

An S-Selectional Approach to *To*-Infinitives in English*

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1. Introduction

In this paper, I deal with the syntactic structure of *to*-infinitives diachronically, based on the semantic property of *to*-infinitival constructions.

As is well known, English *to*-infinitival constructions as complements of verbs are divided into two types: The control and the Exceptional Case-Marking (henceforth, ECM) constructions. They are exemplified below:

- (1) a. John_i tried [PRO_i to win].
 b. John believed [him to be innocent].

Sentence (1a) is an example of the control construction, in which PRO is controlled by the proper antecedent *John*, and sentence (1b) is the ECM-type.¹

Stowell (1982) assumes the semantic difference between the control and ECM complements and provides a syntactic explanation of it. He observes that the temporal properties of control infinitives differ from those of ECM infinitives: In control constructions, the event time of the infinitival verbs is *unrealized* or future-oriented with respect to that of the matrix verbs, whereas in ECM constructions, the event time of the infinitival verbs varies according to the matrix verbs.

In the meanwhile, various analyses have been proposed for the structures of *to*-infinitives in Old English (OE) and Middle English (ME) (e.g. Kageyama (1992), Gelderen (1993), among others). However, these analyses are based on the categorial considerations, not on the semantic ones, and do not address the semantic difference between control and ECM *to*-infinitives in OE/ME. Thus, in this paper, I provide a diachronic analysis of the *to*-infinitives from an s(ematic)-selectional perspective.²

The organization of this paper is as follows. Section 2 introduces the s-selectional property of *to*-infinitival complements to verbs (cf. Bošković (1996)) and overviews the historical development of the *to*-infinitives. Section 3 briefly observes Stowell's (1982) analysis of the tense interpretation of *to*-infinitives and makes a proposal on the analysis of *to*-infinitives in OE from the s-selectional perspective. Section 4 summarizes this article.

2. The S-Selectional Property of the *To*-Infinitives

In this section, I briefly review some analyses that introduce the s-selectional approach to *to*-infinitives in Present-Day English (PDE) (e.g. Bošković (1996) and

Martin (2001)). In addition, I overview the diachronic change of *to*-infinitives and examine their s-selectional property.

2.1. *The S-Selectional Property of the To-Infinitives in PDE*

Bošković (1996) provides an s-selectional approach to null Case-checking of PRO, following Stowell's (1982) observation that the control *to*-infinitive differs from the ECM one in its temporal property. Bošković assumes that control-type verbs s-select a non-propositional *irrealis*, i.e. unrealized tense, complements with [+Tense, -Finite] T, whereas ECM type verbs s-select a propositional complement with [-Tense, -Finite] T. Following Martin's (1992) assumption that PRO is null Case-checked via Spec-Head Agreement with [+Tense, -Finite] T, Bošković argues that PRO is null Case-checked in *to*-infinitival complements of control verbs, but not in those of ECM verbs.³ Thus, in order to account for the syntactic difference between control and ECM *to*-infinitives, i.e. the occurrence/non-occurrence of PRO, Bošković brings in their semantic difference into the syntactic analysis of *to*-infinitives.

Martin (2001), also following Stowell (1982), argues that [+Tense] in control *to*-infinitives is in some sense future-oriented and that the tense of the control *to*-infinitives is invariably a modal element corresponding most closely to *would*.⁴

To sum up, Bošković (1996) argues that null Case-checking of PRO is conditional on the semantic property *irrealis*, and specifies the s-selectional difference between control and ECM constructions. The former is specified as [+Tense] and the latter as [-Tense]. Martin (2001) ascribes this future-orientation of control *to*-infinitives to a modal-like element. It follows from these analyses that the control *to*-infinitives and the ECM ones should be distinguished not only syntactically but also semantically. Hence, we need to deal with the semantic characteristics of *to*-infinitival constructions as well as the syntactic ones.

Some syntactic analyses of *to*-infinitives in OE/ME are based on the c(ategorial)-selection and do not deal with the semantic property of *to*-infinitival complements (cf. Kageyama (1992) and Gelderen (1993)). However, as seen in this subsection, the s-selectional approach enables us to provide a syntactic analysis of *to*-infinitival complements based on their semantic property.

2.2. *The S-Selectional Property of the To-Infinitives in OE and ME*

It is generally observed that the control *to*-infinitival constructions appear in early OE, whereas the ECM ones are first attested in late ME (cf. Gelderen (1993), Miller (2002), among others). Observe the following:

- (2) Esau ðin broðor þe ðeneð *to ofsleane*
 Esau thy brother thee intends to kill

- ‘Your brother Esau intends to kill you’ (Gen 27.42: Los (1999:258))
- (3) a. ... he first bigan | *To riden* out
 ‘he first began to venture out’ (CT-P/1.44f.: Miller (2002:192))
- b. I have knowe vertu *to haue gon* out of me,
 ‘I have known virtue to have gone out of me’
 (Luke 8.46: WBible: Visser 2313: Gelderen (1993:61))

The example in (2) is the control *to*-infinitival construction in OE. The examples in (3a, b) are control and ECM *to*-infinitives in ME, respectively.

Now, let us examine the semantic properties of control and ECM *to*-infinitives in OE/ME. As surveyed in the preceding subsection, there is a semantic difference between control and ECM *to*-infinitives in PDE: The former is semantically ‘future-oriented’ ([+Tense]), while the latter is not ([–Tense]). In (2), the event time of the infinitive *ofslean* ‘kill’ is unrealized, i.e. future-oriented, with respect to the matrix verb *ðeneð* ‘intend’. As for (3a), Los (1999) suggests that the verb *bigan* ‘begin’ with *to*-infinitives focuses on ‘the onset of event’ and the action is temporally segmentable; therefore, *riden out* ‘to venture out’ in (3a), in some sense, contains the future-orientation in regard to the matrix verb.⁵ The *to*-infinitive in (3b), in contrast to the ones in (2) and (3a), is not future-oriented: The *to*-infinitival complement means that the subject *I* had lost virtue at some past time. In short, the semantic property of the *to*-infinitives in PDE was already observed in OE/ME *to*-infinitives (cf. Yoshida (2005)).

In sum, the control *to*-infinitival complements are diachronically [+Tense] and ECM ones are [–Tense]. The s-selectional property of the *to*-infinitives in OE/ME is the same as that in PDE.

2.3. The Temporal Property of the Control To-Infinitives

As observed in section 2.1, Bošković (1996) specifies the temporal property of the *to*-infinitives as [±Tense]. In this subsection, I deal with the substitution of the control *to*-infinitive for the subjunctive *that*-clause and examine the temporal property of control *to*-infinitives, i.e. [+Tense], more closely.

Los (2005) provides various OE data in which subjunctive *that*-clauses were substituted for *to*-infinitives, comparing two versions of *Gregory's Dialogue* (GD): The earlier version is *C* and the later one is *H*. The followings are examples in which this substitution is observed in the control-type complement:

- (4) a. forþon þe he gewilnode, þæt he *hæfde* lof & herenesse
 because that he desired, that he have glory and praise
 þæs clænan lifes
 of-the clean life

- ‘because he desired that he might have glory and praise for a clean life’
 (GD 8.117.30, C: Los (2005:181))
- b. forþam þe he gewilnode *to hæbbenne* þæt lof & herunge
 because that he desired to have the glory and praise
 his mæran drohtnunge
 his excellent conduct
 ‘because he desired to have the glory and praise for his excellent
 conduct’
 (GD 8.117.30, H: Los (2005:182))

In (4a), the earlier version, the verb in the subordinate clause *hæfde* ‘have’ shows the subjunctive inflection. Note also that in the later version (4b), the *to*-infinitival clause is substituted for the subjunctive *that*-clause in (4a).⁶ Los argues that this substitution allows us to analyze the *to*-infinitives in OE as clausal. That is, according to Los, the subjunctive *that*-clause in (4a) and the *to*-infinitive in (4b) belong to the same category, CP. In contrast to her c-selectional approach, it is, I argue, due to the semantic parallelism between the two constructions that this substitution is possible.

In PDE, too, we can find the substitution of the same sort in the control constructions, which is exemplified below:⁷

- (5) a. We persuaded her that she (should) take a rest.
 b. We persuaded her_i PRO_i to take a rest.

These examples show that both types of the complement have ‘future-orientation’, i.e. the subjunctive meaning. In *that*-clause, what carries this subjunctive meaning is the modal element (e.g. *should* in (5a)). It is reasonable to predict that the infinitival *to* and the modal element similarly serve as the subjunctive marker expressing the ‘future-orientation’ in the control-type complement.⁸

In brief, the fact on substitution can be observed diachronically in the control constructions; therefore, it seems safe to say that there is a semantic parallelism between subjunctive *that*-clauses and control *to*-infinitives from the diachronic perspective. As briefly observed in section 2.1, Bošković (1996) specifies the s-selectional property of control *to*-infinitival complements in PDE as [+Tense], i.e. future-oriented, while that of PDE *to*-infinitives of the ECM-type is identified as [–Tense], i.e. propositional. I observed in Yoshida (2005) that this s-selectional property [±Tense] of respective types of *to*-infinitives is preserved diachronically. However, in this paper, I specify this s-selectional property of *to*-infinitives as [±Subjunctive], corresponding to [±Tense] in Bošković’s (1996) terms.⁹ Here, the word ‘subjunctive’ stands for the potentiality or prospectivity for some future event, which is expressed by the modal auxiliary in subjunctive *that*-clauses. According

to Martin (2001), this ‘future-orientation’ of control *to*-infinitives is represented by a modal element most closely corresponding to *would*.

3. The S-Selectional Approach to the Structure of *To*-Infinitives

In the previous section, I observed that the specification of the s-selectional property of *to*-infinitival complements remains unchanged. This section deals with Stowell’s (1982) analysis of *to*-infinitives in PDE and examines the specification of the semantic property of control and ECM *to*-infinitives. I also provide a possibility of a reduction of the s-selectional property to the syntactic analysis of *to*-infinitival constructions.

3.1. Stowell (1982)

Stowell (1982) brings up the temporal property of the infinitival control complements, ‘future-orientation’, and argues that their uniform tense is determined internally, i.e. specified in themselves. In contrast to the control complements, the infinitival ECM complements do not have a regular internally-specified ‘unrealized’ tense. Instead, the tense of these complements with respect to the tense of the matrix verb is determined externally, i.e. specified by the semantics of the governing verb. The examples cited from Stowell are as follows:

- (6) a. John tried to lock the door. (Stowell (1982:563))
 b. John convinced his friends to leave. (Stowell (1982:564))
 (7) I remember John to be the smartest. (Stowell (1982:566))

Sentences (6a, b) are both the sentences of the control infinitival complements, and example (7) exhibits the ECM infinitival complements. The time frame of the both infinitival complements in (6) is *unrealized*, whereas that of the infinitival complement in (7) is understood as past (cf. sentence (ii) in fn. 8).

In addition, Stowell points out the parallelisms between control *to*-infinitival and finite *that*-clauses: Both clauses are S’, i.e. CP, which has a clause-internal COMP position, and they contain a tense operator which fixes the time frame of the complement clause relative to the tense of the matrix verb.¹⁰ On the basis of these parallelisms, Stowell argues that the tense operator appears in the COMP position in order to take scope over the whole complement clause at LF. He analyzes the infinitival structures of the control and ECM complements as S’ (CP) and S (TP), respectively, in terms of some rationales (e.g. Case-assignment).¹¹ He makes a direct correlation between the syntactic structures and the internal/external tense interpretation, concluding that the tense operator, which internally specifies the tense in the infinitival control complements, appears in the COMP position.

3.2. *Some Remarks on the S-Selectional Approach to the Diachronic Analysis*

In section 2, I surveyed that the s-selectional property of the *to*-infinitival complements stays unchanged since OE, and also briefly observed that only the control *to*-infinitival complements with ‘future orientation’ are attested in OE.¹² Therefore, we need the analysis that accounts for the temporal property (cf. Stowell (1982)).

As noted by Stowell (1982), the temporal relation between the matrix verb and the infinitival verb is reflected in the difference of the syntactic structures between the infinitival control complements and the infinitival ECM complements. This proposal, by definition, forms a foundation of the s-selectional approach to the syntactic structures of *to*-infinitival complements: The matrix verbs s-select the infinitival complements with or without a certain temporal interpretation.

The notion ‘s-selection’ is dependent on the main verb to a great extent: The matrix verb selects its complement on the basis of what type of the semantic content it requires. Following the observation in section 2.3 (cf. Stowell (1982)), I assume here that the infinitival complements of control-type verbs are internally specified as [+Subjunctive], whereas those of ECM-type verbs as [–Subjunctive]. It should be noted that the s-selectional property, [–Subjunctive], means that the ECM infinitival complements lack the *internal* specification of ‘future-orientation’, not the time reference itself. The temporal property of ECM infinitival complements is specified externally, i.e. specified by the requirement of the matrix verb. In other words, the ECM-type verbs take the complement to which they can give a specification of tense.¹³

Some linguists provide c-selectional analyses of *to*-infinitival complements in OE and ME, assuming that T-position available for infinitival *to* is first attested in late ME, not in OE (cf. Kageyama (1992), Gelderen (1993)).¹⁴ That is, this c-selectional approach is based on the assumption that T-position is absent in OE. However, their analyses do not make mention of the temporal property of control *to*-infinitives in OE, and we need to give an explicit explanation.

As briefly mentioned just above, some c-selectional analyses of *to*-infinitives disallow the availability of T-node. However, as noted through the paper, the s-selectional property of the *to*-infinitival complements is closely related to their tense interpretation. More specifically, the tense specification of control *to*-infinitival complements is determined internally, whereas in the ECM *to*-infinitival complements, their temporal property is specified externally. Given the fact that the temporal interpretation of control *to*-infinitival complements is determined internally, their tense specification should be made within the infinitival

complements themselves. In terms of the clausal status of *to*-infinitives, the temporal property of the whole infinitival clause s-selected by the control-type verbs should be internally specified (cf. Stowell (1982)). In this s-selectional approach, in contrast to the c-selectional one based on the absence of T-node, it is much more likely that T-node is necessary for the clause-internal specification of tense as [+Subjunctive].

3.3. *Against the C-Selectional Approach*

Given the observation about the internal specification of the semantic property, i.e. [+Subjunctive], in the *to*-infinitival control complements in OE/ME is on the right track, we can successfully solve the problem that arises from the c-selectional analysis: How the semantic property of OE/ME control *to*-infinitives should be dealt with. The c-selectional analysis assumes the unavailability of T-node. The clause-internally specified tense of the infinitival clause relates directly to its temporal interpretation, and therefore, T-position is absolutely necessary in the structure of control complements in order to give a structural explanation to this temporal specification. In this respect, a suggestive analysis is provided by Stowell (1982). He analyzes that the control *to*-infinitival complements are CPs, and also argues that the tense operator appears in the C-position at LF in order to take scope over the whole *to*-infinitival clause, which establishes the correct temporal interpretation. Apart from whether the temporal element is required to move to C for taking scope over the whole infinitival clause or not, the element related to the clause-internal temporal interpretation, i.e. [+Subjunctive], is required to be located in T-position.¹⁵

From the diachronic perspective, it is their temporal interpretation property that is related to the s-selection of *to*-infinitival complements; and therefore, it is required to locate the s-selectional property syntactically, i.e. the temporal specification as [+Subjunctive]. In PDE, it is generally assumed that the temporal interpretation property is located in T-position. For that reason, on the basis of the s-selectional approach, I assume a null hypothesis that the s-selectional property involved in a temporal interpretation is positioned in T and interpreted in that position. As for the analysis of *to*-infinitives in OE based on the c-selectional approach, it is unpredictable what the internally-specified semantic property (i.e. 'future-orientation') of *to*-infinitival control complements should be attributed to, and consequently their internal temporal specification is not interpreted, because this approach assumes the unavailability of T-node in OE. In contrast, under the s-selectional approach, its temporal property is successfully interpreted. Hence, the s-selectional approach has an advantage over the c-selectional one.

4. Summary

In this paper, I have briefly surveyed the s-selectional property of *to*-infinitival complements from the diachronic perspective, and subsequently I presented a cogent argument against the c-selectional analysis which assumes the absence of T-node until early ME. T-position is diachronically required for the sake of the temporal interpretation of the infinitival complements. Unlike the c-selectional approach, the s-selectional one makes possible the diachronically unified analysis.

NOTES

* I am indebted to the following people for helpful comments on this paper: Masaru Kanetani, Yurika Kambe, Ken-ichi Kitahara, and Keiko Kifuku. My deep gratitude goes to Hiroyuki Iwasaki for useful discussions. Any remaining errors and shortcomings are of course my own.

¹ The control type of *to*-infinitives is further divided into two groups. One is the ‘subject control’, as in (ia, b), and the other is the ‘object control’, as in (ii):

- (i) a. John_i tried [PRO_i to win]. (= (1a))
 b. John_i promised Mary [PRO_i to go there].
 (ii) John persuaded Mary_i [PRO_i to take a rest].

The subject *John* in (i) and the object *Mary* of the matrix verb in (ii) control the infinitival subject PRO, respectively.

This paper, however, makes little reference to this subdivision, because both types of the control *to*-infinitives are considered to have the same s-selectional property. For their detail semantic property, see section 2.

² Los (1999, 2005) makes reference to the θ -roles in accounting for the historical innovation of the *to*-infinitives.

³ Bošković analyzes both control and ECM *to*-infinitives as TP, as shown in (ia) and (ib), respectively:

- (i) a. John tried [_{TP} PRO to win]. (= (1a))
 b. John believed [_{TP} him to be innocent]. (= (1b))

However, Iwakura (1997) makes the counterargument to this s-selectional approach and provides a c-selectional one. For details, see Iwakura (1997).

⁴ Assuming that modals which can have various interpretations differ from pure tense, Martin (2001) suggests that control *to*-infinitives contain some sort of tense-like element.

⁵ Comparing the *to*-infinitive with the bare infinitive as the complement of the verb *bigan* ‘begin’, Los (1999) argues that *bigan* with the former focuses on ‘the onset of event’ and the one with the latter on ‘the realization’. Miller (2002), following Los’s argument, provides an

explanation for the following examples:

- (i) a. *Bigan to Venus temple for to gon*
 ‘began to go to Venus’ temple’ (CT 1.2272: KT 1414: Miller (2002:192))
- b. ...oure Hoost bigan his hors *areste*
 ‘our host began stopping his horse’ (CT-P/1.827: Miller (2002:192))

Bigan ‘begin’ is used with the *for to*-infinitive in (ia) and with bare infinitive in (ib). In (ia), *bigan* borders on ‘set out’ and *for to gon* signals the program of the action, i.e. the program of going (to Venus’ temple). In contrast, the action of *areste* ‘stopping’ in (ib) begins immediately and is not segmentable from that of *bigan*.

⁶ Los (2005) provides some further examples of this substitution. One such example is given below:

- (i) a. ...to þon þat heo *mihte* sum dæl hwætes on geclænsian
 ...to that that she might some quantity of-wheat in clean.
 ‘... in order that she might clean some wheat in it.’
 (GD 1.96.31, C: Los (2005:185))
- b. ...to *feormianne* summe dæl hwætes
 ...to clean some quantity of-wheat
 ‘... to clean some wheat’ (GD 1.96.31, H: Los (2005:185))

The examples in (i) show that the substitution can be seen in the purposive adjuncts. Thus, such substitution is not peculiar to the control infinitival construction.

⁷ Interestingly, a similar substitution can be observed in the purposive adjuncts:

- (i) a. He studied hard in order that he might become a lawyer.
 b. He studied hard in order to become a lawyer.

In (ia, b), the subjunctive *that*-clause and the *to*-infinitival clause function as the purposive adjunct, respectively.

⁸ Unlike in the case of the control-type complements, *to*-infinitival complements of the ECM-type do not exhibit the subjunctive meaning, i.e. ‘future-orientation’, as Bošković (1996) observes. This is illustrated by the following examples of substitution:

- (i) a. I believe that he is honest.
 b. I believe that he will be honest.
- (ii) I believe him to be honest.

Sentence (ii) is a substitution for sentence (ia), not for sentence (ib). That is, in PDE, *to*-infinitives as the ECM-type complements do not have the subjunctive meaning.

As for the ECM-type complements in OE, such a substitution is not attested, because in OE, *to*-infinitives occur only in the control constructions which contain ‘future-orientation’ (cf. Yoshida (2005)). However, Miller (2002) gives an example in which an ECM infinitival complements in Latin is translated into OE with *that*-clause. Consider the following:

- (iii) a. putāvērunt (eum) phantasma esse
 ‘they thought (him) to be an apparition’ (Mat. Mark 6.49; Miller (2002:174))
- b. hī wēndon þ hit unfæle gāst wære
 ‘they thought (that) it was an evil spirit’ (Gosp: WS₁; Miller (2002:174))

The example in (iiia) is the original Latin text, and example (iiib) is its translation into OE. Neither clausal complements in (iii) denote ‘future-orientation’. That is, in OE, *that*-clause complements of ECM-type verbs do not have a subjunctive meaning.

⁹ This paper employs the notation [\pm Subjunctive] in terms of the substitution between *to*-infinitival and subjunctive *that*-clausal complements. Additionally, the notation [$-$ Tense] seems to be somewhat misleading because it may imply that the infinitival ECM complements have no time reference.

¹⁰ For details, see Stowell (1982).

¹¹ In the standard framework in the 1980s (Chomsky (1981a, 1986a, 1986b)), it is assumed that the control-type verbs c-select S’ (CP) and the ECM-type verbs S (TP). Within the framework, *to*-infinitival complements are analyzed as follows: In (ia), the matrix verb *try* c-selects CP complement, whereas *believe* in (ib) TP complement:

- (i) a. John tried [_{CP} [_{TP} PRO to win]].
 b. John believed [_{TP} him to be innocent].

In short, it is analyzed that the difference in types between control and ECM *to*-infinitival constructions is reflected in the syntactic status of their complement.

¹² This temporal directionality of *to*-infinitival complements in OE is compatible with the general assumption that the infinitival *to* derives from the prepositional *to*. In fact, the prepositional *to* exhibits such a directional property:

- (i) and hi ealle anmodlice þone eadigan cuðberhtum *to biscope* gecuron
 ‘and they all unanimously elected the blessed Cuthbert bishop’
 (ÆCHom II, 10 88.242; Los (2005:197))

In this example, the prepositional phrase *to biscope* ‘to bishop’ implies the subsequent occurrence of the action *gecuron* ‘elect’; that is, *cuðberhtum* ‘Cuthbert’ was elected to become a *biscope* ‘bishop’.

¹³ The ECM-type verbs can take the infinitival complements with the s-selectional property [+Subjunctive] due to the requirement of the matrix verb, i.e. external specification. An example of the ECM-type *to*-infinitive identified as [+Subjunctive] is given below:

- (i) I expect John to win the race. (Stowell (1982:566))

In (i), the time frame of the infinitival complement is *unrealized* with respect to the matrix verb *expect*.

¹⁴ This assumption is based on the observation that there is no evidence that shows that infinitival *to* is located in T in OE and early ME. For details of the argument about the absence of

T-node and summary of the analyses, see Yoshida (2005).

¹⁵ In PDE, the overt/covert modal auxiliary in the subjunctive *that*-clause, e.g. *should* in (5a), is analyzed to be located in T-position.

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