

Nonfuture Infinitives in English

—Their Syntax and Temporal Interpretations*

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Wurmbrand (2014) による不定詞の分類において、上位節と共時的に解釈されるタイプの不定詞に観察される時間とアスペクト解釈における違いがどのような構造上の差異によるものかを考察する。命題態度動詞について、英語の時制節補文、イタリア語の接続法の補文とも比較し、これらの動詞の不定詞補文の性質は、命題態度動詞と時制／非時制に関わらず節周辺部の構造を介した補文との一致現象に起因することを示す。命題態度動詞の *seem* の不定詞補文が、この種類に属する他の動詞の不定詞補文と異なる現象を示すことも、「話者」と「態度保持者」に関わる節周辺部の構造上の違いに基づく説明を提案し、「非未来」不定詞は、「命題」を表すかどうかといった意味的な性質によるのではなく、節構造の違いから、時間・アスペクトに関する違いを説明する事が可能であることを主張する。

Keywords : infinitive, propositional attitude verb, attitude holder, episodic reading, clause periphery

1. Introduction

Stowell (1982) argues that the lack of morphologically overt tense does not warrants the absence of syntactic or semantic tense as some infinitives are interpreted as an irrealis future while others are temporally dependent on the matrix event time. Stowell classifies the former as

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tensed infinitives and the latter tenseless infinitives. While this analysis provides an important basis for the null Case approach to PRO (Chomsky and Lasnik 1993, Bošković 1997, Martin 1996, 2001), Wurmbrand (2014) argues that the tensed vs. tenseless dichotomy cannot adequately describe differences among infinitives in their temporal and aspectual properties, and proposes a three-way classification of infinitives: future irrealis infinitives, propositional infinitives and nonpropositional, nonfuture infinitives. She argues that future irrealis infinitives include the modal element *woll*, which locates the embedded event time posterior to the reference point. The other two types are both nonfuture infinitives and lack an independent tense. These infinitives must be dependent on the superordinate tense for temporal interpretation, but their modes of dependence differ from each other, resulting in different temporal and aspectual properties.

This squib will focus on issues related to nonfuture infinitives and discuss the differences between their two types. The distinction between the two types of nonfuture infinitives mostly coincide with the distinction proposed in Wurmbrand (2014), but slightly differs from it. It will be shown that the distinction between the two types of nonfuture infinitives does not necessarily correspond to the semantic category of propositional vs. non-propositional, but they differ from each other in the structure of their clause periphery. I will propose that their differences are attributed to the difference in whether the infinitival clause contains a functional structure in which the temporal coordinate of the attitude holder is located. I will start our discussion by going over the properties of propositional infinitives, and then proceed to discuss the other type of nonfuture infinitives.

2. Propositional Infinitives

2.1 Propositional Infinitives as Control or ECM infinitives

Propositional infinitives do not form syntactically a uniform class as they can be either control or ECM infinitives, while they manifest common temporal and aspectual properties unique to this category. Compar-

ing propositional infinitival complements with finite propositional complements in English and with subjunctive complements in Italian, it will be shown that the temporal and aspectual properties of propositional infinitives are attributed to a clause peripheral feature in the complement clause of propositional attitude verbs in general in combination with their lack of tense specification. I will propose that the attitude holder's NOW, which Wurmbrand (2014) argues to be the reference time in interpreting propositional infinitives, has a syntactic reflex as a feature in the clause periphery, a feature attributed to the agreement between the selecting verb and its complement.

One notable characteristic of propositional infinitives is that their bare VP cannot be interpreted in a nonstative, nongeneric, episodic sense.

- (1) a. Anne decided to write a syntax paper tomorrow.
 b. *Anne believes Mike to write a syntax paper tomorrow.
 c. *Mike seems to write a syntax paper tomorrow.

The complement clauses in the above three sentences differ syntactically; (1a) contains a Control infinitive with a null subject (PRO), the complement in (1b) is an ECM infinitive, and that of (1c) is a raising infinitive. In the null Case approach to PRO proposed in Chomsky and Lasnik (1993) Bošković (1997), Martin (1996, 2001), the contrast shown in (1) is attributed to the difference in the infinitival Tense feature: Control infinitives are specified for [+Tense], which agrees with the null Case feature of PRO. [+Tense] feature is assumed to bind the event variable of eventive predicates (cf. Enç (1991), which leads to an episodic interpretation with an independent time reference. In contrast, ECM and raising infinitives have [-Tense], and therefore episodic readings are not possible for bare VPs as in (1b) and (1c). Thus, in this account, the lack of episodic readings is a necessary consequence of the [-Tense] specification, which applies only in ECM and raising infinitives. However, as Pesetsky (1992) and Wurmbrand (2013) point out, although the number is quite limited, certain English verbs like *claim* and *pretend* take a propo-

sitional infinitival complement with PRO as the subject. The infinitival complement of *claim* cannot have an episodic interpretation as indicated by the contrast observed in (2), suggesting that the time denoted in the embedded clause event cannot be independent from the time denoted in the matrix clause. Similarly, the infinitival complement clause of the verb *pretend* must receive contemporaneous interpretation with the matrix clause. In the intended reading for (3b), the time of reading is distinct from that of pretending, but the sentence is ruled out with this interpretation.

- (2) a. Mike claimed [PRO to be the smartest student in class].
 b. *Mike claimed [PRO to write a syntax paper later].
- (3) a. Joan pretended [PRO to be innocent].
 b. *Joan pretended [PRO to read a syntax paper later].

Thus, [-Tense] feature of propositional infinitives does not entail that they are ECM or raising infinitives ; some propositional infinitives are Control infinitives.

Furthermore, ECM and raising infinitives may allow episodic readings. Pesetsky, reporting Bresnan's (1972) observation, notes that sentence (4) is ambiguous in three ways, and in Wurmbrand (2014) each of the interpretations is associated with a distinct syntactic structure from one another as given in (5a-c).

- (4) John expected Mary to know French.
- (5) a. John expected Mary_{obj} [PRO to know French]
 b. John expected [\emptyset _{for} [Mary_{subj} to know French]]
 c. John expected Mary [t_{subj} to know French]

In (5a) *expect* has a meaning close to 'require of,' and is associated with the object Control structure with the post-verbal DP as a recipient of a θ -role from *expect* as an entity capable of fulfilling the requirement expressed in the infinitive. In (5b) *expect* can also be interpreted as a verb

- (8) a. *Ken believes Yoko to read the paper (now/tomorrow).
 b. *Ken believed Yoko to read the paper (yesterday/tomorrow).
- (9) a. *Mari claims to repair the car (now/tomorrow).
 b. *Mari claimed to repair the car (yesterday/tomorrow).

The bare VPs in the examples in (8), (9) cannot refer to a time distinct from the matrix attitude event, or they cannot have an imperfective (progressive) interpretation; when propositional attitude verbs take an infinitival complement, the bare VP must receive a simultaneous interpretation with the matrix attitude event, allowing only stative or generic interpretations as in the examples in (10).

- (10) a. Ken believes his girlfriend to write short stories.
 b. Ken believed his girlfriend to be rich.

The absence of episodic readings as shown in (8), (9) is a predictable consequence if these infinitives lack an independent Tense and the time of the embedded event is dependent on the superordinate punctual event. In English, eventive predicates are inherently perfective and cannot be simultaneous with a punctual time such as an utterance event. Thus, sentence (11) does not mean that Yoko's reading is taking place at the time of utterance.

- (11) *Yoko reads the paper now.

In embedded contexts, episodic readings are ruled out when the embedded event is meant to be simultaneous with the superordinate event time. (12a) does not mean that Ken's belief and Yoko's reading are contemporaneous. Similarly, the embedded clause in sentence (12b) cannot have an interpretation with a Sequence of Tense (SoT) effect, where the embedded past is solely for the sake of morphological agreement with the matrix past tense and is interpreted as present (i.e., simultaneous) with respect to the time of Ken's belief as indicated in (12c).

- (12) a. *Ken believes that Yoko reads the paper.
 b. Ken believed that Yoko read the paper.
 c. *Ken PAST believe [that Yoko PAST read the paper]

The impossible readings for (12a) and (12b) suggest that the embedded event time in these sentences must be interpreted with respect to a punctual time. The relation between the punctual reference time and the embedded event time seems parallel to that holding between the utterance time and the event time in the main clause in (11).

2.2 Temporal Properties of Propositional Infinitives

Wurmbrand (2014) proposes that the infinitival complement of propositional attitude verbs is temporally located with respect to the attitude holder's NOW as the reference point. The attitude holder's NOW is defined as a punctual time that the attitude holder, i.e., the subject of the main event, considers the NOW of the attitude (cf. Abush 2004, and the references cited therein). The parallel facts observed in finite complement clauses in (12) suggest that the reference to the attitude holder's NOW holds not only in infinitives but also in finite complement clauses. Giorgi (2010) proposes that the attitude holder is syntactically represented in the embedded clause as the feature of the event corresponding to the main attitude through its spatio-temporal coordinates. I assume that the feature of the attitude holder is represented in the complement clause through the agreement between the selectional features of the superordinate predicate and C-features. Propositional attitude verbs like *believe* may select either a finite or infinitival complement, and in either case the attitude holder's temporal coordinate is represented in the peripheral functional projection of the selected clause as shown in (13).

- (13) a. Mary believes [that_[attitude holder] [_{FinP} Fin_[+] [Jason T_[+past] left]]]
 b. Mary believes [_{FinP} Fin_[-]_[attitude holder] [Jason T_∅ to be happy]]

Since the infinitival complement of propositional attitude predicates

does not have a tense value, by default the embedded event is interpreted as being simultaneous with the attitude holder's *NOW*. As seen in (8) and (9) above, the simultaneous imperfective interpretation is not possible for bare VPs of eventive verbs for their perfective nature. With the morphemes of the progressive aspect, the imperfective readings are possible.

- (14) a. Ken believes Yoko to be reading the paper right now.
 b. Ken believed Yoko to be reading the paper right then.

In these sentences, the progressive aspect allows the reference time, the attitude holder's *NOW*, to be included in the entire event by picking out from the entire duration of 'reading the paper' an interval that overlaps the reference time. With the perfect auxiliary *have* along with the perfective morphology, perfective interpretations are possible.

- (15) a. Ken believes Yoko to have read the paper.
 b. Ken believed Yoko to have read the paper.

The perfect auxiliary locates the event time anterior to the reference point, and the resultant state is considered to hold at the reference point.

2.3 The Representation of the Attitude Holder's NOW in the Italian Subjunctives

Similar facts are observed in subjunctive clauses in Italian in terms of the lack of independent tense and the use of perfect auxiliary to indicate anteriority. In Italian propositional attitude verbs usually require the subjunctive mood, not the indicative form, for their finite complements. The subjunctive mood in Italian consists of present and past forms. Past subjunctive is indicated by distinct inflectional endings from the corresponding present forms, but the difference in the present/past subjunctive forms is solely a matter of the agreement with the superordinate

tense. A past subjunctive form cannot be embedded in a present tense clause, and a present subjunctive form cannot be embedded in a past tense clause as illustrated by (16b) and (16c).

- (16) a. Gianni sperava che Maria fosse felice.
 Gianni hoped that Maria was_(subj past) happy
- b. *Gianni spera che Maria fosse felice.
 Gianni hopes that Maria was_(subj past) happy
- c. *Gianni sperava che Maria sia felice.
 Gianni hoped that Maria is_(subj present) happy

The past subjunctive inflection does not have a function to locate the embedded event in the past relative to the superordinate event or the utterance time; its default interpretation is simultaneity with the matrix event as observed in the example with a stative predicate in (16a). Furthermore, as shown by Girogi's (2010) example, the time of the embedded event can be modified by any of the indexical temporal expressions given in (17).

- (17) Gianni sperava che Maria partisse ieri/oggi/domani.
 Gianni hoped that Maria left_(subj past) yesterday/today/tomorrow
 (Girogi 2010: 34)

Thus, the tenses in the subjunctive mood indicate a morphological concord, but do not function as time-ordering predicates. In this sense, the Italian subjunctive clauses and English propositional infinitives are quite similar. As in English infinitives, in subjunctive clauses anteriority is expressed by the periphrastic form with the perfect auxiliary in the subjunctive form.

- (18) a. Gianni crede che Maria abbia telefonato.
 Gianni believes that Maria has_(subj present) called
- b. Gianni credeva che Maria avesse telefonato. (Girogi 2010:36)

Gianni believed that Maria had_(subj past) called

In Giorgi (2010) the relation between the subjunctive complement and the selecting verb is represented as in (19).

(19) [...[_V sperava [_{MOOD} che_(+mood) [_T ...partisse_(+mood, +past)...]]]

The subjunctive complements of propositional attitude verbs like *sperare* ‘hope’ represent the attitude holder in Mood projection. Even though in English propositional infinitives no special morphological marking is present, it seems reasonable to assume the attitude holder’s temporal coordinate as these infinitives parallel Italian subjunctives in expressing the mind of the subject of the selecting clause as well as in their temporal interpretations.

3. Infinitival Complements of *Seem* and Nonpropositional Attitude Verbs

3.1 A Puzzling Fact of *Seem*

The raising verb *seem* presents slightly different situations concerning the interpretations of its propositional infinitival complement from the cases discussed in the previous section.

- (20) a. *Mary seems to enjoy the movie right now.
b. Mary seemed to enjoy the movie right then.

The restriction against episodic readings of bare eventive VPs holds when the matrix clause is in the present tense as in (20a) just as in the examples with *believe* in (8), and *claim* in (9) above. When *seem* is in the past tense as in (20b), however, an episodic reading is possible for the same eventive VP suggesting that the complement event time is not interpreted with respect to a punctual time like the attitude holder’s NOW.

Note that the finite complement of *seem* is interpreted with respect to a punctual time as the SoT interpretation is not available for the comple-

ment with an eventive predicate; in (21) the time of Mary's enjoyment of the movie must precede the attitude holder's NOW, the time identified with that of the speaker of the sentence as an experiencer argument is not explicitly expressed.

(21) It seemed that Mary enjoyed the movie.

*It PAST seem [that Mary PAST enjoy the movie]

The comparison with (21) suggests that a punctual reference time is involved in the complement clause of (20a), while there is no such punctual point in the embedded infinitive of (20b). Wurmbrand (2014) points out that when the attitude holder for the infinitival complement of *seem* is overtly expressed as in (22), an episodic reading is not available.

(22) *Mary seemed to Giulia to enjoy the movie right then.

Wurmbrand claims that the infinitival complement of *seem* can be ambiguous between propositional and nonpropositional. When the attitude holder is made explicit as an experiencer phrase, the time expressed in infinitival complement is interpreted relative to the attitude holder's NOW, and episodic readings are ruled out as is the case in other propositional infinitives. When the attitude holder is not present as in (20b), the embedded infinitive is not propositional and is interpreted as simultaneous with the matrix event time.

I will propose an alternative analysis according to which the infinitival complement of *seem* is always propositional, for the finite complement of the verb is always propositional whether the experiencer argument is overt or not. Since *seem* lacks the external argument, when an overt experiencer phrase is not present, the attitude holder must be identical with the speaker, which is assumed to be represented in the highest functional projection in the C-system, ForceP or the like. Infinitival clauses are not as full-fledged clauses as finite clauses in lacking the high functional field in the C-layer such as ForceP. Then, there is no way for

the embedded infinitive of (20b) to represent the attitude holder.

Suppose that *seem* can select an infinitival TP without C-layers as shown in (23). Then, there will be no functional projection for the attitude holder, let alone for the speaker, to be represented, in the infinitival complement of *seem*. With the structure in (23), the complement event time is interpreted with respect to the only possible reference time, i.e., the matrix event time. Since the matrix event time is shifted in the past of the utterance time by the matrix past tense, the embedded infinitive is interpreted as simultaneous not with a punctual reference time, but with the time interval in the past denoted by the matrix event. The sentence describes the situation in which the time of Mary's enjoying the movie is contemporaneous with the time of 'seeming' in the past of the utterance time.

(23) Mary seemed to enjoy the movie.

Mary_i T_[+past] seemed [_{TP} *t*_i T_∅ to enjoy the movie]

In (20a) repeated as (24), the embedded event must still be interpreted with respect to a punctual time as its unacceptable status suggests.

(24) *Mary seems to enjoy the movie right now.

Although *seem* is a stative predicate, in the present tense, a longer time interval where the 'seeming' state holds cannot be the reference time for the embedded event. I assume that in present tense sentences taking an infinitival complement like (24), the moment in the matrix event designated by the the present tense, i.e., the time corresponding to the utterance time, functions as the reference time for the embedded event. When the embedded infinitive has a stative or an imperfective VP as in (25), the perfective requirement does not apply, and the reference time is considered to be included in the embedded event time, which makes the sentence interpretable.

- (25) Mary seems to be enjoying the movie right now.

In the proposed analysis, the difference between *seem* and the propositional verbs can be attributed not to the semantic difference of propositional or nonpropositional complement, which seems rather counterintuitive, but to the difference in the structure of the clause periphery.

3.2 Further Considerations

There is still another type of nonfuture infinitival complements. When a nonfuture infinitive is embedded by a non-propositional attitude predicate in the past tense, an eventive predicate is allowed with a nongeneric interpretation as in (26).

- (26) a. Jason managed to rebuild the garage.
 b. Jason tried to rebuild the garage.
 c. Jason began to rebuild the garage.

The temporal interpretations of the infinitival complements in these sentences suggest that the embedded event time is not interpreted with respect to a punctual time. Since the matrix verbs in these sentences are not propositional attitude verbs, the attitude holder's NOW is irrelevant, and the embedded event time is interpreted as being simultaneous with the matrix event time shifted to the past. Thus, the structure of nonfuture, nonpropositional infinitives may reasonably be assumed to have a structure parallel with that of the infinitival complement of *seem* in lacking the structural position for the attitude holder as shown in (27).

- (27) Jason $T_{[+past]}$ tired [T_{TP} PRO T_{\emptyset} to rebuild the garage]

The unacceptable status of the sentences in (28) is due to the perfective requirement generally imposed on English eventive verbs. When the matrix tense is present, the matrix event time, and consequently the embedded event time, are interpreted with respect to the utterance

time. Therefore, in the examples below, eventive predicates cannot have episodic readings; these predicates are allowed only when the sentences express generic properties.

- (28) a. *Jason manages to rebuild the garage.
 b. *Jason tries to rebuild the garage.
 c. *Jason begins to rebuild the garage.

Thus, *seem* and nonpropositional attitude verbs differ in the semantic type of their infinitival complements but the shared properties in their temporal interpretations can be attributed to the shared structural properties which are distinct from those assumed in the other nonfuture infinitives.

4. Conclusion

Since nonfuture infinitives do not have an independent tense value, their event time must be interpreted as simultaneous with another time. They may differ in temporal and aspectual interpretations depending on what they take as the reference point for their temporal interpretation, and the choice is determined by the selectional properties of the superordinate verb and structure of the selected infinitival clause. More specifically, the temporal and aspectual properties of nonfuture infinitives depend on whether the attitude holder's temporal coordinate is represented in their clause-peripheral functional projection or not.

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