Explaining Grammatical Variation and Change

-- A Case Study of Complementation of the Adjective Accustomed in the 1920s and the 2000s

Chunli Ding[a], Xiaotong Chen[b]

Beijing Forestry University, Beijing, China

[a]m17835060797@163.com, [b]1113279770@qq.com

Abstract

This paper examines sentential complements of the adjective accustomed involving subject control in the 1920s and the 2000s on the basis of the TIME Magazine Corpus. Two specific principles are identified to explain the argument structure properties of accustomed. The first is the role of extractions, which is shown to have played a significant role in the 1920s in favor of to infinitives. The other principle is semantic, yet no definitive explanation has come out of that hypothesis.

Keywords

To Infinitives; To –Ing Complements; The Extraction Principle; The Great Complement Shift.

1. Introduction

It is clear that in Old English the word *to* linking infinitives was a preposition. In recent English, however, the infinitive has drifted from a "nominal to a verbal character," and the drift is "now virtually complete," as Denison (1998: 266) puts it. Denison also states that the drift also involves the "concomitant dissociation of the infinitive marker *to* from the homonymous preposition" (Denison 1998: 266). This paper adopts Denison's basic view of the analysis of *to* infinitives, and treats the word *to* as homonymous in current English. The term "infinitive marker" implies that the word in question is a "marker", without meaning. This paper doesn't share Denison's view on that account. In his later research, he argued that although *to* is placed under the under the Infl - or Aux - node does not mean that it is devoid of meaning. On the contrary, it may carry a meaning.

As for the *to* that proceeds *-ing* clauses, or gerunds, this paper follows the consensus in the literature that it is prepositional. Therefore, after distinguishing infinitival *to* from prepositional *to*, it is clear how the latter behaves: similar with other prepositions, prepositional *to* co-occurs with -ing forms, or gerunds, rather than with infinitives. To illustrate what has been discussed above and to introduce some of the assumptions that are investigated in this paper, it is helpful to consider sentences (1a-b) from the Corpus of Contemporary American English, the COCA:

a. Sen. Kirsten Gillibrand (D-N.Y.), whose presidential campaign will seek **to harness** the energy of the #MeToo Movement…

b. I usually resort **to filling** a frozen grocery store pie crust and slapping a second crust on top…

The pattern of (1a) is an instance of the *to* infinitive pattern, and that of (1b) is an instance of the *to -ing* pattern. In the *to -ing* pattern, the *-ing* form is a gerund. Once it is accepted that there are two types of *to* in recent English, it is quite interesting to look into the variation affecting the use of the two patterns in recent English.

It is assumed that the complement after *to* in both patterns of (1a) and (1b) is sentential, with an implicit subject of its own. This is a controversial assumption to make, but many grammarians have made it. Among such grammarians is Otto Jesperson, who wrote:

Very often a gerund stands alone without any subject, but as in other nexuses (nexus substantives, infinitives, etc.) the connexion of a subject with the verbal idea is always implied. (Jespersen [1940] 1961:140)

Besides, an understood subject provides a convenient representation of the subject of *harness* and *fill*. In both (1a) and (1b), the higher predicates, *seek* and *resort* assign a theta role to their subjects. Thus both (1a) and (1b) are control structures. This paper follows Rudanko's postulation of an understood subject argument and treats the control properties of (1a) and (1b) as involving subject control. And he employs the symbol PRO in syntactic brackets to represent the understood subjects of (1a) and (1b) (Rudanko 2010). Then (1a) and (1b) could be represented as (1a') and (1b').

a.' [[whose presidential campaign] $_{NP}$ will [seek] $_{Verb1}$ [[PRO] $_{NP}$ [to] $_{Infl}$ [[harness] $_{Verb2}$ the energy] $_{VP}$ of the #MeToo Movement] $_{S2}$] $_{S1}$

b.' [[I] $_{NP}$ usually [resort] $_{Verb1}$ [to] $_{Prep}$ [[[PRO] $_{NP}$ filling a frozen grocery store pie crust] $_{S2}$ $_{NP}$] $_{S1}$

As demonstrated, there are obvious syntactic differences between the *to* infinitival pattern of (1a) and the *to -ing* pattern of (1b). However, in spite of such differences, some verbs, adjectives and nouns have displayed changes between the two patterns over recent centuries. This paper concerns with one adjective of this type, the adjective *accustomed*, and focuses on variation and change affecting the argument structure of this adjective in structures involving subject control.

The literature investigating the adjective *accustomed* and its argument structure with special reference to sentential complements involving subject control is in large quantities. Göran Kjellmer's (1980) study of *accustomed* stands at the pioneering position. This paper follows the footsteps of Rudanko (1999: 9-10), Rudanko (2000: 90-91), Vosberg (2003: 314-315), Rohdenburg (2006: 154-155), Rudanko (2006), Rudanko (2007) and Rudanko (2010). The developing course of sentential complements of the adjective *accustomed* in recent centuries is quite clear. In the eighteenth and nineteenth century, *to* infinitive complements predominates over *to -ing* complements in both British and American English. Nonetheless, tokens of *to -ing* complements have been found in the nineteenth century in both American and British English (Rudanko 2006). Previous work has shown that in current English *to -ing* complements of the adjective *accustomed* have come to predominate over *to* infinitive complements.

This paper will look into sentential complements of the adjective *accustomed* involving subject control from the 1920s and the 2000s on the basis of the *TIME* Magazine Corpus developed by Beijing Foreign Studies University with the purpose of a possible promotion of the study of factors involved in the Great Complement Shift. The BFSU CQPweb was set up by Mr. Liangping Wu and maintained by Dr. Jiajin Xu and Mr. Liangping Wu of the National Research Centre for Foreign Language Education, Beijing Foreign Studies University, China. This is a corpus of around 196 million words that ranges the time from 1923 to 2008.

The *TIME* Magazine corpus from the year 2000 to 2008 comprises issues between January 1, 2000, and August 4, 2008. The search string chosen for this investigation is simply *accustomed*. An alternative would have been to look for *accustomed* in the form of *accustomed to* and *accustomed to -ing*, but this research takes an interest in the overall frequency of the adjective for the better half of first decade of the 21st century. It also eliminates any mistakes in tagging by using the simple search string.

There are 146 tokens of *accustomed* retrieved by the search string from the year 2000 to 2008, which represents a frequency of 0.74 per million words, compared with 230 tokens of

accustomed retrieved by the search string from the year 1990 to 1999, representing a frequency of 1.17 per million words, 342 tokens retrieved from 1980 to 1989, representing a frequency of 1.74 per million words, 315 tokens retrieved from 1970 to 1979, representing a frequency of 1.61 per million words, 363 tokens retrieved from 1960 to 1969, representing a frequency of 1.85 per million words, 307 tokens retrieved from 1950 to 1959, representing a frequency of 1.57 per million words, 288 tokens retrieved from 1940 to 1949, representing a frequency of 1.47 per million words, 415 tokens retrieved from 1930 to 1939, representing a frequency of 2.12 per million words, and 187 tokens retrieved from 1920 to 1929, representing a frequency of 0.95 per million words.
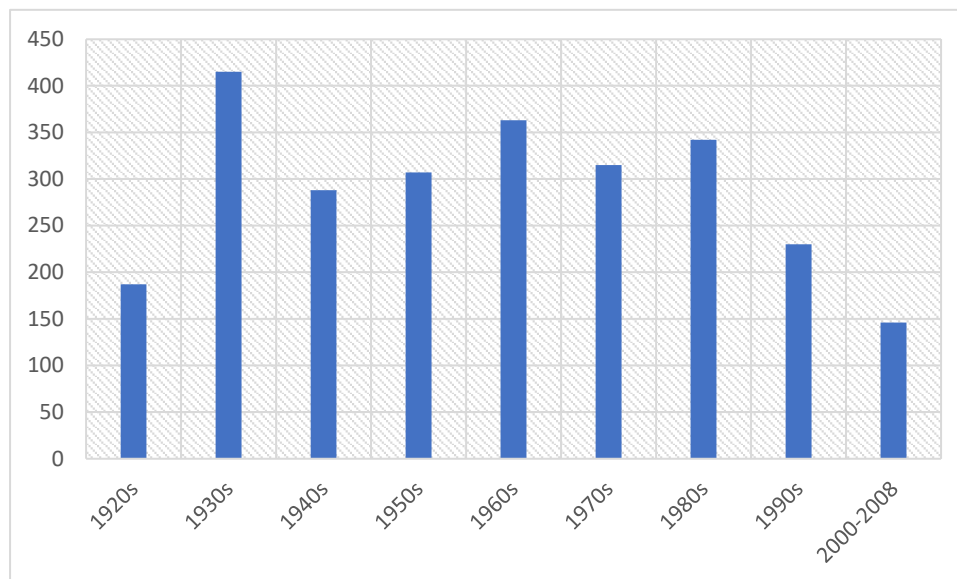
Figure 1. The Amounts of Tokens of *Accustomed*

It's quite clear that the overall usage of *accustomed* is going down as the year grows, probably because of the popularity of the phrase *be used to*.

2. Sentential Complements of Accustomed in the 1920s

There are altogether 187 tokens of accustomed retrieved by the search string [accustomed], which represents a frequency of 0.95 per million words. Of the 187 tokens, 81 are relevant to this study in that in them accustomed is used as an adjective that selects a sentential complement in a construction that involves subject control. This represents a frequency of 0.41 per million words. As to those 106 tokens that are not directly relevant to this investigation, 5 of them are verbs. The verb *accustom* is not frequent in the language, but the researcher must be aware of such uses. For instance, consider (2). (The date in the brackets the date of publication in the TIME Magazine Corpus.)

As the eye accustomed itself to the religious dim, it caught the gleam of many a fair garment. (1925)

There are also uses of the adjective *accustomed* that are not directly relevant to the present investigation. For example, 32 tokens of *accustomed* are found as a premodifier inside of an NP, as in (3).

Last week they opened their Sunday concerts not in their accustomed Aeolian Hall but in Mecca Auditorium. (1925)

Premodification structures of the type of (3) are frequent in the material, but they can be set aside in the study of the complementation patterns of adjectives. The adjective *accustomed* may also be found with *to* NP complements, as in (4).

[I]n general white men, after they have become accustomed to the omission of other foods from their diet, may subsist on an exclusive meat diet in a temperate climate without damage to health or efficiency. (1929)

In (4) the complement of *accustomed* is non-sentential, and the construction is not directly relevant here, given the focus of the present study on sentential complements involving subject control. However, in (4) the *to* is undoubtedly a preposition, just as the *to* in *accustomed* –ing complement structures.

Other than those exclusions made above, there are 81 tokens of the adjective accustomed selecting sentential complements involving subject control in the material. Table 1 gives information on the frequencies of the two patterns.

Table 1. To Infinitive and to –ing Complements of *Accustomed* in the 1920s

	Raw Frequency	Rate of Frequency
to infinitive	53	58.88%
to –ing	37	41.11%
Total	90	1

In this period, *to* infinitive clauses are still more frequent than *to –ing* clauses as complements of *accustomed*. However, *to –ing* complements are not far behind *to infinitives* in frequency, and the corpus represents a database where both types of complements are fairly frequent. Given what we know about the Great Shift of Complement happened to the adjective *accustomed,* it is possible to say that the 1920s was a time when there were many factors affecting variations in its sentential complements, although it might not be possible to find out all the factors that predict the form of complements in the 1920s. It is nevertheless interesting and necessary to probe at least one or two factors that may have affected the choice of complement in the case of *accustomed*. This paper considers two of them, one syntactic, the other semantic.

The syntactic factor considered is the role of extractions, which is a factor that has already been investigated in previous researches. Uwe Vosberg, in particular, has provided a formulation of the way extractions affect the choice between infinitival and *-ing* clause complement options when a head may select both:

The Extraction Principle

In the case of infinitival or gerundial complement options, the infinitive will tend to be favoured in environments where a complement of the subordinate clause is extracted (by topicalization, relativization, comparativization, or interrogation etc.) from its original position and crosses clause boundaries. (Vosberg 2003: 308)

Later, Rudanko (2006, 2007) makes the case that the principle above concerns with the extraction of a "complement of the subordinate clause." Extractions in English, however, are not restricted to extractions of complements. Instead, adjuncts are likewise often extracted. Therefore, he proposes that the Extraction Principle should be broadened to include the extraction of adjuncts. Thus, this broader view of extractions is adopted here:

The Extraction Principle, Modified

In the case of infinitival or gerundial complement options, the infinitive will tend to be favored in environments where a constituent of the subordinate clause is extracted (by topicalization, relativization, comparativization, interrogation, etc.) from its original position and crosses clause boundaries. (Rudanko, 2009)

The Extraction Principle, in both its original and its modified versions, can be linked to a difference between infinitival and *-ing* clauses with respect to sententiality and complexity. While *-ing* clauses are sentential complements, they are less sentential than infinitival complements, as originally discussed in detail by Ross (1973). It is therefore also possible to say that the infinitival complements are more explicitly sentential than *-ing* complements. This property can then be linked to a principle formulated by Rohdenburg (1996), the Complexity Principle, for which he provides independent motivation:

The Complexity Principle:

In the case of more or less explicit grammatical options the more explicit one(s) will tend to be favoured in cognitively more complex environments. (Rohdenburg 1996: 151)

An extraction context is a cognitively more complex environment than a canonical, non-extraction context. The tendency for a more explicitly sentential complement to be favored over a less explicitly sentential complement in such a context therefore follows Rohdenburg's Complexity Principle.

Regarding the frequency of extractions with *accustomed*, Rudanko (2006) suggests that they might be expected to occur with a frequency of approximately 10 percent. In the present material, though, the frequency of extractions is in fact 16.67%, higher than the benchmark figure. There are altogether 15 sentences involving an extraction in the material. Table 2 gives information about the two types of complements in such extraction contexts. The term canonical is used to refer to non-extraction contexts.

Table 2. To infinitive and to –ing Complements in Canonical and Extraction Contexts in the 1920s

	to Infinitive		*to -ing*	
	Raw Frequency	Rates of Frequency	Raw Frequency	Rates of Frequency
Canonical	43	81.13%	32	86.49%
Extraction	10	18.87%	5	13.51%
Total	53	1	37	1

It is quite obvious from the figures in Table 2 that it seems that the Extraction Principle is indeed a relevant factor.

Here are some examples of those sentences that are in extraction contexts. A token of a *to –ing* complement is given in (5). Two illustrations of *to* infinitive complements are given in (6a-b).

For most people, however accustomed they have become to seeing streets thronged with such swift and glittering vehicles, the automobile still seems, in a somewhat profound sense, new. (1928)

a. The spectator is led into a Cape Cod homestead, from which the brawny husband has been accustomed to absent himself for brief infidelities. (1928)

b. Dagny Kielland was unable to find in Nagel any of the well rubbed familiar surfaces, common to all men, by which people are accustomed to identify, if not to understand, other people. (1927)

The above three illustrations are all of Relativization, which is the most frequent extraction context in the case of complements. Overall, extractions seem to be an important factor affecting the choice of sentential complement with *accustomed* in American newspaper and magazine English in the 1920s.

The other factor about to be examined here is of a semantic nature. Bolinger's Principle says that a "difference in syntactic form always spells a difference in meaning" (Bolinger 1968: 127). Also, there's the comment made by the Dutch grammarian H. Poutsma comparing the two types of complement:

The infinitive construction is, presumably, rather more common than the gerund construction, and appears to be used to the exclusion of the latter when mere recurrency of an action or state, without any notion of a habit or custom, is in question. (Poutsma, s.v. accustomed)

Since he published the second edition of his grammar in 1929, so it might be possible that the above comment was written sometime after 1929. Therefore, it might reflect the variation found in the current material. Rudanko further makes the comment that with a *to -ing* complement the adjective "conveys the sense of 'be used to', with the complement of the adjective expressing a regular situation" (Rudanko 2006: 39). As for *to infinitive* complements,

The sense of the adjective may be close to that of 'tend', with the complement of the adjective expressing a regular practice. There may thus be more of a sense of choice on the part of the referent of the matrix subject in the case of the *to* infinitive complement than in the case of the *to -ing* complement. (Rudanko 2006: 39-40)

Rudanko designates a subject that involves a sense of choice as [+Choice] and a subject that involves lack of choice as [-Choice] for the sake of terminology. The same marks are also applied to the predicates that assign the readings in question.

Since both *to* infinitive and *to -ing* complements of *accustomed* are patterns of subject control, the referent of the higher subject is the same as the referent of the lower subject. The predicate of the lower clause in this research of accustomed is in fact complement of *accustomed*. The semantic role of the lower subject is judged from the predicate of the lower clause. Therefore, one has to focus on the semantic role of the lower subject. To put it more directly, Rudanko (2006) hypothesizes that a [+Choice] lower subject tends to go together with a *to* infinitive complement and a [−Choice] lower subject tends to go together with a *to -ing* complement.

A [+Choice] lower subject is quite similar with the concept of an agentive semantic role because choice implies that there is volition and volitional act involved. And Dowty (1991) has come up with "Agent-Proto-Role" (p. 572) and "volitional engagement in the event or state" is an important feature of it.

Here are more examples from the corpus:

a. German editors last week reminded their readers that agents of Der Konsul were once not only accustomed to throw bombs and assassinate their political opponents, but also did not hesitate to slit the gullet of any of its own members who were " untrustworthy. (1929)

b. Spain's richest and most potent families have been accustomed to send at least one son to the Artillery Academy. (1929)

c. Smart Parisian children are accustomed to behold at the Chatelet Theatre entrancing "fairy spectacles" called feeriques. (1928)

The predicates of the lower clauses in (7a-c) are *throw bombs and assassinate their political opponents*, *send at least one son to the Artillery Academy* and *behold at the Chatelet Theatre entrancing "fairy spectacles" called feeriques*. The three cases all entail predicates that imply an event or a situation and the subjects of the predicates are agentive and [+Choice]. One can tell from the predicates that their respective subjects displaying "volitional engagement in the event or state", as Dowty put it.

Previous scholars and researchers have developed various linguistic tests that could be applied to agentive and [+Choice] subjects and predicates. The admissibility of imperatives is one test among them. As John R. Taylor put it:

Prototypically, an imperative instructs a person to do something, and is therefore only acceptable if a person has a choice between carrying out the instruction or not. (Taylor 2003: 31)

When one reads the lower predicates of (7a-c) bearing that in mind, it's quite easy to see that imperatives are readily conceivable with them, as in *Throw bombs and assassinate their political*

opponents! Send at least one son to the Artillery Academy! and *Behold at the Chatelet Theatre entrancing "fairy spectacles" called feeriques!*

By contrast, agentivity doesn't seem obvious with the Patient or Undergoer role. Let's see (8a-b):

a. He raised salaries that were accustomed to being reduced. (1929)

b. [T]he Anglicans are thoroughly accustomed to being a minority bloc in a Church. (1928)

The predicate of the lower clause of (8a) is *be reduced* and that of (8b) is *be a minority bloc*. The understood subject of *be reduced* is the object of the corresponding active predicate *reduce*, which represents the semantic role of Patient or Undergoer, expressing a low degree of agentivity. And they are marked [-Choice]. Imperatives also don't go well with the predicates: *Be reduced!* and *Be a minority bloc!*

The above discussion on the semantic factor doesn't necessarily proves Rudanko's hypothesis, but it does show some correlation between a [+Choice] lower subject and a *to* infinitive complement.

3.   Sentential Complements of Accustomed in the 2000s

Of the 146 tokens, 61 are relevant to this study in the sense that *accustomed* in those sentences is used as an adjective that selects a sentential complement in a construction that involves subject control. This represents a frequency of 0.31 per million words.

The incidence of the two types of complement is shown in Table 3.

Table 3. To Infinitive and to –ing Complements of *Accustomed* in the 2000s

	Raw Frequency	Rate of Frequency
to infinitive	1	1.64%
to –ing	60	98.36%
Total	61	1

The proportion of *to* infinitives in relation to *to -ing* complements has declined significantly over 8 decades. Here is the only token of *to* infinitive in (9) and two examples of *to -ing* complements in 10(a-b):

[T] hey have been accustomed to receive from the United States. (2004)

a. Her staff of 53, accustomed to reheating food from outside vendors for the 4,000 lunches, 1,500 breakfasts and 1,500 snacks served each day, is learning to make meals from scratch. (2006)

b. We may think we've grown accustomed to living in a predator-free environment in which most of the dangers of the wild have been driven away or fenced off. (2006)

The great shift from *to* infinitives to *to -ing* complements is clearly almost over. The *to* infinitive in (9) doesn't display extraction. Of the 60 *to -ing* complements, no extraction is found, either, which renders the examination of extractions in the 2000s moot.

Let's consider the semantic factor associating the *to* infinitive pattern with the encoding of a sense of choice and the *to -ing* pattern with lack of choice on the part of the referent of the lower subject. Although the quantity isn't enough for *to* infinitive to draw any conclusion, it's still interesting to look at the other 60 *to -ing* complements. Three have [-Choice] readings, and fifty-seven of them are with [+Choice] lower subjects, which indicates that the majority of [+Choice] cases are of *to –ing* complements in the 2000s. In comparison with the semantic principle applying in usage in the 1930s of the *TIME* Magazine Corpus, the semantic principle seems to

have lost its favor to *to -ing* complements. It's quite clear that the *to –ing* predominates with both [+Choice] and [-Choice] lower subjects.

In conclusion, the tendency of *to –ing* pattern coming to dominance is nearly finished in the 2000s, and the *to* infinitive pattern has almost disappeared with few remnants left in magazine American English.

4. Conclusion

This study has taken to examine the sentential complements of the adjective *accustomed* involving subject control in the 1920s and the 2000s, leaving a huge gap of years between them, in the purpose of testing whether the Great Shift of Complement is evident with the adjective *accustomed*. As it turns out, the Great Shift of Complement is quite finished, namely the complements to the adjective *accustomed* is now mostly *to –ing* complements, and it further implies that the time of the shift is between the 1920s and the 2000s.

In addition, this paper ventures to give explanations to the said grammatical change from a particular syntactic perspective and a particular semantic perspective. The syntactic perspective is the Extraction Principle. As it turns out, it does play a role in the variation between the two types of complements in the *TIME* Magazine material from the 1920s, in that *to* infinitives are favored as predicted by the principle. The other explanatory principle is semantic. A distinction is made between [+/–Choice], depending on the way in which the situation is implied by the lower clause selected by the adjective *accustomed*. The question investigated is whether it is plausible to associate each of the two types of complement with a particular type of lower subject and encoded context, namely either [+Choice] or [–Choice]. No definitive association can be established, but *to -ing* complements are linked to [–Choice] contexts, whereas *to infinitives* tend to go with [+Choice] contexts.

There are too many things left undone of this research and many perspectives left unexamined. First of all, I didn't find more than the afore-mentioned two perspectives. The literature investigating the Great Complement Shift surely embodies more principles like the Extraction Principle. Also, I only processed the statistics in the most basic way without even consulting the chi-square test or correlation indexes. Moreover, the current organization of my paper is the best I can come up with, seeing how disproportionate it is, because it seems that I'm constantly stopping to explain concepts and principles I didn't used to know nor understand.

References

[1] Andrew Hardie. 2012. CQPweb - combining power, flexibility and usability in a corpus analysis tool. IJCL 17(3): 380-409' and 'Jiajin Xu & Liangping Wu. 2014. Web-based fourth generation corpus analysis tools and the BFSU CQPweb case, Waiyu Dianhua Jiaoxue [Computer-assisted Foreign Language Education] (5).

[2] Bolinger, Dwight. 1968. Entailment and the meaning of structures. Glossa 2. 119-127.

[3] Denison, David. 1998. Syntax. In S. Romaine, ed., The Cambridge History of the English Language, Volume 4 1776–1997. Cambridge: Cambridge University Press.

[4] Dowty, David. 1991. Thematic proto-roles and argument selection. Language 67. 547-619.

[5] Jespersen, Otto. [1940] 1961. A Modern English grammar on historical principles. Part V: Syntax (Vol. IV). London: Allen and Unwin.

[6] Kjellmer, Göran. 1980. Accustomed to swim; accustomed to swimming: On verbal forms after TO. In Jens Allwood & Magnus Ljung (eds.), ALVAR: A linguistically varied assortment of readings. Studies presented to Alvar Ellegård on the occasion of his 60th birthday, Stockholm Papers in English Language and Literature, 175-190. Stockholm: Almqvist and Wiksell.

[7] Rohdenburg, Günter. 1996. Cognitive complexity and increased grammatical explicitness in English. Cognitive Linguistics 7. 149-182.

[8] Rohdenburg, Günter. 2006. The role of functional constraints in the evolution of the English complementation system. In Christiane Dalton-Puffer, Dieter Kastovsky, Nikolaus Ritt & Herbert Schendl (eds.), Syntax, style and grammatical norms, 143-166. Bern, Switzerland: Peter Lang.

[9] Ross, John Robert. 1973. Nouniness. In O. Fujimura (ed.), Three dimensions of linguistic research, 137-257. Tokyo: TEC Company.

[10] Rudanko, Juhani. 1999. Diachronic studies of English complementation patterns. Lanham, MD: University Press of America.

[11] Rudanko, Juhani. 2000. Corpora and complementation. Lanham, MD: University Press of America.

[12] Rudanko, Juhani. 2006. Watching English grammar change: A case study on complement selection in British and American English. English Language and Linguistics 10. 31-48.

[13] Rudanko, Juhani. 2007. Text type and current grammatical change in British and American English: A case study with evidence from the Bank of English Corpus. English Studies 88. 465-483.

[14] Rudanko, Juhani. 2010. Explaining Grammatical Variation and Change: A Case Study of Complementation in American English over Three Decades. Journal of English Linguistics 38, 4–24.

[15] Taylor, John R. 2003. Meaning and context. In Hubert Cuyckens, Thomas Berg, René Dirven & Klaus-Uwe Panther (eds.), Motivation in language. Studies in honor of Günter Radden, 27-48. Amsterdam: John Benjamins.

[16] Vosberg, Uwe. 2003. The role of extractions and horror aequi in the evolution of -ing complements in Modern English. In Günter Rohdenburg & Britta Mondorf (eds.), Determinants of grammatical variation in English, 305-327. Berlin: Mouton de Gruyter.