

# The Great Complement Shift and the role of understood subjects: the case of *fearful*

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**Abstract.** This article reports on a corpus-based study of diachronic change and constructional competition in the system of English complementation, with a focus on variation in non-finite complements of the adjective *fearful*. *Fearful* occurs with prepositional (*of -ing*) subject-controlled gerunds and with *to*-infinitives, which can further be distinguished into subject extraposition, subject control, and *tough*-constructions. Recent decades show a drastic decline of the *to*-infinitival patterns, concomitant to the loss of one of the senses of *fearful*.

We examine the diachronic distribution and competition of the two construction pairs that show functional overlap, i.e. *tough*-constructions and extraposition constructions on the one hand, and infinitival and gerundial subject control patterns on the other hand. This allows us to show the import of the Great Complement Shift in the face of constructional attrition, and to investigate new principles motivating the choice for either the *to*-infinitival or the gerundial subject control construction. More specifically, the study provides further evidence for the Choice Principle, which involves the (lack of) agentivity of the understood subject in the event described by the lower clause. In this way, the study adds new explanatory factors and descriptive insights to our knowledge of the broader diachronic change known as the Great Complement Shift.

**Keywords.** Great Complement Shift; *tough*-constructions, subject control, Choice Principle

## 1 Introduction and background

The co-existence of multiple complementation patterns with the same predicate, as in (1a–d), has attracted considerable attention in the literature on historical variation and change. It has been shown that the English system of complementation has witnessed considerable changes throughout its history, which in part explain the complex division of labour between different complementation patterns in present-day English. The non-finite patterns (first *to*-infinitives, and then gerunds) entered the clausal complementation system over the course of the Old and Middle English periods, thereby entering into competition with finite complement clauses and with each other (a.o. Los 2005; Fanego 2007). This two-step historical evolution, with *to*-infinitives first encroaching upon the territory of subjunctive finite clauses, and gerunds gradually replacing *to*-infinitives, formed the basis for the hypothesis of the ‘Great Complement Shift’ (Rohdenburg 2006; Vosberg 2006, Vosberg 2009; Rudanko 2012; Fanego 2016), i.e. the idea that these two broad shifts show that the English system of complementation is drifting towards maximal functional differentiation and economy in its expression forms. Specific contexts of occurrence have moreover been identified, e.g. *horror aequi* and cases of extractions (Vosberg 2003, Vosberg 2006; Rohdenburg 2016), which show a

strong preference for, or restriction to, one of the competing complementation patterns, and thereby halt or slow down the full replacement of one structure by another. This article aims to contribute to the line of research which examines the diachronic distribution and variation of such non-finite complement patterns in English. It will do so on the basis of a detailed case study of the non-finite complementation patterns that are selected by the adjective *fearful* over the course of the last two centuries, with attention paid to the role of the notion of agentivity as a factor influencing complement selection.

*Fearful* represents a particularly interesting case in this respect, in part due to the range of non-finite patterns selected by one and the same matrix predicate. In this introduction, we introduce the different types of non-finite complements of *fearful* that are investigated, and point out the importance of recognizing understood subjects in the lower clause when examining these construction types. Consider the sentences in (1a–d), all from COHA, the Corpus of Historical American English.

- (1) a. “David,” ... “*it is fearful to think of a thing like that.*” (1901, FIC)
- b. *Mob spirit is fearful to contemplate* (1929, MAG)
- c. *I was fearful to return* (1910, FIC)
- d. *Florine is especially fearful of going down these stairs.* (1925, FIC)

The sentences in (1a–d) show that the adjective *fearful* can select two types of non-finite complements. In (1a–c) the complement is a *to*-infinitive and in (1d) it is a prepositional gerund, which can be referred to as an *of-ing* complement.

With the *to*-infinitive, we can moreover distinguish different construction types, depending on the locus of co-reference relations between (a constituent of) the non-finite clause and the grammatical subject of the main predicate. In sentence (1a), the main clause subject is co-referential with the entire non-finite clause. In this construction the pronominal NP *it* is a formal subject, with the lower clause *to think of a thing like that* representing the conceptual subject of the higher predicate. This is traditionally referred to as a case of (subject) *extraposition*.<sup>1</sup> In the case of (1a), it is possible to formulate a so-called ‘non-extraposed’ counterpart, *To think of a thing like that would be fearful*.<sup>2</sup>

For its part sentence (1b) represents a *tough-construction*, in which the subject of the main clause is co-referential with the object of a predicate or preposition in the lower clause. In (1b), the higher subject *mob spirit* corresponds to the logical object of the lower verb *contemplate*; there is thus a gap in the object position of the lower predicate. The *tough-construction* in (1b) can be reformulated

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<sup>1</sup> Recent work has argued for the systematic recognition of two types of extraposition as part of one more schematic extraposition construction (Davidse and Van linden 2016). The first type, illustrated in (1a) above, involves predicative matrices and is often referred to as *it*-extraposition. The second type involves existential matrices, or *there*-extraposition, cf. example (i).

(i) *Let me begin again, for now the secret is told **there is no fear to keep out love.*** (COHA, 1864)  
We focus on *it*-extraposition in this article, since the main predicate *fearful* in itself is not attested in *there*-extraposition constructions.

<sup>2</sup> We use the term ‘extraposition’ to refer to the construction that has an ‘anticipatory *it*’ as syntactic subject, co-referential with a clause that is positioned after the main predicate. The construction had already been fixed in this form by the Early Modern English period (Allen 1995; Van linden 2012: 129–133), i.e. by the time *fearful* started to select non-finite complements. Our use of the term ‘extraposition’ is by no means intended to endorse the idea that extraposed clauses are derived from an ‘original’, non-extraposed variant.

as a sentence of the extraposition type (similar to (1a)): *It is fearful to contemplate mob spirit* is also well-formed. Indeed the rule of *tough*-movement was originally conceived of as operating on an underlying string of the extraposition type, as a “rule that takes a nonsubject NP out of an extraposed complement ... and substitutes it for the initial pronominal subject of the sentence as a whole” (Postal 1968: 27). While later formulations of *tough*-movement are often more abstract, Postal’s original rule served to link sentences of the type of (1a) and (1b). In the absence of a lower subject of the infinitive (cf. *me* in the *for...to*-infinitive in *It is fearful for me to contemplate mob spirit*),<sup>3</sup> the patterns in (1a) and (1b) share the property of having an arbitrary, or unspecified, implicit subject in the non-finite clause, cf. *It is fearful for anyone to contemplate mob spirit*.

The remaining sentences – (1c) and (1d) – represent two types of non-finite complements, viz. *to*-infinitives and *of -ing* complements, but at the same time they share a grammatical feature: in them the understood subject is co-referential with the higher subject in the matrix. It should be noted that the higher subject receives a theta role from the higher verb. (The understood subject in the lower clause is moreover assigned a theta role by the verb of that clause, and the role is not necessarily the same as that of the higher clause.) This property means that (1c–d) do not involve NP Movement, which would not involve the potential presence of two different thematic roles. Instead (1c) and (1d) illustrate *subject control constructions*, and their understood subjects may be represented with the symbol PRO. To set the basis for a detailed comparison of the two subject control constructions, it is appropriate to give basic bracketed structures for them. They are given as (1c′) and (1d′).

- (1) c.´ [I was [[fearful]<sub>Adj</sub> [[PRO]<sub>NP</sub> [to]<sub>Aux</sub> return]<sub>S2</sub>]<sub>AdjP</sub>]<sub>S1</sub>  
 d.´ [Florine was [[fearful]<sub>Adj</sub> [[of]<sub>Prep</sub> [[[PRO]<sub>NP</sub> going down these stairs]<sub>S2</sub>]<sub>NP</sub>]<sub>PP</sub>]<sub>AdjP</sub>]<sub>S1</sub>

The structure in (1d′) incorporates the traditional idea that a gerund may be represented as a nominal clause, that is, as a sentence dominated by an NP node. On the other hand, the lower clause in the infinitival structure in (1c) is not a nominal clause (and does not function as an NP). Another noteworthy feature of sentence (1c′) is that the infinitival marker *to* is under the Aux node. This is because post-auxiliary ellipsis of the type *You won’t do it, but I shall* is permitted in the infinitival structure as in *I will do it, but I am not anxious to* (see Warner 1993: 64; on the auxiliary-like behavior of infinitival ‘to’ cf. also Radford 1997: 53)<sup>4</sup>.

An analysis of the diachronic distribution of these patterns presents an interesting case study of the co-existence and competition of various non-finite clausal patterns over time. A study of the four different patterns allows us to consider the functional equivalence and/or differentiation among them, both for the extraposition and *tough*-constructions on the one hand, and for the two subject control constructions on the other. As was pointed out above, the former pair have in transformational grammar been argued to be inherently related, with one

<sup>3</sup> *To*-infinitives with an overtly expressed subject are introduced by the subordinator *for*, cf. Huddleston and Pullum (2002: 1178).

<sup>4</sup> While the present authors accept that infinitival ‘to’ is analyzed under the Aux node, they do not adopt the idea mentioned in Radford (1997: 54) that infinitival ‘to’ behaves like an affix in English, because it can be easily separated from its verb, as in *He was fearful to not return*.  
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construction type considered as a potential variant of the other. The latter pair, with an infinitival and a gerundial pattern that share the feature of subject control, show a similar functional overlap that makes them particularly apt for comparison.<sup>5</sup> The two pairs of non-finite complement types (i.e. extraposition and *tough*-constructions on the one hand, and infinitival and gerundial subject control constructions on the other) correlate with two distinct senses in the case of *fearful* - those of ‘causing fear, terrible’ and ‘being full of fear, afraid (to do something)’ respectively. For reasons set out below, we refer to these as the ‘external’ and ‘internal’ sense of *fearful* respectively. We will see that the first sense is increasingly lost in the 19th century, which paves the way for a more general decline in the use of *fearful* as an adjective taking non-finite complements.

While the extraposition and *tough*-constructions with *fearful* only occur with the infinitival pattern, the variation between the subject control patterns involves the choice between a near-equivalent infinitival or gerundial pattern, which makes any principle accounting for their distribution of relevance to the Great Complement Shift. The methodological principle underlying our comparison of the near-equivalent *of*-*ing* and *to*-infinitival pattern is what is sometimes called Bolinger’s Principle, that a “difference in syntactic form always spells a difference in meaning” (Bolinger 1968: 127).<sup>6</sup> We will show that the descriptive comparison of the two variants in authentic corpus data indeed lends support to such an explanatory principle, which may shed further light on the nature and meaning of the two non-finite constructions at a time of grammatical variation between them.

A central assumption made in this study is that in (1a–d) the non-finite construction is sentential and has its own understood or implicit subject. This is an assumption that is not shared by all linguists, and there are linguists who do not accept any understood constituents. However, Otto Jespersen made an observation that has been influential in work on infinitival and gerundial complements:

Very often a gerund stands alone without any subject, but as in other nexuses (nexus-substantives, infinitives, etc.) the connexion of a subject

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<sup>5</sup> Both variants with subject control are in fact cited under the same meaning of the adjective *fearful* in the *OED*. The gloss is under sense II. 3 and it is “frightened, timorous, timid, apprehensive”, and the *OED* specifically mentions both *to*-infinitives and gerunds introduced by *of*, as illustrated in (1c) and (1d) above, under the same sense. With the sense of *fearful* being the same or almost the same in these two patterns, a further analysis of the potential specialization of the two patterns is of interest to establish any difference in the nature of the two constructions.

<sup>6</sup> The basic idea in construction grammar that a construction is a pairing of linguistic form and meaning (Goldberg 1995: 1) seems conceptually related to Bolinger’s Generalization. In Goldberg (2006) the idea is developed further:

Any linguistic pattern is recognized as a construction as long as some aspect of its form or function is not strictly predictable from its component parts or from other constructions recognized to exist. In addition, patterns are stored as constructions even if they are fully predictable as long as they occur with sufficient frequency ... (Goldberg 2006: 5)

The present authors do not adopt all aspects of Goldberg’s approach – for instance, contrary to her approach, which she sums up as “what you see is what you get” (2003: 219, 2006: 10), we recognize a role for understood constituents (for reasons given below) and for movement rules in syntactic analysis (see the comments on the Extraction Principle below, compared to Goldberg (2013: 15)) – but we do accept the basic idea that constructions are pairings of form and meaning and regard it as an invitation to shed light on the semantics of each construction.

with the verbal idea is always implied. (Jespersen 1961 [1940]: 140)

Apart from this kind of argument appealing to a tradition, which might be called *ad verecundiam*, the postulation of an understood subject makes it possible to represent the argument structure of the lower verb in a straightforward fashion, with the external argument of the lower verb represented by the understood subject. However, the strongest evidence for the necessity of postulating an understood subject in infinitival and gerundial structures comes from Binding Theory (Landau 2013). (The essence of the argument goes back to pioneering work by Postal 1970, but nowadays it is appropriate to phrase it in terms of Binding Theory.) Many linguists would endorse the idea – Principle A of Binding Theory – that anaphors, including reflexives, need to be bound (see Radford 1997: 114–116). It follows therefore that provision needs to be made for an understood subject for instance in sentences of the type *Perjuring himself would not bother John*. This type of sentence is well formed, even though the reflexive, *himself*, cannot be bound by the expressed higher NP object, *John*. In this regard, postulating an understood subject in the non-finite clause *perjuring himself* means that that implicit NP can bind the reflexive, explaining the well-formedness of this type of sentence. We will show that the recognition of such understood subjects is directly relevant to the question of identifying explanatory principles underlying the diachronic division of labour between *to*-infinitives and *of* -*ing* clauses. More specifically, the two non-finite patterns will be shown to have different preferences with respect to the agentivity (or lack of it) of the understood subject in the event described by the lower clause.

The structure of this article will be as follows. In Section 2, we set out the methodology and data selection for this article. In Section 3, we examine the distribution of the various complement types over the course of the Late Modern English and present-day English periods, and discuss explanations for the attested variation. In Section 4, then, we sum up the conclusions that can be drawn from this study.

## 2 Methodology

“Complementation,” in the words of Noonan (2007: 101), “is basically a matter of matching a particular complement type to a particular complement-taking predicate.” The matching issue is especially acute when a lexical head selects more than one type of complement such that the complements are close to each other in meaning. This is the case with the extraposition and *tough*-constructions, as in (1a-b), on the one hand, and the two subject control constructions, as in (1c-d), on the other, and a focus on these pairs can be expected to yield information on the differences between the members of each pair, possibly relating to the meaning, processing or information structure of each alternant.<sup>7</sup> Going beyond the single adjective *fearful*, we also compare the findings to earlier work on semantically related adjectives (*afraid*, *scared*, *terrified*) and to the selection of constructional patterns by such adjectives of fearing more generally.

The data of the present investigation come from COHA and COCA, which make it possible to follow the four types of complements identified in Section 1

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<sup>7</sup> Cf. earlier work on *promise* (Egan 2006), *fail* (Egan 2010; 2016), and *admit* (Cuyckens and D’hoedt 2015), and the studies in Leech et al. (2009: 187-201).

decade by decade. As we focus on non-finite complements, we made use of the simple search strings “fearful to \_v?i\*” and “fearful of \_v?g\*”, which exploit the tags for infinitive verb forms (v?i\*) and for *-ing* forms (v?g\*). A number of trial searches showed that these search strings hardly excluded relevant data, while keeping the number of irrelevant tokens retrieved small.<sup>8</sup> Table 1 gives an overview of the size of the data set.

Table 1. Data sets from COHA (1810s–2000s) and COCA (1990–2017)

Corpus	fearful to _v?i*	fearful of _v?g*
COHA (1810s–2000s) c. 406 M words	138 hits (<2 irrelevant)	364 hits (<5 irrelevant)
COCA (1990–2017) c. 570 M words	47 hits (<1 irrelevant)	348 (<6 irrelevant)

The irrelevant tokens contain, besides instances that duplicate another token, instances in which *fearful* does not select a non-finite complement. This can be due to a mistagged NP complement, as in (3a), or to an adjectival use of the *-ing* form, as in (3b). In (3c), then, the *to*-infinitive complement functions as an argument of the matrix verb *warn*, rather than of the adjective *fearful*.

- (3) a. ***Fearful of nothing*** but the excess of his own passions (1848, MAG)  
 b. *He was also seized by doubt, worried by practical considerations and fearful of distracting temptations.* (1980, MAG)  
 b. *he halted them, and in a brief address **warned** all who felt at all fearful to go back.* (1970, MAG)

We have further set apart a special contextual type of *to*-infinitive, illustrated in (4).

- (4) a. *This line of inquiry is very difficult, and we've either been too lazy or **too fearful to follow it.*** (2003, ACAD)  
 b. *These were great, and, under the circumstances, fearful questions - **too fearful to be met** by those who had raised the agitation.* (1849, MAG)

The sentences in (4a–b) involve a construction where a *to*-infinitive is licensed by a degree modifier of the adjective *fearful*, rather than by *fearful* itself (Quirk et al. 1985: 66–67; Huddleston and Pullum 2002: 837). This analysis explains why an adjective such as *lazy* in (4a), which does not normally select a *to*-infinitival complement (cf. \**He was lazy to follow this line of enquiry*, cf. also \**He was tall to fit into his seat*), can do so when it is premodified by *too*. Huddleston and Pullum

<sup>8</sup> The main restriction imposed by these search queries is that the non-finite complement has to be directly adjacent to *fearful*, i.e. that there are no intervening elements between the predicate and the *to*-infinitive or gerund form. If we had included intervening constituents, this would mainly have added a few tokens in which the non-finite clause has an overt lower subject, as in the one *for-to*-infinitive in COHA in (i), and the *of-ing* form in (ii). Because of the particular interest of this study in the subject control constructions - which involve lower subjects that are covert - we did not include tokens with overt lower subjects in the data.

(i) *I'm fearful **for him** to die without the consolations.* (1956, FIC)  
 (ii) *Katie exerted her strength against him, fearful of **his hand** trespassing beyond the place it had chosen to rest* (2009, FIC)

refer to this type of *to*-infinitive as an “indirect complement with the form of an infinitival clause” (2002: 837), and point out that this construction has a particular meaning, referring to the non-realization of the state-of-affairs described in the infinitive. Thus, example (4b) involves questions that were ‘so fearful that they *could not* be met’, as (4a) involves people being ‘so fearful of the consequences that they were *not willing to* follow a line of enquiry’. Because such *to*-infinitives are not selected by *fearful* as the lexical head, and have separate formal and functional properties, they will be treated as a separate category of complement pattern in the tables and discussion below.

There are also three parentheticals of the type in (5) in the data. Due to their close resemblance to the extraposition data, these have been included in the latter category.

- (5) *Perpetual shuddering made him terrible. **Fearful to say**, he seemed to be a centre in space, with something immense.* (1833, NF)

We focus on data from the Late Modern and Present-day English periods because queries in (British English) corpora from earlier periods (the Helsinki Corpus, the Corpus of Early English Correspondence Sampler, or the Innsbruck Computer Archive of Middle English Texts Sampler) yielded too few relevant results to be discussed. Nonetheless, the use of *fearful* as a complement-taking adjective prior to Late Modern English will be relevant to the findings presented below. For this reason, we briefly describe earlier uses of the adjective with non-finite complement patterns here. The OED entry places the first uses of the adjective *fearful* in the course of the 14<sup>th</sup> century. The quotations in the MEC show that the first instances of *to*-infinitives (6a–b) and *-ing* forms (6c) can be found around 1400 A.D, but that the *to*-infinitival pattern was the most productive in Late Middle English. If (6c) is excluded, the first instances of *-ing* forms seem to appear at the end of the Early Modern English period, as in (6d).

- (6) a. *Mettist a man which in his entraille / Was oppressyd by the feendys myht / A wykkyd goost so did hym assayle, / Alle men **fearful to comen in his siht.*** (in: *Altenglische legenden*, c. 1460-1470, Ms. Harl. 2255, edited version of St. Giles by John Lydgate, ?c. 1430, MEC).  
 ‘You came across a man who was innerly overcome by the power of an evil spirit; a malignant ghost invaded him so, all men were fearful to come in his sight.’
- b. *Bryngyng tydyngys that **ferefful** were **to here**, / Off an huge and an orybyl dragon (*Amoryus and Cleopes*, written by John Metham, c. 1448, MEC)  
 ‘... bringing news that was fearful to hear, of a huge and dreadful dragon’*
- c. *Pe lattor þou art of good worching, Pe more **feruol** þou schalt be of **biginnynng.*** (translation from French in: *The Minor Poems of the Vernon Ms.*, c?1390, MEC).  
 ‘The more reluctant you are of good workmanship, the more fearful you shall be of beginning’
- d. *As a man blindfolded would do his hands when he is **fearfull of running***

*against a wall.* (Micrographia 207, R. HOOKE, 1665, OED).

The examples in (6a–b) show that the *to*-infinitive was immediately used both for subject control (6a) and *tough*-constructions (6b). These two construction types correlate with two separate senses of the adjective *fearful* in the MEC: it means both “Frightened; afraid (of something, to do something)”, as in the subject control pattern in (6a), and “Inspiring or causing fear, terrifying, terrible”, i.e. frightening, as in the *tough*-construction in (6b). Having such a double sense of, in the case of *fearful*, both ‘experiencing fear’ and ‘causing fear’ was a common feature of adjectives in Middle English, which allowed them to occur in either construction type, with potentially ambiguous structures as a result (Fischer 1991: 177–179).<sup>9</sup> By the end of the Early Modern English period, however, adjectives tend to have lost this double usage, with most of them specializing for either subject control constructions or *tough*-constructions, as Fischer (1991: 179) has pointed out. A similar evolution applies for *fearful*: the sense of ‘causing fear’, which the OED (*fearful*, adj., sense I) calls the ‘objective’ sense was first attested - for the Middle English coinage *fearful* as well as for the Old English forms of the noun (OED, *fear*, n.1) and verb *fear* (OED, *fear*, v.). This first sense was increasingly lost, as we will show. The second sense of ‘experiencing fear (to do something)’, which the OED terms the ‘subjective’ sense) arose slightly later but maintained in use much longer.

### 3 The diachrony of non-finite complements selected by *fearful*

In this section, we describe the diachronic distribution of the *of*-*ing* forms (subject control) and infinitive patterns (subject control, *tough*-construction, extraposition) licensed by *fearful*. The discussion will be subdivided into three parts. In 3.1, we focus on the *to*-infinitival *tough*-constructions and extraposition constructions, which share the feature of having an arbitrary implicit subject in the non-finite clause and have in transformational grammar been said to be intrinsically related. These two construction types involve the causative, i.e. the external sense of *fearful* ‘inspiring fear’, and attest to a gradual decline. In section 3.2, we examine the incidence of the two subject control patterns (infinitival and gerundial), which involve the internal sense of ‘experiencing fear, being frightened (to do something)’. We will show that the variation between gerundial and infinitive subject control constructions can in part be explained on account of the more or less agentive role of the lower subject in the event described by the non-finite clause. In section 3.3, we examine degree-licensed *to*-infinitives in the data from COHA and COCA, before rounding off with a comparison to other adjectives of fearing in section 3.4.

Table 2 gives an overview of the absolute and normalized frequencies of the four types of non-finite complements in the decades of COHA, alongside the more innovative infinitival pattern that depends on a degree modifier.

Table 2. The distribution of non-finite complements (*tough*-constructions, extraposition constructions, infinitival and gerundial subject control (SC))

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<sup>9</sup> Fischer (1991) attributes the high frequency in Middle English of adjectives with such dual usage to the influence of the large influx of French and Latin vocabulary in the period. These source languages characteristically contain words that lexicalize the two perspectives of experiencing or causing an emotional or attitudinal state at once.



constructions), and infinitival complements selected by a degree modifier *too* in COHA and COCA, in absolute, i.e. raw frequencies (abs), and in normalized frequencies per million words (pmw).

Decade	<i>Tough-Cxn</i>		Extrapos.		SC: <i>to-inf.</i>		SC: <i>of-ing</i>		<i>too A to-inf</i>	
	<i>abs</i>	<i>pmw</i>	<i>abs</i>	<i>pmw</i>	<i>abs</i>	<i>pmw</i>	<i>abs</i>	<i>pmw</i>	<i>abs</i>	<i>pmw</i>
1810s	0	-	0	-	1	0,85	1	0,85	0	-
1820s	0	-	3	0,43	4	0,58	18	2,60	0	-
1830s	6	0,44	7	0,51	4	0,29	15	1,09	0	-
1840s	11	0,69	8	0,50	5	0,31	24	1,50	2	0,12
1850s	6	0,36	3	0,18	1	0,06	27	1,64	1	0,06
1860s	5	0,29	3	0,18	1	0,06	25	1,46	0	-
1870s	4	0,21	1	0,05	0	-	26	1,40	0	-
1880s	7	0,34	1	0,05	2	0,10	12	0,57	0	-
1890s	3	0,14	1	0,05	2	0,09	15	0,71	0	-
1900s	6	0,27	2	0,09	2	0,09	16	0,71	1	0,04
1910s	1	0,04	0	-	2	0,09	11	0,49	0	-
1920s	2	0,08	0	-	2	0,08	13	0,51	0	-
1930s	1	0,04	3	0,12	4	0,16	11	0,45	1	0,04
1940s	0	-	0	-	1	0,04	19	0,79	1	0,04
1950s	0	-	0	-	0	-	18	0,74	0	-
1960s	0	-	1	0,04	0	-	22	0,92	1	0,04
1970s	0	-	0	-	1	0,04	35	1,47	2	0,08
1980s	1	0,04	0	-	1	0,04	12	0,48	2	0,08
1990s	0	-	0	-	2	0,07	23	0,83	1	0,04
2000s	0	-	0	-	0	-	16	0,54	3	0,10
<b>over-all cxn type in COHA</b>	<b>53</b>	<b>0,13</b>	<b>33</b>	<b>0,08</b>	<b>35</b>	<b>0,08</b>	<b>359</b>	<b>0,88</b>	<b>15</b>	<b>0,04</b>
1990s (COCA)	0	-	0	-	10	0,05	147	0,7	6	0,03
2000s (COCA)	0	-	0	-	5	0,02	116	0,6	12	0,06
2010-2017 (COCA)	0	-	0	-	6	0,04	79	0,5	7	0,04
<b>over-all cxn type in COCA</b>	<b>0</b>	<b>-</b>	<b>0</b>	<b>-</b>	<b>21</b>	<b>0,04</b>	<b>342</b>	<b>0,6</b>	<b>25</b>	<b>0,04</b>

Table 2 shows that the different *to*-infinitival patterns are subject to a general decline in frequency: in the early nineteenth century, *tough*-constructions, extraposition constructions, and infinitival subject control constructions still represent a fair share of the non-finite complement patterns following *fearful*, but these have become rare in the twentieth century. This decline is in keeping with a more general decrease in the usage of *fearful*, as we will show below. The one construction that has shown consistent strength throughout the period is the *of-ing* pattern, one of the two subject control patterns.

### 3.1 *Tough*-constructions and extraposition constructions in COHA and COCA

In this section, we focus on the diachronic distribution of *tough*-constructions and extraposition constructions following *fearful* in COHA. Two examples of each type of complement are given in (7a–b), from the early part of the Late Modern English period, and (8a–b), from the later part of the period.

- (7) a. *the countenance of the sufferer grew more dark and troubled, until it became fearful to look upon.* (1836, FIC)  
b. *it is fearful to think what he might have accomplished, with some discretion and skill.* (1835, MAG)
- (8) a. *Grass near the pyramids, but will not touch them. Desert more fearful to look at than ocean.* (1984, NF)  
b. *it is fearful to acknowledge the approach of madness in a beloved.* (1961, FIC)

Ever since Postal (1968), *tough*-constructions, as in the (a) examples, and extraposition constructions, as in the (b) examples, have been said to relate to each other via derivation: the rule of *tough*-movement was said to operate on an underlying string of the extraposition type, as a “rule that takes a nonsubject NP out of an extraposed complement ... and substitutes it for the initial pronominal subject of the sentence as a whole” (Postal 1968: 27). The close relationship between the two patterns is to a large extent borne out in the data for *fearful*: *tough*-constructions can usually be reformulated by an extraposition construction. This is due to the fact that they share two important features: firstly, in both construction types *fearful* has the sense of ‘causing, inspiring fear’, which is predicated of an entity (e.g. (8a)) or of an entire state-of-affairs (e.g. (8b)). Secondly, in terms of underlying subjects, the non-finite clause in both patterns involves an arbitrary, unspecific implied subject, cf. *fearful for anyone to...*, in the absence of an overt lower subject.

In keeping with the literature on functional overlap in the case of constructional coexistence, we may expect the two patterns to enter into competition, with either the two construction types diverging increasingly into separate functional specializations, or one construction type prevailing over the other in fulfilling a previously shared function (but see De Smet et al. 2018 for a more nuanced picture). The data for *fearful* suggest that the two construction patterns had already in part developed separate functional specializations. Extraposition is preferred in the case of long *to*-infinitives, in accordance with the principle of heavy end weight (cf. Quirk et al. 1985: 1361–1362). The difference with *tough*-constructions is robust: if we count the number of words following the infinitive in a non-finite extraposed clause, the average in this data set is 16,9 words. The average number of words for the subject of a *tough*-construction is only 3,5 words. This can be ascribed either to heavy modifying phrases (as in (9a)), or due to the fact that the infinitive takes a finite, and thus longer, complement, as in (9b). In such cases (accounting for two thirds of the extraposition data), the alternative of a *tough*-construction is dispreferred or excluded.

- (9) a. *It was fearful to see a creature so deadly pale, with the darkness of midnight about her.* (1846, FIC)  
b. *It is fearful to think that even death will not release us from his stern*

*dominion* (1843, FIC)

c. *Nelly's not to be laughed at. She's got a power of seeing sperrits. She has! Now, don't laugh! It's very fearful to think of; but she has it!* (1856, FIC)

The extraposition construction is used frequently with infinitives, as in (9b), which take a complement which refers to a proposition, most typically expressed by a finite clause. The *that*-clause in (9b) thus refers to a piece of information that can be assessed in terms of its likelihood of being true, rather than to a perceivable object or event. (42% of the extraposition constructions takes such a lower complement referring to a proposition, in contrast to 15% propositional subjects in *tough*-constructions, of which an example is given in (9c)). This gives the extraposition construction a more perspectivizing function: while *tough*-constructions tend to be used to describe a perceivable feature of an object or event as being *fearful* (e.g. *His eyes were fearful to behold*), the extraposition construction is used to move from describing a situation to an evaluative comment on a proposition, as in (9b).

*Tough*-constructions, in turn, prefer shorter and non-propositional constituents in their subject position, as opposed to the heavy end constituents that we find as complements to extraposed infinitives. Moreover, information-structural concerns play a role: as pointed out by Mair (1987: 63) and Comrie and Matthews (1990), the *tough*-construction is preferred over the extraposition construction to indicate the given or topical status of the non-subject NP from the lower clause which is co-referential with the subject of the main clause. This topical and/or given status is illustrated in an example such as (9c) above, in which case the proposition referred to by *it* in subject position (*that she's got the power of seeing spirits*) is topical and given. Such topical/given referents tend to be referred to by means of grammatical anaphors (Mair 1987: 63) - either by means of full anaphors, e.g. personal or demonstrative pronouns, or by means of partial anaphors, e.g. in an NP with a possessive pronoun. If we compare the two construction types in relation to their occurrence with fully anaphoric pronouns functioning as the notional object of the infinitive, we see that there are only two cases of full anaphors as complements of extraposed infinitives, i.e. in 6% of the extraposition constructions, in contrast to 8 fully anaphoric subjects in *tough*-constructions (15%), as e.g. in (9c).

The subtle functional preferences of the two patterns are further corroborated by the verb types the two construction patterns select in the non-finite complement: on the one hand, the *tough*-constructions (53 tokens, 11 non-finite verb types) and extraposition constructions (33 tokens, 10 non-finite verb types) both select the same semantic classes of predicates, i.e. perception verbs and cognition/utterance verbs, in their non-finite complements, with 5, i.e. half, of the attested non-finite verb types shared amongst the two construction patterns. In the extraposition constructions, however, the lower verb type *think* accounts for half of the extraposition tokens, while in the *tough*-constructions, the verb types *behold*, *contemplate*, and *look at/upon* account for over half of the tokens. The predominance of the infinitive *think* in the extraposition pattern is of course in line with the tendency for this pattern to allow for longer, and often propositional complements selected by the infinitive, which moreover tend to contain new or focused information. The predominance of direct perception verbs in the *tough*-construction is in line with its preference for shorter constituents referring to perceivable objects or events rather than propositions.

These specializations did not, however, prevent (either of) the two

constructional patterns being lost in the long term. As Table 2 and Figure 1 show, both *tough*-constructions and extraposition constructions were fairly frequent in the nineteenth century, with a peak in the 1840s, but then attest to a general decline, with first the extraposition construction becoming rare, and then the *tough*-construction.

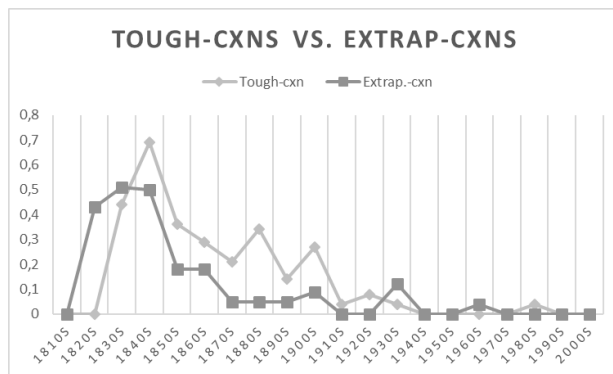


Fig. 1: normalized frequencies (pmw) of *tough*-constructions and extraposition constructions in COHA.

Note that, while we see the decline of the *tough*-construction and the *to*-infinitival extraposition construction, we also find a first example of extraposition with a gerund in COCA, as in (10), which suggests that the gerund is further gaining ground in this constructional environment which was previously restricted to infinitival patterns.<sup>10</sup>

- (10) *Most officers commit suicide rather than be captured, and the infantrymen we have captured tell us they do that because they find it too fearful expending their last bullets at us and then awaiting the suspense of us killing them at our leisure.* (1990, FIC)

The decline pictured in Figure 1 correlates with the fact that *fearful* increasingly lost the external sense of ‘causing, inspiring fear’, which is associated with the two construction patterns of extraposition and *tough*-constructions. This is in keeping with the more general trend whereby adjectives with such a dual meaning of, in this case, both ‘inspiring’ or ‘experiencing’ fear, tend to lose one of the two senses by the end of the Early Modern English period, and thus tend to come to select either *tough*-constructions or subject control constructions (Fischer 1991: 179). The restructuring was useful to redeem potential ambiguities, e.g. in the case of sentences such as *they ... are fearful to leave* (COHA, 1833). This sentence would most likely be taken to involve subject control out of context, but in fact the pronoun *they* refers back to ‘these little ports’, which does not fulfill the subject role

<sup>10</sup> The data from COHA confirm that this constructional pattern is on the rise with adjectives more generally in Late Modern English, with a strong increase in the 20th century. The pattern is found with adjectives that can occur in *tough*-constructions, e.g. *awkward* (i) or *strange* (ii), and shows a firm rise in frequency from 0,22 per million words in the 1930s, to 1,49 per million words in the 2000s.

(i) *be kind enough to give me a few guineas; I paid my last to the boatmen, and it is awkward being without money.* (1835, FIC)

(ii) *Billy smiled but kept his eyes on me. It was strange having him look at me so intently* (1997, FIC)

but the object role of the lower verb *leave* and thus instantiates the *tough*-construction. The fact that English has witnessed an increase in verbs, like *leave*, that can be both transitive or intransitive without morphological markers of valency change (van Gelderen 2011), thus creating potential contexts of ambiguities when selected as an infinitival complement by adjectives with dual meanings such as *fearful*, may have been a further factor motivating the drift towards a clearer systemic division between adjectives that involve subject control and those that involve object control in *tough*-constructions.

In terms of semantic change, the shift is moreover in line with Traugott's (1989) first general tendency: "Meanings based in the external described situation > [i.e. move to] meanings based in the internal (evaluative/perceptual/cognitive) described situation." (Traugott 1989: 34). While the two senses have long co-existed, the internal sense of *fearful*, dealing with the mental state of an entity, has by the middle of the 20th century almost entirely ousted the external sense of *fearful*, with respect to a perceptible object or situation that causes fear. The two constructions that involve the external sense, i.e. the *tough*-constructions and the extraposition constructions, increasingly disappear with it, and are no longer attested in the present-day data from COCA.

The changes in frequency of the different complementation patterns observed above should be seen in the context of the overall frequency of the word *fearful* in COHA (see Figure 2).

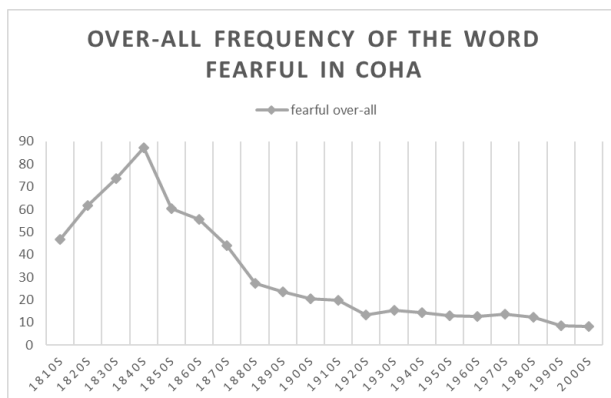


Fig. 2: normalized frequencies (pmw) of the word *fearful* in COHA.

Figure 2 suggests that the dual usage may have been the strength of *fearful*, as the loss of the sense ‘causing fear, terrible’ paves the way for a decline in usage of the word more generally. As we will show in section 3.4, the loss of the external sense of *fearful* does seem to be compensated for by means of new adjectives acquiring the same complementation patterns: a query in COHA shows for instance that the adjective *frightening* comes to occur with *to*-infinitives in extraposition constructions and in *tough*-constructions from 1910 onwards, i.e. once these two constructions were almost completely lost with *fearful*. The use of *frightening* with these two non-finite constructions has the advantage (in this case due to the *-ing* versus *-ed* morphology) of being an unambiguously ‘tough’ adjective, which is not used with subject control clauses. As we will see in the next section, the loss of the *to*-infinitival patterns following *fearful* in *tough*-constructions and extraposition constructions is in line with the negative trend for subject control *to*-infinitives, which tend to be replaced by gerundial subject control patterns.

### 3.2 Subject control constructions in COHA and COCA

In this section, we examine the incidence of the two subject control patterns (infinitival and gerundial), which involve the internal sense of ‘experiencing fear, being frightened (to do something)’. Two examples of each type of complement are given in (11a–b), from the early part of the Late Modern English period, and (12a–b), from the later part of the period.

- (11) a. *A brief silence followed; each seemed to wait, fearful to break the deadly pause* (1827, FIC)  
 b. *Whatever her project, she seemed half fearful of performing it* (1824, FIC)
- (12) a. *They went, half-knowing what they would find, but fearful to admit it aloud while they could still hope.* (1993, FIC)  
 b. *Why would a manager be fearful of getting rid of incompetent workers?* (1996, MAG)

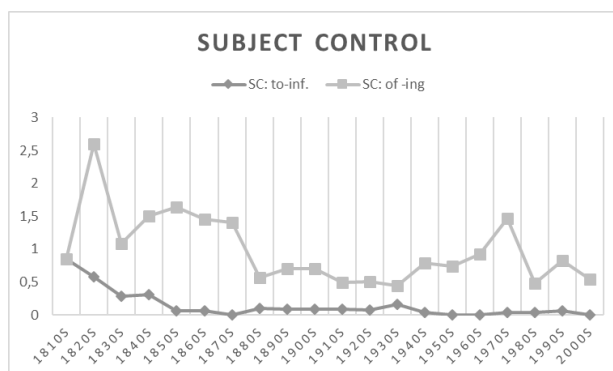


Fig. 3: normalized frequencies of infinitival and gerundial subject control patterns in COHA

As Figure 3 shows, the infinitival subject control pattern has been consistently less frequent throughout the period, with the gerundial construction being predominant already at the beginning of the Late Modern English period - much earlier than with some other adjectives that have also shown variation between *to*-infinitives and prepositional gerunds, e.g. with *accustomed*. (For earlier work on *accustomed*, see for instance Rudanko 2006; Leech et al. 2009: 185–186.) Further, comparing *to*-infinitive and *of -ing* complements of *fearful* to the same complements of the semantically related adjectives *afraid*, *scared* and *terrified* in subject control constructions (see Rudanko: 2014, 2015: 27–48, Rickman and Rudanko 2018: 15–74), it is striking that the gerundial complements are much more prominent with *fearful* than with the three other adjectives, especially in the nineteenth century. (Indeed, with *afraid* gerundial complements are much more rare than *to*-infinitives even today: for some discussion of the reasons for this, see Rickman and Rudanko 2018: 65–67.) The strength of the gerundial pattern is in the spirit of the Great Complement Shift, and all the more remarkable in the face of the more general decline of the word *fearful*. This finding suggests that the Great Complement Shift may also be understood in a broad sense as serving to protect a gerundial pattern.

While the gerundial pattern dominates over the *to*-infinitive variant throughout the period under review, for most decades there is variation between the two, and this raises the question of what factors may have a bearing on the variation.

In the literature, a number of contexts have been identified to explain when the *to*-infinitival or the gerundial pattern are preferred. A first, well-established, generalization that we may consider here is the Extraction Principle. Here is Vosberg's (2003) concise definition of it:

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, compativization, or interrogation etc.) from its original position and crosses clause boundaries. (Vosberg 2003: 308)

The definition limits the consideration of extractions to the extraction of complements, but in later work, including Vosberg (2006) and Rudanko (2006), the possibility of extending the principle to cover the extraction of adjuncts has also been raised. The broader view is adopted here.

When the principle is applied to the present data, it turns out to have limited applicability, because the number of extractions is low. We have identified six sentences in COHA where the Extraction Principle is operative. The proportion of extractions is even lower in COCA, with only 2 instances in 353 subject control examples. Two examples are given in (13a–b).

- (13) a. *this is the very thing which a truly conscientious man is most fearful of doing* (1847, MAG)  
b. *and now was able to do shopping, which she had previously been fearful of doing.* (1970, NF)

In both (13a) and (13b) the type of complement is of the *of -ing* type, which is also the case in the rest of the extractions. This is slightly surprising, but is probably a consequence of the small number of extractions and more especially of the overwhelming predominance of the gerundial pattern over the *to*-infinitive in the present dataset.

A second principle, more recent and less well-established than the Extraction Principle, is based on the idea that the agentivity or otherwise of the lower subject may have an impact on complement selection. Here is a definition of it from Rudanko (2017).

#### The Choice Principle

In the case of infinitival and gerundial complement options at a time considerable variation between the two patterns, the infinitive tends to be associated with [+Choice] contexts and the gerund with [–Choice] contexts. (Rudanko 2017: 20)

The notion of a [+/–Choice] context is then defined on the basis of the lower subject. When the lower subject is an Agent, the context is [+Choice], and when it is not an Agent the context is [–Choice]. To illustrate the distinction with data on *fearful*, consider the sentences in (14a–b) and (15a–b).

- (14) a. *the old man whispered, almost as if fearful to speak the words aloud.* (1932, FIC)

- b. *Men will become fearful of advocating even mild reforms* (1951, MAG)
- (15) a. ... *sought the support of the Republican organization, were successfully recommended, and now are fearful to be known as a Republican* (1906, MAG)
- b. *He looked about him right and left, as if fearful of being overheard* (1967, FIC)

In (14a–b) the lower subjects, which are implicit, are agentive. There is probably no approach to the notion of agentivity and of the Agent that would satisfy every linguist, but classic discussions of agentivity include, or perhaps begin with, Gruber (1967). He defined an agentive verb as follows:

An Agentive verb is one whose subject refers to an animate object which is thought of as the willful source or agent of the activity described in the sentence. (Gruber 1967: 943)

Other classic discussions of agentivity include Fillmore (1968), Lakoff (1977), Dowty (1991), Jackendoff (1990) and Hundt (2004). What emerges from such work is a notion of agentivity as a cluster of concepts. Thus Lakoff (1977) discusses what he terms ‘prototypical agent-patient sentences’, and presents a long list of properties that are found in them ‘in prototypical cases’. Some of the properties are rather specific and therefore perhaps of fairly limited applicability, including the property that ‘the agent looks at the patient’, but the idea of a cluster is useful, and the present authors have decided to give prominence to the role of three properties as important ingredients of agentivity and of agentive subjects. To consider the subject of the predicate *speak the words aloud*, as used in (14a), for instance: it conveys a conceptualization of the referent of the understood subject such that the referent is acting volitionally – or is “volitionally involved in the event or state” (see Dowty 1991: 572), has control over the action (see Berman 1970: 230), and is responsible for the action. The three properties of volitionality, control, and responsibility are also prominent in Hundt (2004: 49). The same considerations hold for the understood subject of the predicate *advocating even mild reforms*, as used in (14b). By contrast, for instance in (15b) the predicate *being overheard* conveys a conceptualization of the referent of the understood subjects as non-agentive, that is, as a person who is represented or conceptualized as being neither volitionally involved in the event, nor in control of it nor as responsible for it. Indeed, the Patient role of the subject, as in (15b), is at the opposite end of the scale from agentivity, being a prototypical non-agent. Similar considerations hold for the subject of *be known as a Republican*, as used in (15a).

While the prototypically non-agentive subjects in (15a–b) are subjects of predicates in the passive, non-agentive subjects are not limited to passives. For instance, consider the sentences in (16a–b).

- (16) a. *I felt faint and giddy, but, fearful of falling to the ground beyond the reach of assistance, I staggered on* (1846, FIC)
- b. *Of course, you know that your wife is fearful of losing her position in society?* (1868, FIC)

The predicates *falling to the ground beyond the reach of assistance* and *losing her*



*position in society* are not in the passive, but they still encode events where the referent of the understood subject is neither volitionally involved in the event, not in control of it, nor responsible for it. They are therefore examples of [-Choice] contexts.<sup>11</sup> Their status as non-agentive contexts is also confirmed by classic agentivity tests, e.g. use as an imperative, as a complement to *force/persuade*, or addition of adverbs such as *deliberately* (e.g. Dowty 1979: 184).

The Choice Principle cannot be a categorical rule, which is clear even from the first sets of examples in (15) and (16). However, it is worth investigating whether the proposal captures a significant tendency underlying the division of labour between the two subject control patterns. For this purpose we have excluded the six tokens of extraction from consideration, because – even though they involve gerundial complements in the present data – they still come within the purview of the well-established Extraction Principle.

Table 3 gives information on [+Choice] and [-Choice] contexts of *to* infinitive and *of -ing* subject control constructions selected by *fearful* in COHA.

Table 3. absolute frequencies of [+Choice] and [-Choice] contexts of *to*-infinitival and *of -ing* subject control constructions selected by *fearful* in COHA.

Decade	<i>To</i> -infs		<i>of -ing</i>	
	[+Ch]	[-Ch]	[+Ch]	[-Ch]
1810s	0	1	0	1
1820s	4	0	10	8
1830s	4	0	9	6
1840s	5	0	16	8
1850s	1	0	19	8
1860s	1	0	14	11
1870s	0	0	11	15
1880s	2	0	6	6
1890s	2	0	6	9
1900s	1	1	9	7
1910s	1	1	8	3
1920s	2	0	9	4
1930s	4	0	2	9
1940s	1	0	13	6
1950s	0	0	8	10
1960s	0	0	15	7
1970s	1	0	16	19
1980s	1	0	4	8
1990s	2	0	17	6
2000s	0	0	6	10
Totals	32	3	198	161
Totals excluding extractions	32	3	193	160

<sup>11</sup> Besides the context of lower (semi-)passives (e.g. in (14)), and lower ‘happenings’ and bene- or malefactive, as in (15), our [-Choice] contexts include lower simple perfect constructions, certain lower perception constructions, e.g. with *find*, and certain lower copular clauses, e.g. *be the only one left off the list*.

The Chi Square of the totals in Table 2 is as high as 16.18 and the results are significant at the level of  $<.0001$  ( $df=1$ ) This is in line with earlier findings on the relevance of the Choice Principle to the complement selection properties of the adjectives *afraid*, *scared* and *terrified* in subject control constructions (see Rickman and Rudanko 2018), and confirms that for *fearful* there is likewise a robust trend for the *to*-infinitive to prefer a lower agentive subject, while the gerundial pattern, which is the predominant and more flexible pattern, has non-agentive lower subjects in almost half of the tokens.

In the present-day data from COCA, this trend is confirmed: leaving aside the two instances of extractions, we have 361 instances of subject control patterns with respect to which we can assess the impact of the Choice Principle.

Table 4 gives numerical information on the frequencies of [+Choice] and [-Choice] contexts of *to*-infinitive and *of -ing* complements of *fearful* in subject control constructions.

Table 4. The frequencies of [+Choice] and [-Choice] contexts of *to*-infinitive and *of -ing* complements of *fearful* in COCA

	[+Choice]	[-Choice]
<i>to</i> -infinitives	20	1
<i>of -ing</i>	192	148

The Chi Square in this case is 10.72, and the results are significant at the level of  $<.01$  ( $df=1$ ). It can thus be concluded that the Choice Principle is a relevant predictor in explaining the underlying motivations for the choice of a *to*-infinitival versus an *of -ing* pattern: the agentive or non-agentive role of the lower, implied subject is a factor of preference for one pattern over the other.

Our data have thus clearly shown that the Choice Principle is a significant factor to explain the variation between gerundial and infinitival subject control patterns of *fearful*. In the remainder of this section, we offer further reflections on the Choice Principle and briefly examine how the principle stands in relation to, and can be supplemented by, other factors influencing the distinction between the two patterns.

A first point to make is that, where the two patterns are both possible, the choice for the gerundial or infinitival pattern can impose a different meaning for the complementation construction, despite the fact that both involve subject control.

- (17) a. *But, as for the wine, my regard for that beverage is so extreme, and I am so fearful of letting it sate me, that I keep my love for it in the lasting condition of an untried abstraction.* (1923, FIC)  
 b. *For our first-born had been a girl, and I -- disappointed and aggrieved, because I was then strongly under the influence of my father's teachings, proud of my family's position and wealth, and fearful to be impoverished in the future -- had given the word that the babe must die.* (1912, FIC)

Thus, in (17a), the gerundial ‘letting the wine sate me’ refers to the mere possibility of an event of ‘wine sating him’ occurring, without any further specification as to what may cause this event. The alternative of a *to*-infinitive as in ‘I am so fearful to

let the wine sate me’, suggests that the fearful event might actualize as a result of some unfortunate action that the speaker chose to undertake - it carries the typical sense of ‘prior intent’ or ‘orientation towards’ the realization of an action that is traditionally ascribed to the *to*-infinitive (Wierzbicka 1988: 33). This distinction between the more intentful, volitional, or goal-oriented (see e.g. Bolinger 1977: 151; Rudanko 1989: 35; Smith and Escobedo 2001) nature of the *to*-infinitive as a construction and the more flexible nature of the gerund with respect to temporal and modal grounding (see e.g. Duffley 2000) is well-known from the literature. Similarly, in (17b), the choice of the *to*-infinitive over the gerund suggests that the matrix subject can somehow be held accountable for the situation of ‘being impoverished’ if it is realized; in this case he has the choice to get rid of his first-born girl to avoid this situation. A gerundial alternative ‘fearful of being impoverished’ does not entail a similar notion of accountability, and leaves it open whether the matrix subject could or could not have made intentional choices to avoid the actualization of the undesirable situation.

What the Choice Principle does is give us a method to compare and measure the two patterns independently from these added constructional meanings in the main clause, namely in terms of their attraction to lower predicate constellations that by themselves can be conceived of as agentive or non-agentive. We have operationalized it by considering whether the understood subject of the lower verb constellation could be conceived of as agentive. If this was a possibility, then the non-finite clause was classified as [+Choice]; if it was not a possibility, the non-finite was classified as [-Choice]. Thus, *let or allow something to sate one* was classified as [+Choice], and *be impoverished in the future* as [-Choice]. What we see in the examples in (17) is that, when a [+Choice] non-finite clause is in the constructional context of a gerund, it is still interpreted as less agentive than when a [+Choice] clause is expressed by the *to*-infinitive. Similarly, if we express a [-Choice] event by means of a *to*-infinitive as in (17b), it is interpreted as more agentive than if it were expressed by a gerund (Rudanko 2015: 45–47, Rickman and Rudanko 2018: 64). By analytically breaking down such cases of constructional coercion, whereby the inherent agency of the lower clause is reinterpreted due to the constructional context, this methodology can allow for a more fine-grained picture of the workings of the constructional semantics and selectional restrictions of the complement patterns under investigation.

The second point to make is that the alternation - with or without a change in interpretation - is very strained in certain contexts. Thus, we have in our data a rare case of a so-called ‘infinitive of reaction’ (Jespersen 1940: 259–60) in (18a), where an emotive predicate is interpreted as expressing a reaction caused by, and an evaluative attitude towards, an event that has already actualized.

- (18) a. “My daughter also asked me to come get her - I was very fearful to hear this,” Martinez wrote in a letter (2010, NEWS)  
 b. FATHER holds the envelope before him, obviously eager to open it, yet fearful to do so (1934, FIC)

A *to*-infinitive of reaction has an adverbial flavor and its meaning in (18a) is close to ‘when I heard this’ (cf. Duffley 2006: 83). Notably, the *to*-infinitive of reaction does not alternate with the *of -ing* pattern. As can be expected, the gerund is also highly unlikely in contexts where *fearful* is coordinated with another adjective that takes a

*to*-infinitive, as in (18b). And finally, patterns of complementation selected by degree modifiers show a preference for *to*-infinitives; this is discussed in the next section.

### 3.3 Degree-licensed patterns

In this section, we deal with those complements that were classified as ‘indirect’ complements depending on a degree modifier *too* rather than on *fearful* as the head, and with their contrasts to head-licensed patterns with degree modifiers. The degree-licensed pattern, illustrated in (19), has its own negative-implicative meaning: its use in a positive statement implies that the state-of-affairs in the *to*-infinitive has not occurred, and can be rephrased as ‘they were so fearful that they could not speak for change’ in (19). Though not part of our data set, a similar degree-licensed pattern with positive-implicative meaning exists, as illustrated in (20): *fearful enough [not to allow someone something]* implicates that the event of not allowing has actually taken place.

- (19) *people who favor ending celibacy but who are too fearful to speak for change.* (2001, MAG)  
(20) *So we were more fearful... Fearful enough not to allow her a driver's license* (1998, SPOK)

If we examine the cases of degree-licensed *to*-infinitives in COHA and COCA, two important descriptive points stand out. Firstly, the degree-licensed pattern can combine with all *to*-infinitival patterns (also with adjectives other than *fearful*): it occurs with subject-controlled *to*-infinitives (19–20), with extraposed *to*-infinitives (21), even if this is not attested for *fearful*, and with *tough*-constructions (22), even if there is only one example of the latter in the data for *fearful*.

- (21) *the local cowboys have decided it's too dangerous to bring cattle down our cliffside trail* (2004, MAG)  
(22) *that would be too fearful to talk about* (1901, FIC)

The degree-licensed pattern does not occur with the *of -ing* pattern, cf. (23), which has the ordinary internal sense of *fearful*, rather than the negative-implicative meaning. In (19–22), the *to*-infinitive is licensed by the degree element, whereas in (23), the *of -ing* pattern is licensed by *fearful*, which is modified for a high degree.

- (23) *There was nothing I could do or say. I was too fearful of starting fresh quarrels.* (MAG, 1944)

Secondly, the data from Late Modern to Present-day English suggest that the degree-licensed infinitives with adjectives are on the rise. In the case of *fearful*, 15 out of 135 *to*-infinitives in COHA are degree-licensed, with only 3 cases from the 19<sup>th</sup> century, and 9 from the 20<sup>th</sup> century part of the corpus. In COCA, by contrast, the degree-licensed pattern makes up a much higher proportion of the data, with 25 out of the 46 *to*-infinitives representing the pattern. In terms of normalized frequencies, the rise is not that outspoken, with a slight increase from 0.04 tokens per million words on average in COHA to 0.06 in COCA's 2000s. This is to be

expected in view of the general loss of productivity of the *to*-infinitival pattern with *fearful*. It seems to indicate that the *to*-infinitival pattern has become so rare with *fearful* that it is increasingly restricted to occur in this semi-fixed constructional pattern, in which other adjectives occur that do not take *to*-infinitival complements by themselves (e.g. *dangerous* in (21)). More generally, the chart function from the COHA corpus also seems to suggest an increase for the degree-licensed pattern with other adjectives: using the tagset, a query for *too* + adjective + *to* + infinitive (*too* \_j\* *to* \_v?i\*) yields a normalized frequency of 74,99 instances per million words in the 1830s, with a slight but unstable rise to 83,64 instances per million words in the 1990s. The positive-implicative pattern, queried as \_j\* *enough to* \_v?i\*, shows a clearer rise from 43,34 to 67,75 per million words from 1830s to 1990s.

To explain the increase in the proportion of the degree-licensed pattern, we will consider its position in the light of the broader use of *fearful* combining with clausal structures, for which we turn to the diachrony of the clausal connective *lest*, illustrated in (24–25).

- (24) *After some deliberation, it was agreed that the information should be kept secret, lest alarm might be given to the tories, and their assembling prevented* (1830, FIC)
- (25) a. *He was constantly fearful lest he should be detected.* (1854, FIC)  
 b. *They were impliments of some kind which rattled against each other in consequence of this unlucky blow. I was fearful lest this noise should alarm, as the closet was little distant from the bed.* (1827, FIC)

López-Couso (2007) describes how *lest* started out as an adverbial connective of negative purpose, meaning ‘so that ... not’, as in (24), but started to gradually lose this function from Middle English onwards due to competition with new connectives such as *for fear that* or *in order that ... not*. The connective then acquired a new function as a complementizer, which is however heavily restricted in occurrence: this finite complement pattern is selected by main clause predicates of fearing, as in (25). *Fearful* is by far the adjective most frequently taking *lest*-complement clauses in COHA, maintaining an average frequency of 0,5 instances per million words up until 1940, but then quickly dropping out of use, and thereby finally giving in to the long-lasting trend of a drop in usage for the connective *lest*. While the complement *lest*-clauses following *fearful* in (25) could be replaced by a gerundial or infinitival pattern, the historically older function of *lest* as an adverbial connective of negative purpose or negative result (‘so that...not’) comes close to the function of the *too...to*-infinitive uses in of the degree-licensed pattern, compare e.g. (21) to ‘It is *so* dangerous *that* we *should not* bring the cattle down the trail’. To get a closer look on the meaning of this degree-licensed pattern with *fearful*, we briefly analyze different discourse schemas in which the adjective is found, thereby also paying attention to constituents that are not complements.

If we consider the adverbial (24) and complementizer (25) functions of *lest* in relation to *fearful*, we see how the adjective occurs in the discourse schemata illustrated in (26). In the first schema in (26a), *fearful* takes a complement that is [+Choice], which specifies the cause for the undesirable consequence in the adverbial clause. The complement in (26a) is most naturally expressed by a *to*-infinitive as in (27a), but can also be expressed in a gerundial as in (27b), as these express both [+Choice] and [-Choice] clauses. This is the fullest discourse schema for *fearful*, which specifies fear to fulfill a particular action, because it might imply

other negative consequences.

In a second discourse schema, (26b), *fearful* occurs only with a complement referring to an undesirable situation that might actualize, which may or may not be the result of an agentive choice. This complement can be expressed by means of a gerund, *to*-infinitive, *that*-clause, or complement *lest*-clause as in (25). In comparison to the first discourse schema, it is clear that this second schema does not require a [+Choice] complement, and does not need to specify a second situation as the cause or consequence of the complement situation. It can thus be used to promote the expression of an indirect consequence, in (26a) expressed in an adverbial clause, to a complement clause.

- (26) a. *X<sub>i</sub> fearful* [X<sub>i</sub> cause situation e]<sub>C</sub> [lest consequence f actualizes]<sub>ADV</sub>  
[≈ so that f does NOT actualize]
- b. *X fearful* [lest situation e/f occurs]<sub>C</sub>  
[≈ that e/f might occur]
- c. *X<sub>i</sub> too fearful* [[lest consequence f actualizes]<sub>ADV/C</sub>  
≈X<sub>i</sub> so fearful ([to cause situation e]<sub>C</sub>) [*that* e/f does NOT actualize]
- (27) a. *I was fearful to return, lest I should fall into the clutches o' the priesthood*  
(1910, FIC)
- b. *some of them looked so grim, and stood so bolt upright as if fearful of looking to the right or the left lest they should give any one offence* (1846, FIC)

And finally, the last discourse schema, in (26c), represents the more recently entrenched *too...to*-infinitive pattern, which involves a *to*-infinitive that is the complement of the degree element *too*, and not of *fearful*. This pattern expresses a mix of (i) the agentive intent towards the fulfillment of some action as is typically expressed by a [+Choice] complement, and the (ii) the non-realization of a particular consequence, which in patterns with *fearful* is typically expressed in an adverbial clause, more specifically one of result. This combination of the complement meaning of intending to realize an action, and the adverbial meaning of result, together gives the negative-implicative meaning of this pattern - it implies that a situation was intentionally chosen not to be realized out of fear, with the result that a particular situation has not actualized.

### 3.4 A comparison to other adjectives of fearing in Late Modern English

In this final section, we consider the decline of *fearful* in relation to the broader paradigm of adjectives of fearing. It was suggested that the loss of the external sense of *fearful* relates to a more general trend in the language whereby Old or Middle English adjectives with a dual meaning tend to specialize into one of the two senses, thereby losing the complement patterns associated with the other sense (cf. Fischer 1991: 179). Besides this tendency towards monosemy and functional specialization, we know that similar verbal predicates, which fall under the group of English psych verbs, have undergone a cycle of loss and renewal over time. Verbal predicates of fearing thus had two senses 'causing fear' and 'experiencing fear' in the history of English. Van Gelderen (2014) shows how the verb *fear* is used only in the causative meaning 'to frighten' from OE to the end of the fourteenth century. At the end of the

fourteenth century, the verb acquires the sense of ‘experiencing fear’ besides the causative ‘frighten’ sense, and begins to lose its causative sense from then onwards. One of the factors causing this change is the loss by the end of the Old English period of a productive morphological causative marker -i-/-j-, which no longer disambiguates causative and non-causative readings. Various instances of renewal are found to make up for the lost causative marker, e.g. the Middle English suffix -*en*, which we find in the new verbal form *frighten* (1666). To establish to what degree a similar cycle of loss and renewal has affected English adjectives of fearing, we have in Table 5 listed their morphological derivation and primary senses, with the year of their first attestation as given in the OED. We have then used tag-based searches in COHA to establish the Late Modern English usage of these adjectives in the complementation patterns under investigation, together with an indication of a notable rise, fall, or stability in the frequency of this pattern and of the adjective over-all over the course of the Late Modern English period.

Table 5. Adjectives of fearing coined in Middle or Early Modern English, with their non-finite complementation patterns.

Adjective	base meanings (< OED)	relevant senses adj.	<i>tough-cxn</i>	su-extr. <i>to-inf</i>	su-extr. gerund	<i>too</i> adj <i>to-inf</i>	SC <i>P-ing</i>	SC <i>to-inf</i>
<i>Dreadful</i> over-all ↘	<b>dread</b> (n) -ful 1.fear (c1200) 2.cause of fear (c1400)	1. afraid (c1225)					NA in COHA	NA in COHA
		2. inspiring dread (c1325)	✓ ↘	✓ ↘ [dom.]	✓ (↗) 1 <sup>st</sup> 1943	✓ ↘		
<i>Frightful</i> over-all ↘	<b>fright</b> (n) -ful (fear in general, c825)	1. † afraid (a1325)					(at) NA in COHA	NA in COHA
		2. frightening (1607)	✓ ↘	✓ ↘ [dom.]	NA in COHA	✓ ↘ 1 <sup>st</sup> 1859		
<i>Fearful</i> over-all ↘	<b>fear</b> (v) -ful 1.cause fear (c1000) 2.feel fear (1393)	1. frightening (1340-70)	✓ ↘	✓ ↘	(only in COCA) (1990)	✓ (↗) 1 <sup>st</sup> 1901		
		2.afraid (c.1374)				✓ (↗) 1 <sup>st</sup> 1845	✓ (of) ↗ ↘ [dom.]	✓ ↘
<i>Afraid</i> over-all stable(→)	<b>affray</b> (v) -ed 1.frighten (c1330) 2.fear (a1450)	frightened (c1350)				✓ ↗ 1 <sup>st</sup> 1910	✓ (of) →	✓ → [dom.]
<i>Terrible</i> over-all ↗ ↘	< French <b>terrible</b>	causing great fear (c1400)	✓ ↗ ↘	✓ ↗ ↘ [dom.]	✓ (↗) 1 <sup>st</sup> 1917	✓ ↗ ↘		
<i>Timorous</i> over-all ↗ ↘	< French <b>temorous</b>	1.afraid, easily frightened (c1450)				✓ (↘) (7 tokens) [dom.]	✓ (of) ↘ (3 tokens)	NA in COHA
		2. †frightening (1455)	NA in COHA	NA in COHA	NA in COHA	NA in COHA		
<i>Terrifying</i> over-all ↗	<b>terrify</b> (v) -ing (frighten, 1536)	causing terror (1577)	✓ ↗ (8 tokens) 1 <sup>st</sup> 1849	✓ ↗ (14 tokens) 1 <sup>st</sup> 1916 [dom.]	✓ (1 token) 1 <sup>st</sup> 1956			
<i>Terrified</i> over-all ↘ ↗	<b>terrify</b> (v) -ed (frighten, 1536)	very afraid (c1586)				✓ ↗ 1 <sup>st</sup> 1843	✓ ↗ (of, at, about) 1 <sup>st</sup> 1852 [dom.]	✓ ↗ 1 <sup>st</sup> 1849
<i>Scary</i> over-all ↗	<b>scare</b> (n) -y 1.fear (a1400-50) 2.cause of fear (1530)	1. causing fear (1582)	✓ ↗ (4 tokens) 1 <sup>st</sup> 1961	✓ ↗ (13 tokens) 1 <sup>st</sup> 1981	✓ ↗ (3 tokens) 1 <sup>st</sup> 2000	✓ ↗ (4 tokens) 1 <sup>st</sup> 1988		
		2. afraid (1773)					1 token (at), 1844	NA in COHA
<i>Scared</i> over-all ↗	<b>scare</b> (v) -ed 1. frighten (c1200) 2. take fright (c1400)	frightened (1725)				✓ ↗ 1 <sup>st</sup> 1902	✓ ↗ (of, at, about) 1 <sup>st</sup> 1870	✓ ↗ 1 <sup>st</sup> 1825 [dom.]
<i>Frightening</i> over-all ↗	<b>frighten</b> (v) -ing (terrify, 1666)	that frightens (1715)	✓ ↗ (4 tokens) 1 <sup>st</sup> 1967	✓ ↗ (8 tokens) 1 <sup>st</sup> 1936 [dom.]	✓ (1 token), 1965	✓ ↗ 5 tokens 1 <sup>st</sup> 1936		
<i>Frightened</i> over-all ↗ ↘	<b>frighten</b> (v) -ing (terrify, 1666)	full of fear (a1721)				✓ ↗ 1 <sup>st</sup> 1847 [dom.]	✓ ↗ (on, about, of) 1 <sup>st</sup> 1839	✓ ↗ ↘ ↗



Table 5 shows the fact that English adjectives of fearing have undergone a similar cycle of renewal, with Middle English adjectives such as *dreadful*, *frightful*, and *timorous* showing a steep decline, already having lost one of their two meanings by the Late Modern English period, while younger adjectives come in morphologically unambiguous pairs covering either sense (*terrifying/terrified*, *scary/scared*, *frightening/frightened*) and are firmly on the rise, also in their use in non-finite complementation patterns.<sup>12</sup> The table also confirms that the degree-licensed pattern is entrenched later for most adjectives, indicating the first token for such more recent development. For all adjectives with a causative sense, the pattern in which we find an extraposed gerund (e.g. *It is fearful seeing what the world has come to*) is the most recent development, starting from the 20<sup>th</sup> century.

#### 4 Conclusion

In this article, we have considered a case of constructional co-existence and competition against the background of two broader historical trends. Firstly, *fearful* is an adjective with a dual meaning, which allows it to occur in both *tough*-constructions and subject control constructions from its early uses in Middle English, but it gradually comes to occur only with one of these two senses. In the case of *fearful*, it is the internal sense ‘frightened’, related to the subject control pattern, which wins out. The decline of the *to*-infinitival pattern in extraposition and *tough*-constructions, associated with the external sense ‘frightening’ correlates with a decline in usage of the word *fearful* more generally. As an adjective such as *frightening* comes to occur with *to*-infinitives in extraposition constructions and in *tough*-constructions in COHA from 1910 onwards, the loss does seem to be compensated for in part by means of a new adjective, that is unambiguously linked to *tough*-constructions because of its *-ing* (as opposed to *-ed*) morphology. This is part of a larger cycle of loss and renewal in English adjectives of fearing, in which the younger and morphologically unambiguous adjectives win out over the earlier polyfunctional adjectives.

Secondly, the competition between the two subject control patterns is in the spirit of the Great Complement Shift, which amongst others predicts that in the case of functional equivalence, the gerundial pattern will tend to prevail over the infinitival pattern. This is the case also for *fearful*, for which the gerundial pattern was predominant already at the start of the Late Modern English period, and has remained the most frequent pattern of the four. Even so, this pattern has likewise been steadily declining as a non-finite pattern following *fearful*. The Great Complement Shift may in that sense also be conceived of as slowing down the decline in the gerundial pattern, rather than promoting its spreading usage in contexts formerly associated with *to*-infinitives. With respect to the competition between the two subject control patterns, we have provided evidence for the Choice Principle as an explanatory factor to account for the remaining variation between infinitival and gerundial subject control patterns: it was shown that *to*-infinitives with subject control significantly prefer implied subjects that are agents in the lower

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<sup>12</sup> For a more in-depth investigation of the complementation patterns of *afraid*, *scared*, and *terrified*, see Rickman and Rudanko (2018).

event, as in e.g. *he was fearful to speak out loud*, in contrast to non-agentive implied subjects in the lower clause, e.g. *he was fearful to fall*. This is in line with earlier findings on *afraid*, *scared* and *terrified*, supporting the status of the Choice Principle as an explanatory factor with adjectives that are fairly similar in meaning. From a broader perspective, this conclusion relating to the role of the Choice Principle reaffirms the benefits of studying understood subjects of non-finite complements and of positing such subjects in the first place.

Faced with the gradual decline in all of these four non-finite constructions, the only patterns that attest to a relative increase are the degree-licensed *to*-infinitival pattern and the subject-extraposed gerundial patterns. The use of these patterns in recent decades merits further investigation in later work.

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