistics yesterday*" ~ "*Two days ago, Daisy thought, 'Rose will study linguistics tomorrow'*".

- (29) Two days ago, Daisy said, “Rose will study linguistics tomorrow”.

According to standard assumptions, such a construction involves a sort of deictic shift in which the temporal location of the matrix is interpreted as the speech time of the complement clause. Here, for example, it is understood that the future orientation of the quote is evaluated relative to the time of Daisy’s statement (rather than to the speaker’s ‘now’), i.e., that the studying situation is proposed to hold *tomorrow* with respect to *two days ago*, referring to the day that the speaker views as *yesterday*. In essence, the listener adopts the perspective of the matrix time, and notionally treats it as the time of speech. The modal import of *will_F* also undergoes this shift; hence, we understand that at Daisy’s ‘now’ of two days ago, she expresses that *it is evident that the situation of Rose studying linguistics tomorrow holds*.

The indirect quote of (28a) differs primarily in that it does not entail the same shift in deixis, but instead maintains the temporal perspective of the speaker. The deictic temporal adverbials are evaluated with respect to the speaker’s time rather than the time of the matrix clause, so that Daisy’s *tomorrow* must be referred to as the speaker’s *yesterday* (or as the anaphoric *next day*). In a sentence like, “*Two days ago, Daisy said that Rose would study linguistics tomorrow*”, the proposed studying occurs not on the day after Daisy’s statement, but on the day after the utterance.

The choice of the auxiliary in (28a) also owes to the difference in perspective. In accordance with the Sequence-of-Tense rules of English, the indication that a complement clause (except for direct quotations) is simultaneous with a past matrix requires past tense inflection. As (30b) demonstrates, present morphology is ungrammatical in the paraphrase of (30a). I would suggest that this phenomenon concerns inflection encoding [+PAST], which in the case of (28a), results in the form *would*. Hence, the expression of pastness simply places the perspective from which the future situation is viewed at the earlier time of Daisy’s statement.

- (30) a. Two days ago, Daisy said “Rose is studying linguistics now”.
 b. Two days ago, Daisy said that Rose was / *is studying linguistics at that time.

Finally, the modality encoded by the embedded auxiliary is also arguably preserved. Assuming the evidential analysis of *will_F*, the listener naturally interprets (28a) to mean that *at the time of her statement two days ago, it was evident to Daisy that the situation of Rose studying linguistics the following day holds*.

The suggestion that *would* in (28a) expresses evidential modality possessed of the matrix subject at the past time of her statement is supported by the following observation. Sentence (31a) is ungrammatical because it reports that Daisy made the conflicting claim that to her it was evident that Rose’s studying the next day both holds and does not hold. A direct quote would take the form: **“Two days ago, Daisy said, ‘Rose will study linguistics tomorrow, but she won’t study linguistics after all’”*; (cf. (12a)). In contrast, grammatical (31b) would be restated as: *“Two days ago, Daisy said, ‘Rose will study linguistics tomorrow’, but she didn’t study linguistics after all”*. The evidence attributed to Daisy concerns only the positive assertion, the speaker taking responsibility for the contradiction, presumably based on knowledge of the events that actually transpired.³⁴

³⁴ In general, but with certain systematic exceptions, speaker-oriented modality embedded in intensional contexts reflects the perspective of the matrix subject. It is understood that the epistemic judgment (*probably*) in (i) is attributed to Ruby, not to the speaker. As in (31), because it expresses a contradictory assertion on the part of the matrix subject, (iia) is ungrammatical. On the other hand, (iib) is well formed since it is the speaker who makes the contradiction.

- (31) a. * Two days ago, Daisy said that Rose would study linguistics the next day, but that she wouldn't study linguistics after all.
 b. Two days ago, Daisy said that Rose would study linguistics the next day, but she didn't study linguistics after all.

There is another large class of future-in-past clauses in which an evidential analysis of *would* does not work. These are complements of factive verbs, which are not interpreted as representing the mental state of the matrix subject at the past time. In (32), the verb *forget* explicitly reveals that Daisy had no awareness of the future situation at the time under consideration. It cannot be then that *would* reports earlier evidence on her part, and ungrammaticality is correctly predicted of the corresponding direct quotative construction, **“Two days ago, Daisy forgot, ‘Rose will study linguistics tomorrow’ ”*.

- (32) Two days ago, Daisy forgot that Rose would study linguistics yesterday.

Furthermore, unlike (31b), the speaker cannot contradict the validity of the embedded clause, as shown in (33). Its truth is for him a presupposition, accepted as fact at the time of the utterance. Logically, this seems to indicate that *would* in these instances has a strictly temporal, i.e., non-modal, function. It furthermore contradicts Abusch's hypothesis that *would* indicates prediction in the past, as these sentences are entirely void of such a notion.

- (33) * Two days ago, Daisy forgot that Rose would study linguistics yesterday, but Rose didn't study linguistics after all.

If this analysis is on the right track, it points to a difference between *will_F* and the future-in-past *would* more profound than the value of the [PAST] feature value. While the former consistently entails a sense of evidential modality, the latter does not. The next section will step back for a closer look at evidentiality as a necessary component for the grammatical usage of *will_F*. For the moment, however, we may surmise that this auxiliary is a featurally complex, fusional morpheme. Along with its polysemous nature discussed in section 3.1, this compositional complexity is likely a significant reason why the analysis of *will* has proven difficult and often controversial. Its syntactic behavior is superficially less consistent than that of a single-feature particle would be. Nevertheless, we may conclude that there is reason to believe that *will_F* is indeed a tense marker and, consequently, that English does have a future tense.

3.3. The futurate

Section 3.2 began with the assumption that (future-construed) *will_F* encodes speaker-oriented modality, based on the proposal of Abusch (1998), and set off on an immediate attempt to demonstrate the relevant modal sense to be evidentiality. It then ended by surmising that Abusch's hypothesis does not accommodate the fact that the *would* of future-in-past tense does not consistently entail modality (or in her terms, prediction / expectation). A logical question would therefore be whether the initial assumption was appropriate after all. Would it

-
- (i) Ruby said that Pearl was probably at home.
 (ii) a. * Ruby said that Pearl was probably at home but that she wasn't at home after all.
 b. Ruby said that Pearl was probably at home, but she wasn't at home after all.

be possible to treat *will_F* as purely temporal, in accordance with the traditional view, avoiding the conjecture that a modal component is at stake as well?

This section will look at an alternate means through which future-orientation is indicated in English, the futurate. It is proposed that what distinguishes it from *will_F* is the absence of a modal feature, and section 4 will suggest a significant ramification of this difference. In the simplest terms, the futurate refers to a verb form that bears simple present tense inflection, but is interpreted as holding after the time of speech, as demonstrated by (34).³⁵ An important property of the English futurate, regularly discussed in the literature, is that it is subject to two restrictions. First, the future time at which the situation holds must be unambiguous, typically expressed by an adverbial, like ‘tomorrow’ in this example. The lack of a clear temporal location, as in (35a), renders the futurate unacceptable. Secondly, the situation described must be conceived of as scheduled or otherwise predetermined. Sentence (35b) is odd by normal conversational standards, precisely because the event of winning a marathon is assumed to be subject to factors beyond human control and can therefore not be planned. In contrast, the analogous expression (36b) is well formed with *will_F*, which in fact may consistently replace the futurate in matrix clauses with grammatical results, as in the case of (36a).³⁶

(34) Barry leaves for London tomorrow.

(35) a. # Barry leaves for London.
b. # Paul wins the marathon tomorrow.

(36) a. Barry will leave for London tomorrow.
b. Paul will win the marathon tomorrow.

Perhaps because the futurate appears to be structurally unexceptional, current investigations tend to treat it as an issue of pragmatics, and to my knowledge, no previous attempt has been made to explain it in morphosyntactic terms. Declerck (1991) analyzes the futurate as reflecting the desire to represent the proposition as factual. By using present inflection, the speaker essentially minimizes the sense of prediction or speculation inherently associated with the future. (See section 3.2.) Expanding on this (and other ideas of Declerck), Beheydt

³⁵ In an alternate English construction, the present progressive form is used to indicate a situation holding at a future time, as illustrated by (i), sometimes referred to as the ‘furate progressive’. There are differences between its usage and interpretation, and those of the futurate proper, which suggest that it conveys (at least at times) prospective aspect. For this reason, it will not be considered in the current paper.

(i) Barry is leaving for London tomorrow.

³⁶ As pointed out by the two reviewers of this article, both the futurate and the future morpheme (inflectional suffix or auxiliary) pattern in markedly different ways in closely related languages from those of English. In spoken German, the non-past verb form (i.e., futurate) serves consistently to convey future orientation while, *werden*, the conceptual equivalent of English *will_F*, forces a greater modal impact (Binnick 1991). Furthermore, even in Romance languages like Spanish and French, the futurate is less restricted than in English in spite of future tense morphemes that are used robustly. On the other hand, in French, these future forms are used in certain temporal adverbial clauses in which *will_F* is strictly ungrammatical in English (see section 4).

For reasons of space, the current paper concentrates on English, acknowledging that a great deal of additional insight will unquestionably be garnered through future cross-linguistic analyses of forms conveying futurity. For the moment, I suggest simply that the relevant morphologies in the various languages exhibit feature-compositional distinctions that result in differences in the constructions in which they grammatically occur. Hence, the proposal of section 3, that *will_F* encodes [-PAST], [+FUTURE], and [+EVIDENTIAL] features, is not meant to imply that the same combination necessarily constitutes the future forms of other languages.

(2005) suggests that the speaker pragmatically shifts his perspective, in effect placing himself at the future time, which serves as a sort of proxy moment of speech. Factuality is asserted because the proposition is conceived of as being ‘observed’, at least in the mind’s eye.

Beheydt’s proposal is arguably tantamount to a shift in deixis, as was discussed in section 3.2.3 in connection to direct quotations. The speaker figuratively moves himself to a future time and describes the situation that he witnesses. Consequently, one might anticipate that elements dependent on the deictic center should be evaluated with respect to the shifted perspective, rather than the speaker’s actual ‘now’. *Tomorrow* in (34), for example, would be taken to refer to the day after the proposed situation, i.e., the time of Barry’s scheduled departure. In reality, such temporal adverbs locate the situation itself, relative to the time of the utterance.

Let us assume, for the sake of argument, that such elements somehow fall outside of the pragmatic shift in perspective, perhaps as parenthetical material (which would be surprising, given that they are obligatory). One would still surmise that, as the shift that Beheydt suggests is pragmatic, it would have no syntactic ramification. Since the speaker represents himself as being located at an imaginary future ‘now’, observing a situation that is underway, we naturally expect that his utterance will take the appropriate present tense form. As the ungrammaticality of (37) reflects, however, English does not allow the expression of an eventive (i.e., episodic) situation that holds at speech time through simple present tense morphology, instead, requiring progressive aspect (e.g., “*Barry is leaving for London now*”). Consequently, under Beheydt’s proposal, the well-formedness of (34) is unexpected.

(37) * Barry leaves for London (now / at this moment).

In fact, the futurate patterns with other English tenses, which are grammatical in simple (non-progressive) forms (e.g., “*Barry left for London yesterday*”; “*Barry will leave for London tomorrow*”), leading to the conclusion that it does not simply represent a pragmatic shift, but instead is structurally distinct from the present construction. Based purely on its import, we would logically suspect the presence of a marked future feature ([+FUTURE]) to be at stake. Under standard assumptions, however, in order to be interpreted, this value would need to be made explicit (as when encoded by *will_F*, for example). Present tense morphology fails to do so. It is suggested here that the temporal adverbial in some way renders the future feature visible to interpretation, and that it is precisely for this reason that it is obligatory for grammaticality.³⁷ A sentence like (35a) is therefore infelicitous precisely because it lacks a clear element of futurity.

If this is correct, then the ensuing question is how the futurate construction differs from the future with *will_F*. According to the reasoning of Declerck, it is a matter of pragmatics – a device through which the speaker represents his proposition as factual. But this seems to imply that it constitutes a means of persuasion. If this were the case, it is not clear why the construction should be limited to scheduled and predetermined situations. One imagines that the speaker might similarly wish to convince the listener of his speculation, as in the scenario of the unacceptable (35b) – perhaps more so than of a situation that he already believes to be established.

The previous section argued that, in addition to temporal features ([-PAST] and [+FUTURE]), *will_F* encodes evidentiality. It seems logical to conjecture that this modal feature is the component that the futurate does not entail. Admittedly, this seems at odds with the discussion of section 3.2.1, asserting that the assessment of a future situation can never be

³⁷ In the cartographic framework, this suggests that the temporal adverbial merges as the specifier of FutP, with subsequent movements accounting for its clause-peripheral position at Spell-out. The issue will not be pursued here.

based on the certainty of truth associated, for example, with firsthand testimony, simply because a situation is not factual until it lies in the past. Consequently, we can at best relate that the evidence suggests the truth of the proposition.

In reality, the obligation to make explicit that one is not a direct witness is quite weak, at least in a language like English in which evidential modality is not a grammaticalized category (cf. Turkish³⁸). Consider the sentences in (38). While all who observed the event in (a) have long passed, the notion that a person might personally corroborate the occurrence of (b) constitutes a logical impossibility. Nevertheless, it is customary to report such past situations without alluding to the fact that the knowledge is based on reported information. An adverb like *evidently* or *apparently* might well be taken as uncertainty or skepticism.

- (38) a. Abraham Lincoln was assassinated at the Ford Theater in 1865.
 b. My mother was born in South Carolina.

In a sense, the expression of speaker-oriented modality – imparting a judgment, opinion, or other evaluation – is a type of participation in the utterance. The speaker tempers or limits the responsibility that he assumes for the truth of the proposition. Even so, the absence of such an element is not necessarily intended as an asserted guarantee. It might well signify simply that the speaker accepts the validity of the situation and therefore deems it unnecessary to state otherwise. This is arguably how either sentence in (38) is understood: the speaker's information comes from a source whose reliability he does not question, so he is not compelled to make any allusion to his own assessment.

The factual status of the situation of (38a or b) has already been determined and cannot be changed. Whether or not it is accurate, the speaker represents himself as possessing the relevant knowledge. Such an implication would not be credible with regard to a future situation, because it is not yet true or false. Nevertheless, it is feasible that evidentiality might not be indicated if the utterance merely relates information that the speaker views as established at the time of speech, which happens to pertain to an anticipated situation. Such a characterization seems appropriate to the construal of a sentence like (34): *according to the itinerary now in effect, the situation of Barry's departure for London tomorrow holds*. Hence, (38) and (34) are analogous: the absence of evidentiality does not reflect the speaker's personal corroboration, but his modal non-participation. If this is an appropriate analysis of the futurate, then not only is it not meant to persuade or otherwise represent an uncertain event as factual; it is in fact markedly neutral from the standpoint of the speaker, who in effect reports information that he accepts as being currently established.

The fact that a sentence like (39a) is grammatical also supports this view. If the futurate represented certainty, it would be unexpected that it could co-occur with an adverb expressing epistemic speculation. On the other hand, if the construction itself is modally neutral, the speaker is not perforce precluded from adding his assessment of the proposition. In this case, for example, the speaker makes it explicit that, though he is aware that a plan currently exists, his familiarity with it is not sufficient to allow him to report the situation with absolute confidence.

- (39) a. Barry probably leaves for London tomorrow.
 b. Barry evidently leaves for London tomorrow.

Likewise, the expression of evidentiality via an adverb is also possible. However, it is not taken to indicate that the proposition is based on evidence (which of course would be a valid

³⁸ See footnote 12.

characterization of a plan, itinerary, etc.), but rather to temper the assertion, as was seen to be the case for the past propositions of (38). For example, (39b) would likely be construed to mean that though the speaker is aware of an itinerary, the information concerning the scheduled departure comes from a secondary source and is therefore not personally corroborated.

Of course, there exists as well the possibility of making it explicit that the plan, itinerary, etc., or indeed some other type of information, is of an evidential nature without such a nuance, at least in accordance with the hypothesis of the previous section – through the auxiliary *will_F* which encodes the [+EVIDENTIAL] feature. As was observed earlier, in a matrix clause the replacement of the futurate by a *will_F* construction consistently renders a grammatical sentence. But in line with the current proposal, the resulting interpretative impact is more profound: by referencing the evidence, the speaker becomes a modal participant who takes responsibility for the assessment.

It also naturally follows that the inverse relationship does not hold: the futurate should occur felicitously in only a subset of clauses in which *will_F* is grammatical. As it constitutes a report based on currently established information about the future, the futurate could not logically be employed to relate a situation that is conceptually uncertain or uncontrollable, meaning that the speaker should be compelled to clarify that he is making a modal assessment of the evidence – specifically, by using [+EVIDENTIAL] *will_F*. This therefore accounts for the fact that unlike the *will_F* future, the English futurate is restricted to scheduled or otherwise predetermined situations.³⁹

If the current analysis is on the right track, the *will_F* future and the futurate construction are structurally connected through the common projection of the marked [+FUTURE] feature, making each a syntactic instance of future tense in English. They differ however in how the feature is realized – by the auxiliary in the former case or through a temporal adverbial in the latter. From a morphological perspective, only *will_F* constitutes a future tense morpheme. What differentiates the two is that *will_F* explicitly encodes evidential modality while the futurate form does not entail any component of speaker-orientation.

This section has considered only matrix contexts, in which the absence of modality in the futurate is interpreted as non-participation of the speaker, in the sense that he reports currently established information about a future situation without reference to his judgment. In embedded clauses, which are the topic of the next brief section, the issue turns out to be more complex. A number of apparently mysterious properties have made the analysis of these contexts particularly controversial. I will suggest that the account that has been developed thus far offers a theoretically straightforward explanation for a particular instance of such a construction.

³⁹ Regardless of how confident the speaker is that his proposition will prove valid, situations that do not meet this criterion are not felicitous in the futurate. For example, even if it is based on a supposedly infallible weather forecast, (i) is unacceptable. [As both reviewers point out, this differs from the futurate forms of languages like French (e.g. “Il neige demain”). As mentioned in footnote 36, this is presumably due to differences in the combination of functional features encoded by the respective morphologies, and will not be part of this work.]

(i) # It snows tomorrow.

Imagine however a ‘cinema’ scenario, in which the speaker views a film for the second time. All of the action that will transpire after the current scene is, in his mind, already established. It is interesting that the types of situations that are generally infelicitous in the futurate become entirely acceptable in this context, e.g., (ii).

(ii) Paul wins the marathon in the next scene.

4. FUTURITY IN TEMPORAL ADVERBIAL CLAUSES

The fact that embedded clauses that are construed as future and those that are construed as past pattern in substantially different ways from a morphological perspective in English is widely known. Much of the evidence offered by Enç (1996), and elicited by others, for treating *will* as a purely modal auxiliary within the hypothesis that the language has a two-tense system rests on this observation.⁴⁰

The crux of the argument comes from examples like (40). In English, when past tense inflection in certain complement clauses occurs under a past-inflected matrix verb, it is potentially interpretatively vacuous. Sentence (40a) (Enç 350:(18)), for example, may be understood to indicate two genuine instances of anteriority, i.e., a ‘shifted’ reading, in which Mary’s fatigue holds before her past statement. (I.e., “*Mary said, ‘I was tired.’*”) But in the alternate ‘simultaneous’ reading, it is understood that she was tired at the time that she made the announcement. (I.e., “*Mary said, ‘I am tired.’*”) The second of these, in which the past inflection is not construed as locating the situation at a time anterior to the matrix situation, is considered a Sequence-of-Tense (SOT) phenomenon, and the fact that such constructions exist in English categorizes it as an SOT language.

- (40) a. Mary said that she was tired.
 b. Mary will say that she will be tired.
 c. Mary will say that she is tired.
 d. Mary may say that she is tired.

According to the reasoning of Enç, if English has this status, it logically follows that all of its tenses should give rise to a similar ambiguity. She observes, however, that analogous clauses containing *will* do not. Sentence (40b) (Enç 350:(19)), for example, only has a shifted reading in which Mary’s fatigue holds at a time later than her statement. (I.e., “*Mary will say, ‘I will be tired.’*”) In order to indicate coincidence of the two situations (i.e., “*Mary will say, ‘I am tired.’*”), present tense inflection is employed in the complement, as shown in (40c). Enç therefore surmises that *will* cannot be analyzed as a tense marker. The fact that it patterns in such constructions with certain other modal auxiliaries, as in (40d), leads her to conclude further that a modal treatment of the auxiliary is appropriate.

SOT phenomena remain highly contentious in spite of the numerous accounts that have been proposed. The cartographic approach seems to open up new paths of exploration that until now have not been envisioned. For example, given that past and future features are structurally distinct, it is feasible that SOT is an issue pertaining to the projection of only one of them, specifically, PastP. If this is so, then ‘vacuous’ simultaneity with a past ([+PAST]) matrix would take the form of past tense inflection, and with a non-past ([-PAST]) matrix, it would employ non-past (i.e., present) morphology. Consequently, the simultaneous readings of (40a) and (40c) would naturally follow. In contrast, since SOT would not concern FutP, the second instance of a [+FUTURE] feature in a complement could not be semantically vacuous. Logically, the embedded *will_F* in (40c) would necessarily denote posteriority to the time of the future matrix. The issue certainly deserves proper investigation, but since it is too complex to be handled in the current work, I will put it aside for later consideration.

This final section will instead concentrate on the specific issue of tense morphology in the embedded context of temporal adverbial clauses (TACs), attempting to demonstrate that the proposal developed in the previous sections offers a theoretically viable account. To review, the most important suggestion thus far is that a compositional analysis is necessary

⁴⁰ See section 3.1.

for the proper understanding of both *will_F* and the futurate. While the auxiliary is decomposed as [+EVIDENTIAL], [-PAST], and [+FUTURE], only the last two of these constitute the futurate construction. And since the [+FUTURE] feature is not encoded by the (non-past) inflectional morphology, the futurate requires that it be rendered visible for interpretation through some other means.

The crux of the argument is the following: because *will_F* encodes a marked value of evidential modality feature, it may occur grammatically only in a construction in which this feature projects; otherwise, it would give rise to a syntactic and semantic mismatch. In a clause in which [+FUTURE] (and [-PAST]) projects, but not the evidential feature, the only appropriate form to express futurity is the futurate.

TACs are generally treated as a sub-case of SOTs, which exhibits specific properties that set it apart from two others: complement clauses and relative clauses. This likely owes to the similarities observed between (41) and (42) and the examples above. While simultaneity of the embedded situation with a past matrix is realized through past inflection (compare (41a) and the simultaneous reading of (40a)), with a future matrix, present morphology is required ((41b) vs. (40c)). Furthermore, anteriority of the TAC to the past matrix situation in (42) resembles the shifted reading of (40a) – just as Mary’s fatigue above precedes her statement; here, the embedded raining situation lies in the past relative to Brian’s dining.

- (41) a. Brian ate dinner while it was raining.
 b. Brian will eat dinner while it is raining.

(42) Brian ate dinner after it rained.

The treatment of TACs as exhibiting SOT properties, however, is arguably erroneous, as they are in some ways substantially different. The interpreted ordering in this second group of sentences is in reality attributable to the complementizers *while* and *after*, and somewhat accidental from the point of view of tense. If the order in which the situations hold were the factor determining tense inflection, one would anticipate that a reversed arrangement of the events in (42), indicated appropriately through a *before*-clause, would trigger a corresponding change in morphology. The result should either render the futurity of the TAC explicit, as in (43a), or at least avoid contradiction by employing present (i.e., non-past) inflection as in (43b). However, as has been pointed out by Ogihara (1996) and elsewhere in the literature, only past tense morphology is grammatical in such a construction, as shown in (43c).

- (43) a. * Brian ate dinner before it will rain.
 b. * Brian ate dinner before it rains.
 c. Brian ate dinner before it rained.

According to Ogihara, the reason that the tense forms in (43a and b) are not acceptable, though reflective of the temporal ordering holding between the two situations, is that in English the grammatical inflection does not relate the TAC to the time of the main assertion, but to the time of speech.⁴¹ Though the rain is posterior to the matrix event in the scenario of (43), it is anterior to the utterance, and so past morphology must be employed.

Sharing with Enç (1996) and Abusch (1998) the assumption that English has a two-tense (past / non-past) system, Ogihara further demonstrates that similar observations can be made for TACs in future contexts, hence allowing for a uniform explanation. If we accept that *will* has a strictly modal, i.e., non-tense, status, then a clause in which it occurs is categorized

⁴¹ See Ogihara (1996) for the contrasting case of Japanese.

as non-past. A sentence like (41b) then logically locates the two situations in the non-past with respect to speech time, and the coincidental interpretation is possible because the tense inflection in the embedded clause matches that of the matrix. Moreover, non-coincidental TACs with (modally triggered) future interpretation also follow the anticipated pattern. Sentences (44a and b) are grammatical because both the matrix and embedded situations are part of the speaker's non-past, but (44c) is not, in spite of the fact that it reflects the anteriority of the rain to Brian's dinner.

- (44) a. Brian will eat dinner before it rains.
 b. Brian will eat dinner after it rains.
 c. * Brian will eat dinner after it rained.

One part of this proposal seems empirically viable and may be accepted in the current framework without conflict: the tense inflection in English TACs relates the situation to the time of the utterance, not of the matrix. It has been argued here, however, that the two-tense hypothesis of English is inaccurate, and that the language does have authentic future tense. Given that the TACs in (41b) and (44a and b) are unambiguously posterior to speech time, we are therefore left to account for two apparent problems. On one hand, we would wrongly predict that the present inflection in these TACs should be ungrammatical (as the situation is in the future). And on the other, we must explain why *will_F*, which is claimed here to be the English future auxiliary, is entirely unacceptable, as seen in (45).⁴²

- (45) a. * Brian will eat dinner while it will rain.
 b. * Brian will eat dinner before it will rain.
 c. * Brian will eat dinner after it will rain.

One solution to the first problem should immediately come to mind. We can imagine, in line with the proposal developed in the section 3.3, that the grammatical TACs are in reality futurate constructions and that in the structure of the superficially present form is the projection of a [+FUTURE] feature. As it is not head-encoded, it is not morphologically apparent, but it is nonetheless perceived in the interpretation. In the case of matrix futurates, it was argued that the feature must be rendered visible by a temporal adverbial to be felicitous, and though such an element is possible here (e.g., "*Brian will eat dinner while it is raining this evening*"), it is clearly not obligatory. Nevertheless, the future context of the matrix situation with which the TAC is associated is arguably sufficient to make posteriority explicit.

Support comes from the ungrammaticality of sentences like (44c) above. One can imagine a scenario in which only Brian's dinner will follow speech time, the raining event having already transpired. This expression seems to reflect suitably the temporal arrangement, and at the same time respects the relationship that each situation holds to the speaker's 'now'. Yet, likely because it fails to establish a conceptually relevant connection between the two situations, it is not possible. Though dinner follows the rain, it also follows the time of speech, making the earlier reference superfluous. This implies simply that the communicative import of a TAC is to locate the temporal interval against which the time of the matrix event is to be evaluated, and that consequently, it must fall on the same side of the time of speech as the matrix time does in order to be meaningful. Sentence (41b) seems to reinforce this view.

⁴² *Will* does occur in future TACs like (i); however, it is not the future *will_F* being analyzed here, but the polysemous *will* of volition, paraphrasable as 'be willing to'. It is therefore not relevant.

- (i) Billy will eat his vegetables before his mother will give him dessert.

Nothing precludes the possibility that the rain is already underway when the speaker makes his assertion as long as it is anticipated to continue until Brian's dinner. But the relevant interval to which he refers must hold during the time of the posterior matrix event.

If this is accepted, it might still be countered that according to section 3.3, the futurate is limited to situations perceived as scheduled or otherwise predetermined, which does not appear to characterize a future raining event. (Cf. #*"It rains tomorrow."*) However, it was suggested that the actual underlying requirement was that the situation be established. In the mind of the speaker, a future-construed TAC meets this criterion, as it constitutes a presupposition.⁴³ Regardless of his intuition that such a future event could not be guaranteed, it is taken to be predetermined in the context of the sentence.

If the proposal of the current work is correct, this leads directly to an explanation for the ungrammaticality of *will_F* in TAC contexts. By definition, a presupposition represents something that is accepted, or taken for granted. It therefore is predicted not to entail the type of judgment associated with speaker-oriented modality, for example, in the form of epistemic assessment. This appears to mirror the view of Haegeman (2006) who characterizes presupposed complements of factive verbs, as not being anchored to the speaker. And though she does not label them as presuppositions, Haegeman also notes that TACs share this quality. It is for this reason, she surmises, that adverbs of speaker-oriented modality give rise to ungrammaticality, as seen in (46) ((46a)=Haegeman (1653:(2b)).⁴⁴

- (46) a. * I haven't seen Mary since she probably left her job.
 b. * Brian will eat dinner while it is frankly / evidently / certainly raining.

Naturally, as (47) shows, this observation can be extended to auxiliaries expressing similar meanings, and herein lies the explanation for the prohibition of *will_F* in TACs: because this auxiliary encodes evidential modality, it would present a featural mismatch. Consequently, the only grammatical form that the future-oriented clause may employ is the futurate construction.

- (47) a. * I haven't seen Mary since she must have left her job.
 b. * Brian will eat dinner while it might be raining.

In conclusion, the compositional analysis of *will_F* and the futurate, proposed in section 3, in essence differentiates the two only in terms of the evidential feature encoded by the former. This seems to give a straightforward explanation for the observed syntax of future-construed TACs, at the same time maintaining the intuitive analysis of the auxiliary as a future tense marker.

5. CONCLUSION

This paper has revisited the tense system of English, addressing the hypothesis that it consists of only the past and non-past, and that *will* is in fact a purely modal auxiliary.

⁴³ Both of the classic diagnostics of presuppositions confirm this: (ia) negation, (ib) interrogation.

- (i) Brian will eat dinner before it rains. → It will rain.
 a. Brian will not eat dinner before it rains. → It will rain.
 b. Will Brian eat dinner before it rains? → It will rain.

⁴⁴ Matrix futurates cannot be similarly described as presuppositions. Recall from (39a and b), that speaker-oriented modality is not precluded.

Two different indicators of futurity were considered: (future-construed) *will_F* and the futurate construction. Taking a cartographic approach, a compositional analysis was suggested for each, demonstrating both shared and distinct properties. As anticipated, they have in common the presence of [+FUTURE] tense feature, logically giving rise to their primary interpretative value. They differ however in crucial ways. On one hand, the auxiliary encodes an evidential feature, while the futurate does not entail any sense of speaker-oriented modality. And from a morphosyntactic perspective, only *will_F* directly encodes the functional features as a head. Since the futurate employs unmarked present tense morphology, the future feature must therefore be rendered visible to interpretation through some other means. In a matrix clause, for example, a temporal adverbial is necessary.

It was suggested that this complexity is what has made an appropriate analysis difficult. *Will_F* is not simply future tense, but a fusional element. Because of the evidential feature that it encodes, it patterns in certain constructions with other modal auxiliaries, a fact that has been argued in the literature to be evidence against the tense treatment of *will*. The future-oriented temporal adverbial clause, in which only present tense morphology is grammatical, was offered as a case in point. If we recognize, however, that these expressions are in reality presuppositions, the exclusion of *will_F* is in fact entirely expected. Because the only alternate through which the future feature may be expressed is the futurate, it is necessarily employed.

If the arguments here are on the right track, then *will_F* does indeed constitute an element of future tense, making English a legitimate three-tense language.

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