Complements of force in 18th to 20th century British English

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Pro Gradu Thesis
October 2013

Tampereen yliopisto
Englantilainen filologia
Kieli-, käännös- ja kirjallisuustieteen yksikkö

SAARI, ANTTI: Complements of force in 18th to 20th century British English

Pro gradu -tutkielma, 64 sivua
Lokakuu 2013

Tämä pro gradu -tutkielma tutkii englannin verbin force ja sen eri taivutusmuotojen valitsemia komplementteja brittienglannissa kolmella eri aikakaudella, 1710-luvusta nykyaikaan. Tutkimuksen tarkoituksena on selvittää kyseisen verbin käytössä tapahtuneita kieliopillisia muutoksia, erityisesti sen valitsemien komplementtien suhteellisessa määrässä sekä koko predikaation merkityksessä.

Tutkimukseen kerättiin aineistoa kahdestä eri korpuksesta: historiallinen lähdemateriaali on otettu Corpus of Late Modern English Texts Extended Versionin ensimmäisestä ja kolmannesta osasta, kun taas nykyenglannin tutkimusaineiston lähde on British National Corpus. Koska historiallinen materiaali koostuu pääosin kaunokirjallisista teksteistä, myös laajemman nykyenglannin korpuksen alue rajattiin ensisijaisesti kaunokirjallisuuteen.

Tutkimus koostuu kahdesta osasta. Ensimmäisessä osassa kartoitetaan miten verbiä force on kuvattu aiemmassa tutkimuksessa, kielioppikirjoissa ja sanakirjoissa. Samoin ensimmäisessä osassa esitellään toisessa osassa sovellettava kielitieteellinen teoria ja käytetyt tutkimusmenetelmät. Toinen osa kattaa tutkimuksen force verbin käyttöön kerätyssä korpusaineistoissa. Löydöksiä tutkitaan pääasiallisesti Oxford English Dictionaryn asettamissa raameissa, kiinnittäen erityishuomioita tilanteisiin joissa tutkimusmateriaali poikkeaa siitä mitä aiemman kirjallisuuden perusteella voisi odottaa.

Tutkimuksessa osoitetaan, että muutosta forcen ei-finiittikomplementeissa ei ole tapahtunut tutkimusaikana, mutta muissa komplementeissa, sekä verbin merkityksissä, on. Samoin kävi ilmi, että osassa merkityksiään force voi valita suuntaa ilmaisevia komplementteja ja niiden yhdistelmiä ilmeisen vapaasti, mikä tekee forcen valitsemien komplementtien kokonaismäärästä huomattavan suureen, ja käänteisesti yksittäisten komplementtien yleisyydestä suhteellisen pienen. Yleisistä komplementaatioon vaikuttavista periaatteista etenkin horror aequi -periaatteen vaikutus verbin force komplementaatioon on nähtävissä tutkimusaineistossa.

Asiasanat: verbi, korpus, komplementaatio

Contents

1 Introduction

The aim of this thesis is to examine the historical and present day complementation patterns selected by the head verb *force* in Late Modern and Present Day British English, that is, English from around 1700 until now. This type of study has already been done for a number of other verbs, and *force* was considered an interesting addition to that body of work due to it having been identified as being able to take at least two different sentential non-finite complements: the *to* infinitive and the *into –ing* complement. If a change in the distribution of these complements were observable with *force*, it would tie in rather nicely with existing grammatical research in the area. Barring that, other observable temporal changes in the complementation or meaning of *force*, or indeed simply the behaviour of these complements in PDE is of interest, and can serve as data in more general analysis of predicate complementation.

Force was also the topic of the author's Bachelor's thesis in contrastive linguistics. While that work had a completely different focus and source material, and indeed had to eventually be narrowed down to just the noun *force*, the present thesis retains some spirtual connection to it, if only in the mind of the author. In particular the discarded section on *force* as a verb made an impact on the author due to the versatility of meaning *force* could take, as evidenced by the richness of expression found in the corresponding sections on the Finnish side of the Tampere Bilingual Corpus of Finnish and English.

The present study begins by outlining the current understanding of the possible complements of *force*, as described in selected dictionaries and grammars, and the meanings of the complementations found this way. Any other data of interest regarding *force* unearthed in the process shall also be noted. This is followed by a brief introduction to the fundamental concepts of this area of research and the various grammatical effects that may affect the complementation of a predicate, especially as it applies to *force.*

After the current, published understanding of the complementation of *force* and the theoretical framework used to study it have been introduced, their relevance to actual historical and present day usage, along with the usage patterns and changes found, will be examined with the aid of corpus data. The historical data comes from the first and third parts of the Corpus of Late Modern English Texts Extended Version (CLMETEV) and the present day data is taken from the Imaginative Prose section of the British National Corpus (BNC).

2 On corpora used in the study

In this chapter, the corpora used in the study will be introduced. The introduction will begin with an explanation of some the methodology used in studying corpora and analyzing the results, before moving on to the corpora, introduced in chronological order. The focus will be on the use and applicability of said corpora in this thesis, rather than on generalities, as some familiarity with corpus linguistics is expected of the reader.

2.1 Normalised frequency

As this thesis will draw upon three differently sized sets of text data, the two parts of CLMETEV and the Imaginative Prose section of the BNC, a means to compare results between them must be devised. After all, a raw frequency of five tokens in a hundred words carries completely different implications about frequency of usage than five out of a million. For this reason, all numerical data derived from the corpora will be presented not only as raw numbers and percentage of total results, but also as a normalised frequency (NF) of N per million words. The function used is $\frac{(number\ of\ tokens)\times 1\ 000\ 000}{(words\ in\ corpus)}$. For example, the first part of CLMETEV has 3 037 607 words, 1 060 of which are either *force, forces, forced* or *forcing*. Thus the NF of the lemma *force* in the first part of CLMETEV is $\frac{1\ 060\times 1\ 000\ 000}{3\ 037\ 607} \approx 349$ words per million.

To make the workload more reasonable, this study uses only a sample of all tokens available in the analysis. As CLEMETEV does not come with any specialized tools for manipulating the text, this sampling, also known as "thinning", is accomplished with simple text/XML-editor that supports recorded macros. The thinning method is to simply group the tokens into sets of three and then delete the last two tokens in every group. To reflect this, the "words in corpus" variable used in the calculations will be the original multiplied by the ratio of analyzed tokens to all tokens, for example $\frac{354}{1\ 060} \times 3\ 037\ 607 \approx 1\ 014\ 446$ words for CLMETEV part 1.

2.2 Corpus of Late Modern English Texts Extended Version

The CLMETEV was compiled by Hendrik De Smet and comprises of freely available texts by native speakers of British English collected from *Project Gutenberg, Oxford Text Archive* and the *Victorian Women Writers Project*. It includes data from the years 1710 to 1920 divided into three 70-year chunks: this thesis uses the first part, from 1710 to 1780, which has 3 037 607 words from 32 sources and 23 different authors, and the third part, from 1850 to 1920, which has 6 251 564 words from 80 sources and 51 different authors. A part of the corpus needed to be skipped in this thesis in order not to exceed the targeted scope of the work, and the second part of the corpus was deemed the most unnecessary for the purposes outlined in the research statement, so that was the one skipped. Even without part 2, the thesis still has data from the start and end of the Late Modern English period, as well as from Present Day English, which gives more definitive points of comparison for investigating temporal change than eschewing one of the other data points in favour of part 2 would.

The original CLMET was introduced by De Smet in 2005 to address the lack of large corpora from the Late Modern English period. While CLMET has a self-acknowledged bias for the English used by upper class male authors, De Smet has tried, when possible, to give preference to texts written in a lower register and the works of female authors (2005, 71-72). The addition of *Victorian Women Writers Project* as a data source for the extended version can be seen as an example of this attempt for balance, and has hopefully resulted in a more representative view of the English used in the period.

The CLMETEV provides the historical usage data used in this study. The corpus is unfortunately untagged— that is, it comprises of plain text with no metadata to describe the individual words. This kind of metadata would be extremely helpful in analysing word forms such as *force* that can occur in different parts of speech: *force, forces* and *forcing* can also be nouns (e.g., “the force of impact”), while *forced* can be an adjective (e.g., “a forced smile”). Using a corpus with

part of speech tags, it would be possible to search only for the lemma *force* as a verb, which would immensely increase the precision of the search results and help maintain more compatible working methods across corpora.

A third, greatly expanded edition of CLMET was published during the writing of this thesis, and any new study on similar themes should by all means use that instead of CLMETEV. For the present study, as the bulk of the data analysis on historical data was already done at the time the third edition was made public, and as lack of tokens for *force* was never an issue even with the original CLMET, it is a quite common word after all, the decision was made to finish the work using CLMETEV data.

2.3 The British National Corpus

The source of the present day English language data used in this thesis, the BNC, is a corpus of 96 986 707 words of present day written and spoken British English, from 1960 to 1993. In order to to find text as similar in style to that of CLMETEV as possible, this study uses only the Imaginative Prose section of the BNC, which consists of 16 496 420 words of written English from 476 different sources. The full BNC also contains data from newspapers and other informative writing, as well as spoken English (Burnard, 2007), which might provide data that is not directly comparable with the data from CLMETEV and is therefore excluded from this study. After all, the present study is interested in the effects of only one variable—time—and introducing other variables, such as register or indeed speech versus writing as the extreme case, would add unnecessary confusion to the results.

As the BNC is a modern, commercial corpus, it includes extensive metadata including full part of speech tagging of its data, advanced search options and built-in thinning functions and other tools for the manipulation of the search results it provides. As a result, its data yields itself much more readily into this type of study, though it should not be assumed that its automated functions

work perfectly either: perfectly reliable automatic part of speech tagging is far from a solved problem in computational linguistics.

The interface used for this study was the BNCweb version available via the University of Tampere website. It provided all the tools deemed necessary, and as it was realized early on that this thesis would take considerable time to complete due to other responsibilities of the author, reliable, perpetually free access to the interface and the data was given high priority in the choosing criteria. While there are more modern approaches to presenting the same corpus data, for example the BYU-BNC, (Mark Davies, 2004), there is no guarantee that its terms of use would not change, that it would not restrict the amount of access or even stop free access completely to someone unrelated to the institution that runs it.

3 Treatment of *force* in selected dictionaries and grammars

A number of English dictionaries, grammars and linguistic articles were consulted to verify the current linguistic understand of how the verb *force* is and has been used, paying special attention to the meanings it takes and the complements it selects. A summary of these findings is presented below.

3.1 Dictionaries

A number of dictionaries were consulted for this study in order to establish the current understanding of the possible complements and meanings the verb *force* can take. *The Oxford English Dictionary* was an obvious first choice considering its stated aims and extensive entries. Dictionaries from other publishers were included not only on the chance that Oxford missed something, but also for the different approaches taken to compiling a dictionary entry, namely attempting to sort the different meanings of the head word by frequency of actual usage in *Collins COBUILD*, and attempting to list all possible complements in the *Valency Dictionary of English*. Finally, the *Longman Dictionary of Contemporary English* represents yet another traditional publisher and, as it happens to have a rather extensive entry on *force,* including it here seems well justified.

3.1.1 *The Oxford English Dictionary*

The primary dictionary used for this essay was the second edition of the *Oxford English Dictionary* (*OED*). The *OED* lists two main meanings for *force*, divided into 15 submeanings in total. The first 12 submeanings belong under the main meaning "to apply force" and only one of them is marked as obsolete. The second main meaning, "to give, add, have force" (=to reinforce) has all of its three submeanings marked as obsolete, but one has example sentences from as late as 19th century so it was still relevant in the period considered in the present study. The other (three) obsolete submeanings shall be discarded as irrelevant, however, as they are not expected to be found in the corpus data examined for this thesis.

After the very similar meanings 3 and 5 from the *OED* were combined into meaning 2 here, we are left with eleven distinct meanings. The following table presents the meanings with examples illustrating each, as well as the complements found in the example sentences for each meaning. Due to the large number of complements found, it would be impractical to reproduce here the original sentences for each, but an effort was made to choose representative samples including at least each of the different types of complement.

Meaning	**Example sentence(s)**	**Complements**
1. to use violence to; to violate	1701 Swift *Disc. Contests Nobles & Commons* i. 7 One of them proceeding so far as to endeavour to *force a Lady of great Virtue*.	NP
2. to constrain by force; to compel; to put a strained sense upon; to compel to violent effort (meanings 3 & 5 in *OED*)	1662 E. Stillingfleet *Origines Sacræ* iii. ii. §2 Without *forcing the words of Moses into such a sense*.	NP into NP
	1825 J. F. Danneley *Encycl. Music* at *Force*, When[...]*the instrument or voice* is *forced*, sound becomes noise[...]*To Force the voice*, is to exceed its diapason and natural strength.	NP
	1860 J. L. Motley *Hist. Netherlands* (1868) I. viii. 524 Sir Francis[...]occasionally *forced his adversaries' hands*.	NP
	1963 A. Ross *Australia 63* iii. 79 Dexter *forced him through mid-wicket.*	NP through NP
3. To compel, constrain, or oblige (a person, oneself, etc.) to do a thing	1770‘Junius’ *Stat Nominis Umbra* (1772) II. xli. 129 Your fears have[...]*forced you to resign*.	NP to inf
	1803 *Med. Jrnl.* 10 510 Solid or fluid substances exciting vomiting[...]act as powerful stimuli on the disordered state of the stomach, and *force it to preternatural contraction*.	NP to NP
	1845 M. Pattison in *Christian Remembrancer* Jan. 68 When men are *forced into daily and hourly action* in matters where they cannot be indifferent spectators.	NP into NP
4. to overpower by force; to break open	1781 Gibbon *Decline & Fall* III. 236 The[...]dwelling[...]was *forced open* by one of the powerful Goths.	NP open
	1839 T. Keightley *Hist. Eng.* II. 43 The rebels once more prepared to *force the ford.*	NP

Meaning	Example sentence(s)	Complements
5. to drive by force	1634 J. Bate Myst. *Nature & Art* i. 17 Another manner of *forcing water*.	NP
	1705 J. Addison *Remarks Italy* 4 *We* were *forc'd*, by contrary Winds, *into St. Remo*.	NP into NP
	1849 G. P. R. James *Woodman* i, *Through* which the stream seemed to have *forced itself*.	NP through NP
	1958 *Times* 30 June 10/5 *U.S. aircraft forced down* by Soviet fighters.	NP down
		(Not shown: NP back, NP up, NP up into NP, NP upon NP)
6. To make one's way by force	1791 E. Inchbald *Simple Story* III. xii. 178 You have dared to visit her—to *force into her presence* and shock her.	into NP
	1853 E. K. Kane *U.S. Grinnell Exped*. (1856) xliv. 406 We gradually *force ahead*, breasting aside the floes.	Ahead
		(Not shown: in, out of NP, through NP, up)
7. To press, put, or impose (something) forcibly;	1856 T. De Quincey *Confessions Eng. Opium-eater* (rev. ed.) in Select. Grave & Gay V. 238 Nervous irritation *forced me*[...]*upon frightful excesses*; but terror from anomalous symptoms sooner or later *forced me back.*	NP upon NP
	1872 J. L. Sanford *Estimates Eng. Kings: Charles I* 334 However plainly *the facts of the case* were *forced on his attention.*	NP on NP
	1880 R. Browning *Clive* in *Dramatic Idyls* 116 You *forced a card* and cheated!	NP
	1903 R. Langbridge *Flame & Flood* xxiv Her lack of money had *forced her back upon the most respectable costume which she had*.	NP back upon NP

Meaning	Example sentence(s)	Complements
8. to bring about by force or effort	1640 W. Habington *Hist. Edward IV* 35 The Nobility in generall lookt discontented, or else but *forc'd a smile*. 1697 W. Dampier *New Voy. around World* i. 6 We should..*force our way through their Country*. 1809 J. Roland *Amateur of Fencing* 81 You may..*force a favourable opportunity to deliver* the thrust you had thus premeditated.	NP NP through NP NP to inf
9. to take by force; to draw forth; to extort	1715 Lady M. W. Montagu *Town Eclogues* ii. 46 A lady[...]with gentle strugglings let me *force this ring*. 1719 D. Defoe *Life Robinson Crusoe* 55 This *forc'd Tears from my Eyes.* 1817 J. Mill *Hist. Brit. India* II. v. ix. 715 Means[...]were employed to *force out the real state of the facts.*	NP NP from NP NP out (Not shown: NP away, NP out from NP)
10. to hasten by artificial means the maturity of (plants, fruit, etc.).	1842 W. T. Brande *Dict. Sci., Lit. & Art* 463/1 *Cherries* having been *forced*[...]from the time of Charles II.	NP
11. to reinforce	1794 W. Hutchinson *Hist. Durham* III. 175 The *ground*[...]appears to have been *forced*, and is trenched round. 1810 C. James *New Mil. Dict.* (ed. 3) , To *force*, to man *the works* of a garrison.	NP NP

The *OED* also lists specialist meanings of *force* used in whist, cricket, tennis and wine making terminology. These meanings were ignored for this study due to being unlikely to occur in the corpus data. From now on until the end of this thesis, unless explicitly stated otherwise, the phrase (*OED*) *meaning number* is used to refer to the meanings listed in the above table; not the numbering scheme used in the actual *OED*.

Meanings 3 and 6 draw attention immediately in that they both have a unique complementation pattern. Meaning 3 is characterized by literally making somebody or something do something, so it is not at all surprising to find the *to infinitive* complement selected by it.

Meaning 6 is perhaps more special in that it is the only meaning which allows *force* to occur without an object (in kernel sentences), so it follows that it occurs without an object *NP* complement.

3.1.2 *Collins COBUILD Advanced Learner's English Dictionary* and the *Valency Dictionary of English*

The *Collins COBUILD Advanced Learner's English Dictionary* (*COBUILD*) and the *Valency Dictionary of English* (*VDE*) by Herbst et al. are written based on the same *Bank of English* 520 million word corpus, so they are treated here together. The reason for including both is their very different approaches: *COBUILD* attempts to help language learners by identifying and listing the commonest usages, while the *VDE* attempts to give a complete description of the complements selected by every headword.

COBUILD lists both the noun meanings and the verb meanings of *force* under the same headword, so their full entry cannot be reproduced here. In addition, *COBUILD* explains the meanings of its keywords using full sentences and simple words in order not to confuse language learners, which, while a commendable endeavour, would look silly reproduced as is in a table here. Instead, I have taken the liberty to combine, discard and rewrite their listed meanings for better clarity in the context of the present paper. The edited meanings, example sentences illustrating them, and the complements found in those sentences, are shown in the table below:

Meaning	**Example sentence(s)**	**Complements**
sb/sth makes sb do sth	1. *He* was *forced to resign*… 2. I cannot *force you in this*… 3. They were grabbed by three men who appeared to *force them into a car*. 4. *She* was *forced to the conclusion* that she wouldn't get another paid job in her field.	NP to inf NP in NP NP into NP NP to NP
make sb accept or use sth	To f*orce this agreement on the nation* is wrong.	NP on/(upon)[1] NP
put sb into a particular position	They were *forcing her head under icy waters*…	NP under NP

[1] Mentioned in the text but no examples with this complement are given.

Meaning	Example sentence(s)	Complements
open sth by breaking it	1. That evening police *forced the door* of the flat… 2. He tried to *force the window open*…	NP NP open
go somewhere by pushing or breaking sth	1. They *forced their way through a police cordon*… 2. He *forced his way into a house* shouting for help.	NP through NP NP into NP
repress an emotion or desire[2]	Nancy *forced back tears*.	NP back
make sb act sooner or in public against their will[3]	He blamed the press for *forcing his hand*.	NP

The word form *forced* in phrases like "a forced smile" was listed both as a verb under the headword *force* and as an adjective under the headword *forced*. In this thesis, this usage is always understood as adjectival and discarded from further analysis, so it is not included here either.

Moving on to the other presentation of the *Bank of English* data, the *VDE* finds the following complements for *force*. As the *VDE* is not concerned with the meaning of the predications, only the complements and example sentences are listed.

Example sentence	Complement
I was gazing at him and he *forced* [a smile]$_{NP}$	*NP*
He tried to *force* [the window]$_{NP}$ [open]$_{Adj}$	*NP Adj (open)*
The rise of the nazis *forced* [the family]$_{NP}$ [to move]$_{to\ inf}$ to London	*NP to inf*
But would the Queen *force* [her youngest]$_{NP}$ *into* [a Windsor wedding]$_{NP}$	*NP into NP*
Dawa now confronted him directly with the yarn about a plot to *force* [him]$_{NP}$ *into* [marrying her]$_{V\text{-}ing}$	*NP into –ing*
She continues to *force on* [them]$_{NP}$ [her own fears which, in time, will create new inhibitions and confusion in each of her children]$_{NP}$	*NP on/upon NP*

[2] Listed under the headword *force back.*
[3] Listed under the headword *hand*.

Example sentence	Complement
He held her face tenderly and *forced* [a smile]$_{NP}$ *to* [his lips]$_{NP}$	*NP to NP*
[…] he might *force* [prices]$_{NP}$ [up]$_{Adv}$ by cutting oil output	NP *NP* ↔ *Adv (up)*

All the adverb complements in Herbst et al.'s examples are adverbs of place or direction: *away, down, out, up, into, off* and *through.* They can occur either before the object NP or after it.

3.1.3 Other dictionaries

The *Longman Dictionary of Contemporary English* (*LDCE*) boasts a thorough treatment of the verb *force* and gives an interesting look into the idiomatic uses of *force*. The following table lists the different meanings in the order given by the *LDCE*, illustrated by examples given in the *LDCE* when possible or by a direct quotation of the explanation when not, and the complements found in the example sentences.

Meaning	Example sentence(s)	Complements
Make sb do sth	1. Government troops have *forced the rebels to surrender* 2. Nobody *forced me* – it was my own decision 3. The women are *forced into accepting* low-paid jobs	NP to inf NP NP into -ing
force yourself (to do something)	1. I *forced myself to get* out of bed 2. Go on! *Force yourself*!	NP to inf NP
make sb/sth move	Firemen […] were *forced back* by the flames	NP back (NP into/out of)[4]
use physical force to get into/out of/through something	The doctor *forced his way through the crowd*	NP through NP (NP in/out)[4]

[4] Mentioned in the text but no examples with these complements are given.

Meaning	Example sentence(s)	Complements
open sth using physical force	Robbers *forced open the safe*	NP open (NP)[4]
force sb's hand, make sb do sth unwillingly or earlier	We didn't want to […] but *the fall in the dollar forced our hand*.	NP
force the issue, to do sth that makes sb else do sth (rather than waiting)	Rather than trying to *force the issue*, we gave them another day to decide	NP
force a smile/laugh	"to make yourself smile, laugh etc. even though you feel upset or annoyed"	(NP)[4]
force the pace	"to make other runners in a a race have to run faster by running ahead of them"	(NP)[4]

In addition, the following meanings were found under phrasal verbs that were listed separately from the main entry, making the *LDCE*'s entry paint a rather idiom-rich image of the usage possible with *force*:

Meaning	Example sentence(s)	Complements
try hard not to show emotions	Janet *forced back* her tears	NP back
make yourself swallow something	I managed to *force down a piece of stale bread*	NP down
force sth ↔ down	"make a plane have to land by threatening to attack it"	NP down
make sb accept sth they do not want	children with *piano lessons forced upon them*	NP (on)[4]/upon NP
coerce sb to tell something	I wasn't going to tell him but he *forced it out of me*	NP out of NP

The *Oxford Advanced Learner's Dictionary* (*OALD*) was also consulted. It does not make the distinction between the "make sth move" and "open sth" meanings, and includes the *OED* meaning 9, which the *LDCE* misses, but otherwise its treatment of *force* is fairly similar to that found in the

LDCE and show in the table above. The main reason to include the *OALD* here, however, is because it includes some usage guidance for the first meaning. Namely, that it is "often" used in the passive, as demonstrated by the third example from the *LDCE*. This is of course a specific claim that can be verified or disproven by the present study, so it shall be given scrutiny in the corpus section.

While these other dictionaries bring valuable insight into how *force* can be used, the primary focus in the second part of this thesis will be on the meanings found in the OED.

3.2 *Force* in selected grammars

Comprehensive Grammar of the English Language (1985) by Quirk et al is mostly concerned with the semantic function of *force*. They list it as a causative verb, where the infinitive clause in the *OBJ to inf* (*NP to inf*) it takes "identifies the resultant state" (1204) of the main verb.

In his *Grammar of Late Modern English* (1907), Poutsma does not discuss the complementational properties of *force* directly, but in his data he identifies four complements that *force* can select: [1] *NP*[5] *to inf* (36), [2] *NP from NP,* [3] *NP (up)on*[6]*NP* (146) and [4] *NP into –ing* (658).

[1] *I* was *forced to quit* my first lodgings by reason of an officious landlady
[2] Even the news of the September massacres could only *force from him a hope that France might abstain from any war of conquest*
[3] He never tried to *force on me his view*
[4] Perhaps it were better not to *force her into accepting* me.

In example [1], the actual complement of the relative active sentence is of course *NP to inf*. The examples [2] and [3], while active, also have the object NP in a marked position, with an intervening element between it and the predicate. [2] is justified as the object, "a hope that France might abstain from any war of conquest" is "heavy" (Huddleston and Pullum 2002, 247), but this does not hold for [3]: indeed, Huddleston and Pullum have a similar phrase marked as ungrammatical ("*I returned to her the books") despite Geoffrey Pullum's infamy as one of the

[5] Poutsma does not mention these noun phrases in the patterns he discusses, or highlight them in the examples.
[6] Poutsma treats *on* and *upon* as synonyms at least in this context, though he only provides an example with *on*.

more vocal descriptive grammarians. In any case, the two complement patterns are better analyzed as *NP PP* (or *NP from NP* and *NP on NP*), in their unmarked form.

Poutsma does note that phrases like [1], which he lists as a rough synonym for *to have [to do something]*, are usually "avoided before a passive infinitive", as in:

[5] The fuller form is *obliged to be retained*. (36)

Poutsma's work of course predates the term *horror aequi*[7], but in retrospect, it is more elegant to use this general principle to explain the avoidance of phrases like [5], rather than present it as a quirk of this specific type of verbs.

Huddleston and Pullum discuss *force* as a "catenative [verb] appearing only in the complex construction" (1233), which means it cannot occur without an object *NP*. As its object type is listed "ordinary", as opposed to raised, *force* is an object control predicate It is explicitly listed as taking "infinitival but not gerund-participial" complements, which seems to go against the evidence of *force* taking *into –ing* complements presented by the *VDE*, the *LDCE* and Poutsma. It should be noted here, though, that Huddleston and Pullum appear to categorically ignore all prepositional *–ing* complements for the most part of this discussion as they consider the *–ing* in *into –ing* as a complement of the preposition *into*.

Continuing with Huddleston and Pullum's analysis of *force,* its subtype is "plain-complex", meaning that it does not require a preposition complement, unlike "oblique-complex" verbs (1235) such as *appeal [to]*. *Force* "impose[s] selectional restrictions on the object and assign[s] an agentive role to the covert subject of the infinitival" (1235); these claims do not appear contrary to the example sentences from other quoted dictionaries and grammars, and seem to apply to the *into –ing* pattern as well. Still, perhaps a small digression is in order here to illustrate the claim, using a sentence from the *LDCE* as an example.

[6] Government troops have *forced the rebels [PRO] to surrender*

[7] The *horror aequi* principle is discussed further in 5.4.

In [6] the object "selectional restrictions" are imposed on is of course *the rebels*. The covert subject of *to surrender*, which has been marked as PRO in the example, is understood to take its reference from the object of *forced*, that is, *the rebels*. Thus, rather than take Huddleston and Pullum's sentence literally, it can be seen as a way of saying that *force* is what is usually called an object control predicate, as if it were an object raising predicate instead, it would not be placing "selectional restrictions" on its object or indeed, assigning any role to the subject of the lower verb. A fuller discussion of raising and control is perhaps somewhat tangential with regards to the topic of this thesis, but no objections shall be raised here to the idea that *force* is an object control predicate, if that is indeed what is meant, especially considering this argument is well supported in the literature: for example Sag and Pollar (1991, 65) explicitly list it is as a verb of the "order/permit type" which always have object control.

4 General grammatical characteristics of *force*

This section collects general grammatical data on the different aspects of the verb *force* as collected in research papers or as identified by the present author.

4.1 Entailment

Entailment as a term in semantics refers to a relation between statements. A statement can be said to entail a second sentence, meaning that if the first sentence is true, so is the second one. Conversely, if the second sentence is false, so is the first one.

Semantically similar predicates can sometimes be separated based on their entailment property. Consider the following sentences from *COBUILD* and the *VDE*:

[7] He was *forced to resign*...
[8] The women are *forced into accepting* low-paid jobs

Discussing the verb *pressure*, Rudanko (2003, 275) used the entailment property of verbs to show a distinction between the meanings of *to infinitive* and *into –ing* complement. With *force*, I would venture to suggest that no such distinction exists: as [7] entails the statement "he resigned", so does [8] entail that "the women are accepting low-paid jobs". If, "he" did not in fact resign, or if "the women" did not accept the jobs, the respective statements become contrary to truth.

In contrast, if we change the predicate in [7] to produce something like

[9]
a) He was *asked resign*...
b) He was *pressured to resign*...

the statement no longer entails that "he resigned". Conversely, even if "he" did not resign, it does not necessarily mean that he was not asked or pressured to do so.

The general conclusion based on the dictionary data presented thus far is that use of the predicate *force* followed by a sentential complement always entails the second statement in a

manner demonstrated in [7] and [8]. The topic shall be returned to if the corpus data suggests otherwise.

4.2 Telic and atelic predicates

This section investigates the verb *force* under the time schemata introduced by Zeno Vendler in 1957. Vendler categorizes verbs into those of "activity", "accomplishment", "achievement", "state". Examples he provides of each type, respectively:

[10] I am running.
[11] I am running a mile.
[12] It took him three hours to reach the top.
[13] How long did you love her?

To attempt to explain the categories concisely, "activity" has is completely ambivalent about its end point, whereas "accomplishment" has a specific goal which must be reached for the statement to be true (145). "Achievement" differs from "accomplishment" as for the duration of "accomplishment", the action could be described with the -ing form of the verb: "I am (currently) running a mile", whereas "I am (currently) reaching the top" would sound unnatural (147). The "state" category is distinguished by the lack of –ing form indicating continuous action. That is to say, Vendler argues that "I am loving her" is "nonsense" (144).

Force, it seems, should fall into the category of "accomplishment". To repeat at an example sentence from COBUILD:

[14] They were *forcing her head under icy waters*…

By process of elimination, there is a defined goal of getting the head underwater, so this is not an "activity". The verb indicates continuous action so this is not a "state". And finally, if "they" were asked what they were doing, they could answer that they currently are *forcing her head under icy waters*, so this is not an "achievement". Thus, it is an "accomplishment". But as Vendler points out, a verb may belong under more than one category, especially different meanings of a verb (150), so

as different usages of *force* are encountered in the corpus section, it shall be noted should they display signs of belonging to a category other than "accomplishment".

The concept of telicity can be tied into Vendler's categories, in that "accomplishments" and "achievements" are telic, whereas "states" and "activities" are atelic (Rudanko 2003, 276). For a verb like *pressure*, which denotes an "activity" with a *to* infinitive complement but becomes an "accomplishment" *with into –ing* complement, telicity can be used to show further distinction between the two complement types. While Rudanko identifies that the same is true at least for verbs like *cajole* and *coax* (276)*, force* does not readily yield to this type of test. The standard *in an hour/for an hour* test, using the example sentences [7] and [8], with the latter converted to past perfect to better show the disctintion, as suggested by Rudanko (2003, 277) gives the following sentences:

[15] He was forced to resign *in an hour/for an hour*
[16] The women were forced into accepting low-paid jobs *in an hour/for an hour*

Force seems to belong with *in an hour* with either sentential complement so it seems to always be telic. The *for an hour* version is of course also grammatical, but there the duration would refer to the lower verb—"resigned for an hour" or "accepted for an hour"—so it is not what is this test looks for.

5 On theory of complementation

This chapter aims to explain some key concepts on verb complementation in general, and especially as regards this thesis. Both what is and what is not a complement, as well as some general principles that effect the distribution of complements shall be briefly introduced.

5.1 Complements and adjuncts

"Complement" and "adjunct" are terms related to valency grammar. While the distinction is not always easily defined and can be disagreed upon (Huddleston 1984, 180), similar ideas have been proposed by various linguists independently of valency schema (Somers 1984, 508). Somers characterizes complements as elements "closely associated with the predicate", that are "expected" to occur with the predicate or "complete its meaning" (508). Complements are sometimes necessary for the sentence to remain grammatical, while adjuncts never are.

On the function of adjuncts, Somers writes that "adjuncts typically express the location in time or space of a predication [that is, the whole verb phrase as opposed to just the verb], its manner, consequence, purpose and so on. [...] Adjuncts in English tend to be adverbials and prepositional phrases" (526). The problem is that these characteristics can easily be found in complements as well; indeed, even the exact same element can be an adjunct when it occurs with one predicate and a complement when it occurs with another, as Somers' examples demonstrate (508):

[17]
a) He looked for his friend *in London.*
b) James lives *in London*.

In [17]a *in London* is an adjunct while in [17]b it is a complement. In [17]a, *in London* is extra information that does not affect the meaning of the predicate and can be removed without changing the meaning of the sentence beyond removing the information in the adjunct itself. In [17]b, while the sentence is still grammatical with *in London* removed, the meaning has changed: [17]b means that James has his home in London, while just "James lives" would mean that James is alive: the

removal of the complement from [17]b changes the meaning more profoundly than the removal of the adjunct from [17]a. Somers demonstrates the same concept with the verb *plough*, which changes "basic meaning" but can still a form grammatical sentence if its object NP complement is removed (510).

A number of tests to distinguish between complements and adjuncts have been proposed to distinguish between complements and adjuncts. Unfortunately, they tend to rely on the linguist's intuition about the grammaticality of sentences crafted by transforming the original in specific ways[8], which frankly is not much of a replacement for just intuitively distinguishing between complements and adjuncts—especially as that is how the tests' validity is confirmed in the first place. This is not to say the tests are not useful, they do serve a purpose in formalizing the key notions of valency theory, but their applicability actual to research is dubious.

For simplicity, in this thesis strings of complements, such as *NP to inf*, are analyzed as a whole. Further, the subject *NP* of the head verb is not marked or considered as a part of the complementation in this thesis.

5.2 The Great Complement Shift

The Great Complement Shift is a possibly overtly grandiose term referring to ongoing grammatical change in the complements selected by English verbs, notably the increased usage of *–ing* complements in lieu of the *to* infinitive complement. The term was coined by Rohdenburg in 2006, though the phenomena it covers had been at least partly discovered or thought to exist by others, for example Bolinger spends some time on the idea that *–ing* forms might be in the process of replacing *to* infinitives as the complements of some verbs, discussing verbs denoting perception as an example (1968, 125).

[8] The second chapter of Somers 1984 is devoted to discussing various existing tests and proposing a new one which, though more reliable than the others discussed, has the same fundamental flaw. It also produces sentences that are complex and often unlikely in natural language, making comparisons against corpus data difficult.

While the only *–ing* complements Rohdenburg only looks at are plain *–ing* and *to –ing*, further research has expanded the phenomenon to "non-prepositional and prepositional" *–ing* complements in general (Rudanko 2012, 267), so the possible effects of the Great Complement Shift will be considered in this thesis for the only *–ing* complement selected by *force*—the *NP into –ing* complement—and the *to* infinitive.

5.3 Complexity Principle

Following Rohdenburg's description (2006, 147), the complexity principle can be considered to include a number of observed grammatical phenomena that support the overall principle that in the case there is a choice between explicit and inexplicit constructions, the explicit one is more likely to be chosen in "cognitively complex environments". In general, "cognitively complex environment" includes grammatical features such as" "discontinuous constructions of various kinds, passive constructions, and the length of the subjects, objects, and subordinate clauses concerned" (Rohdenburg 1996, 149).

The main choice between alternative constructions identified as possible with *force* would be between the *to infinitive* complement and *into –ing* complement. Investigating *not*-negation of the lower verb, *–ing* complements have been identified as the comparatively less explicit sentential complement (Vosberg 2003, 211).

Another aspect of complexity suggested by Vosberg, known as the Extraction Principle, states that *to* infinitive complements are more common than *–ing* complements when a complement has been extracted across a clause boundary (2006, 21). In this case, the extracted complement would typically be the object NP of *force*.

Another applicable choice identified by Rohdenburg, is that between *on* and *upon*, where the latter is seen as the more explicit alternative as it is "more prominent phonologically" and as it more specific in meaning than *on* is (1996, 170). A choice between the two was identified for *force* by the *OED, COBUILD* and the *LDCE* in the "impose sth on sbd" meaning (meaning number 7 in the

OED table in 3.1.1). The *NP on/upon NP* complement is slightly different from what Rohdenburg investigates, but it will be interesting to discover if the difference in usage can be observed with it as well.

The expectation with *force* would then be, should the spread of *–ing* complements at the expense of *to* infinitive complements, as indicated by the great complement shift, be observed, that *to* infinitive complements would still maintain a compratively larger frequency in grammatically complex environments. Similarly, *NP upon NP* should be preferred over *NP on NP* where the extra explicitness is called for.

5.4 Horror aequi

The *horror aequi* principle states that there is a tendency to avoid using the same grammatical structure, for example the *to* infinitive or an *–ing* form, more than once in close succession (Vosberg 2006, 19). For *force*, the *horror aequi* principle suggests that when the head verb itself is *to force,* it would be unlikely to have a *to* infinitive complement, and that when the head verb is *forcing*, it would be unlikely to have an *into –ing* complement. Below are sentences to demonstrate the effect:

[18]
a) It is not nice *to force* him *to resign.*
b) It is not nice *to force* him *into resigning.*

[19]
a) *Forcing* him *into resigning* is not nice.
b) *Forcing* him *to resign* is not nice.

If *horror aequi* were to have an effect on the complementation of *force,* the expectation would be to find a prevalence of sentences like [18]b and [19]b and not very many sentences like [18]a and [19]a.

6 Corpus data

The corpus data used in this study comes from the first and third parts of the CLMETEV as well as the BNC. The CLMETEV data was gathered and the results were sorted into four separate text files per part of the CLMETEV, one for each conjugated form of the verb. As the total number of tokens was rather high, all data from a single part was then moved into one file and two tokens out of every three were removed. There are probably several methods for doing this, but in this study, the text file was loaded in Notepad++ (a free XML-editor), and a macro that skips three lines (a single token consists of an empty line, the text source line, and the actual text excerpt line) and deletes six lines (that is, two tokens) was recorded and then ran until it reached the end of the file.

To reflect the thinning, the "number of words" used in the frequency calculations will be the original multiplied by the ratio of analyzed tokens to all tokens, for example: $\frac{354}{1\,060} \times 3\,037\,607 \approx 1\,014\,446$ words, for CLMETEV part 1.

For BNC data, the built in thinning function was used. It should be noted here, that the different basis for thinning used may lead to some error due to the vastly differing amount of false positives in the results given by the two corpora. That is, the BNC data subjected to thinning was comprised only of tokens tagged as verbal and the accuracy of the tagging should in principle be in the high 90s, whereas the CLMETEV results that were thinned also contain all the nouns and adjectives in the data.

To make sure the numbers are not completely incomparable, the BNC frequencies were also extrapolated using the ratio of *force* as a verb to all tokens of *force* in the data to simulate the same calculation that was done with CLMETEV data. First, the following calculation was done to simulate the number of tokens for the word *force* needed to get 300 verbal tokens: $\frac{force\,(verb)}{force\,(all)} \times verbs\ wanted + verbs\ wanted = tokens\ needed$. For the Imaginative Prose section of the BNC, that is, $\frac{2\,258}{3\,799} \times 300 + 300 \approx 478$. Then this number was used to calculate the "number of words in

corpus" the same way it was with CLMETEV, as demonstrated above: $\frac{478}{3\,799} \times 16\,496\,408 \approx 2\,076\,967$ words. There is a less than 6% difference in the "number of words in corpus" derived this way to the way it is done normally with POS-tagged corpora, which corresponds roughly to an error of ±1 for a complement with a normalized frequency of 20. That is to say, the error is statistically insignificant to the kind of analysis done in this thesis, so it was decided it was better to leave the BNC data normalized in the standard way, even if it is not exactly comparable to the historical data.

6.1 CLEMETEV part 1

CLMETEV part 1, which spans the years from 1710 to 1780, had a total of 1 060 tokens for the lemma *force*. After the thinning described above, 354 tokens were left to be analysed: 199 for *force,* 60 for *forces*, 87 for *forced* and 8 for *forcing*. Of these 171 tokens of *force* and 55 tokens for *forces* were discarded as nouns, and three tokens for *forced* were discarded as adjectives. The verbal tokens for the lemma *force* were distributed as follows: 28 *force,* 5 *forces*, 84 *forced* and 8 *forcing*, or 125 in total. Some examples of the kind of tokens that were discarded:

[20] She should not have given cause for any part of my conduct to her to wear the least aspect of compulsion or *force*. (Richardson 1740)
[21] As Tangier was in danger of being taken by the Moors, he offered to head the *forces* which were to defend it […] (Cibber 1703)
[22] It happened very favourably for the new system, that under a *forced* coalition there rankled an incurable alienation and disgust between the parties [...] (Burke 1770)

Sentences [20] and [21] represent the noun *force*: in the former *force* is placed in direct comparison with another *NP*, *compulsion*, and in the latter it is preceded by the definite article. The *forced* in [22] was analysed as an attributive adjective describing the noun *coalition*. While it is acknowledged that there may be room for some disagreement in this decision, as mentioned in 3.1.2, this type of usage shall be consistently analysed as adjectival in this thesis.

6.1.1 CLMETEV part 1 by verb form

In this section, the observed complements of *force* and their comparative frequency are analysed. The 125 verbal tokens were distributed by complement and verb form as shown in the following table, sorted by frequency:

Form / **Complement**	*Force*	*Forces*	*Forced*		*Forcing*	**Total**	**%**	**NF** per million
			Active	Passive				
NP to inf	6	2	9	43		**60**	**48**	**59,1**
NP into NP	4	1	1	6	3	**15**	**12**	**14,8**
NP	8		2	3	1	**14**	**11,2**	**13,8**
NP from NP	2		1	2	1	**6**	**4,8**	**5,9**
NP upon NP	2			3		**5**	**4,0**	**4,9**
NP to NP	2		1	1	1	**5**	**4,0**	**4,9**
NP away			1	1		**2**	**1,6**	**2,0**
NP between NP[9]	1		1			**2**	**1,6**	**2,0**
NP out of NP			2			**2**	**1,6**	**2,0**
NP through NP		1	1			**2**	**1,6**	**2,0**
into NP		1				**1**	**0,8**	**1,0**
through NP	1					**1**	**0,8**	**1,0**
NP abroad				1		**1**	**0,8**	**1,0**
NP back			1			**1**	**0,8**	**1,0**
NP from NP to inf				1		**1**	**0,8**	**1,0**
NP from NP to NP			1			**1**	**0,8**	**1,0**
NP in					1	**1**	**0,8**	**1,0**
NP in NP	1					**1**	**0,8**	**1,0**
NP open			1			**1**	**0,8**	**1,0**
NP out				1		**1**	**0,8**	**1,0**
NP out to inf	1					**1**	**0,8**	**1,0**
NP towards NP					1	**1**	**0,8**	**1,0**
Total	**28**	**5**	**22**	**62**	**8**	**125**	**100**	**123,2**

Active voice was more common than passive by the smallest possible margin, 63 to 62 tokens. The prevalence of passives with the *NP to inf* complement seems like it might be worth keeping an eye on, but there is also a chance that, rather than mirror general English usage of the period, the

[9] Includes both *between* and *betwixt* which are analysed together in this thesis due to the latter having been completely replaced by the former in present day English.

numbers have been swayed by author bias: 18 of the 84 tokens for *forced* are from the same author and 16 of those 18 are *NP to inf* in passive voice. The later parts of the corpus will hopefully reveal the truth of the matter.

The complement patterns in the table reflect the unmarked order—that is, before passivization or *wh*-movement, without negation and with the object (when it exists) immediately after the predicate—with any elided elements in place. Some examples to clarify this:

[23] *Lady Pomfret* was *forced to air* Lady Mary Wortley's bedchamber. (Walpole 1735-1748)
[24] [...] and cut off *those parties* which necessity should *force out to forage* [...] (Johnson 1740-1)
[25] [...] and he was very near *forcing from her yet greater liberties* [...] (Haywood 1744)
[26] His eunuchs, who *forced away wives and virgins*, examined their naked charms with anxious curiosity [...] (Gibbon 1776)
[27] […] they would *force him*, not only *to turn out* all the old ministry, but the new one too […] (Walpole 1735-48)

In determining the complements, [23] is analysed as "[somebody] forced Lady Pomfret to air[...]", [24] as "[...]necessity should force those parties out to forage [...]", [25] as "[...]and he was very near forcing yet greater liberties from her[...] ", [26] as "[...] who forced wives and virgins away [...]" and [27] as "[...] they would force him to turn out [...]".

The effect those marked forms might have on complement distribution, namely between *NP to inf* and *NP into –ing* or *NP upon NP* and *NP on NP*, has not been forgotten: this simplification is simply in order to keep the complement table down to a manageable size. As this data set had tokens only for the first, more explicit, alternative from both pairs, no further investigation into the effects of complexity principle was deemed needed, or indeed possible, at this point. Let it be noted, though, that of all the tokens for *NP upon NP*, only one was an unmarked, active sentence:

[28] […] Germans and Spaniards united to *force the pretender upon us* […] (Johnson 1740-1)

Of the rest, three were passive, once with *not*-negation, and one had shifted object NP:

[29] […] *the pretender* could not be *forced upon us* without an army […] (Johnson 1740-1)
[30] *It* might, indeed, suffer some loss and inconveniency, and be *forced upon some of those expedients* […] (Smith 1766)
[31] He forbore to *force upon them unwelcome knowledge* […] (Johnson 1759)

The matter shall be returned to, as required, in the analysis of the succeeding data sets.

In [23] and [24], *force* is still telic as predicted before, and while appending an *in an hour* sometimes produces rather awkward sentences, it seems impossible to find any examples in the data where a *for an hour* would not refer to the lower verb:

[32] […] many people have been forced to hire new labourers. (Walpole 1735-48)
[33] […] and to force my idle fears to give way to hopes so much better grounded. (Richardson 1740)

Thus the conclusion that *force* is always telic with sentential complements holds. The situation less obvious for some non-sentential complements, such as [25], so the difference will be demonstrated here with the sentence converted to past tense:

[34] [I] forced from her yet greater liberties *in an hour/for an hour*

Either *in an hour* or *for an hour* is of course grammatical with [34], but only the former refers to the duration of forcing: "It took me an hour to force yet greater liberties from her" versus "I forced from her yet greater liberties [and enjoye them] for an hour".

The corpus data seems to not to depart too much from what the dictionary entries lead to expect, in terms of complements found. Their distribution between meanings is a different matter, however, and shall be looked at in more detail in the next section.

As for missing complements in the corpus data, the *into –ing* pattern suggested by the *VDE,* among others, was not found. As that alternative for the *NP to inf* does not exist in the data, there is little room for *horror aequi* to manifest itself either. Granted, no tokens for *to force to inf* were found in the data, but that alone is insufficient proof. Presumably, the *into –ing* complement will

make an appearance in the later parts of CLMETEV or the BNC by the latest, so the matter shall rest for now. Similarly, the matter of adverbials shall have to wait until all corpus data has been analyzed, though it should be said it is unlikely that area will contain many surprises.

The intransitive use of *force* was attested with the complements *into NP* and *through NP*, with one token for each.

[35] [...] to see Colonel Dardoff with his regiment *force thro' the Calmucks*, and arrive timely enough to disengage the king [...] (Haywood 1744)
[36] But whatever *forces into a branch of trade* […] (Smith 1766)

Disappointingly, [35] is semantically distant from [25] despite the obvious potential of the phrase in bodice-rippers. The meaning of *force* in both [35] and [36] seems to be as recorded by *OED*, with both falling under meaning 6.

6.1.2 CLMETEV part 1 data by meaning

In this section, the complements found in CLMETEV part 1 data are analysed by meaning of the verb-complement pair, as shown in the table below. The focus is turned on both frequently find complements—by seeing what kind of meanings the complement occurs with—and on frequent or otherwise interesting meanings, by looking at the complementation they occur with, as judged appropriate.

Meaning / **Complement**	1	2	3	4	5	6	7	8	9	10	11	**Total**
NP to inf		2	58									**60**
NP into NP		11			2		1	1				**15**
NP		2		3			1	6	1	1		**14**
NP from NP									6			**6**
NP upon NP							5					**5**
NP to NP		1	3				1					**5**

Meaning / Complement	1	2	3	4	5	6	7	8	9	10	11	**Total**
NP away					2							**2**
NP between NP[10]					1			1				**2**
NP out of NP					2							**2**
NP through NP								2				**2**
into NP						1						**1**
through NP						1						**1**
NP abroad					1							**1**
NP back					1							**1**
NP from NP to inf			1									**1**
NP from NP to NP					1							**1**
NP in					1							**1**
NP in NP		1										**1**
NP open				1								**1**
NP out					1							**1**
NP out to inf			1									**1**
NP towards NP					1							**1**
Total	**0**	**17**	**63**	**4**	**13**	**2**	**8**	**10**	**7**	**1**	**0**	**125**
%	**0**	**13,6**	**50,4**	**3,2**	**10,4**	**1,6**	**6,4**	**8**	**5,6**	**0,8**	**0**	**100**
NF per million	**0**	**16,8**	**62,1**	**3,9**	**12,8**	**2,0**	**7,9**	**9,9**	**6,9**	**1,0**	**0**	**123,2**

Perhaps predictably, the meaning 3 ("force sbd to do sth") was by far the most common, accounting for nearly a half of all tokens in the data with its near unquestioned claim for the also common *NP to inf* complement. The usage of this complement in other meanings shall be explored more extensively with the BNC data, as that section had more tokens for meanings other than meaning 3.

As meaning 3 was almost exclusively found with the *NP to inf* complement, it is easy to see from the table in section 6.1.1 that the usage was predominantly in the passive voice. Both of the meaning 2 ("to constrain, to compel") tokens of *NP to inf* complement were in active voice, so meaning 3 is left with a 15 to 43 ratio, or almost three passives for every token with *to* infinitival

[10] Includes both *between* and *betwixt* which are analysed together in this thesis due to the latter having been completely replaced by the former in present day English.

complement , which means that *OALD's* claim that this meaning is "often" used in the passive seems to have been correct in 18th century British English.

While *NP from NP* was exclusively found with the meaning 9 ("to take by force, to draw forth"), its more complicated variations were associated with two different meanings, demonstrated below in their respective order:

[37] Meaning 3: The *landlord* was now forced *from his post to furnish* his numerous guests with beer […] (Fielding 1749)
[38] Meaning 5: The monopoly of the colony trade has, in all cases, *forced* some part of the capital of Great Britain *from* a foreign trade of consumption carried on with a neighbouring *to* one carried on with a more distant country. (Smith 1766)[11]
[39] Meaning 9: […] the very whimsical laws, which they most circumstantially imposed on the marriage-bed, would *force a smile from the young* and a blush from the fair. (Gibbon 1776)

Looking at the sentences in reverse order, [39] seems quite similar in meaning to the quotation *OED* cites in its entry, and falls clearly under meaning 9. [38] is not as much about "taking sth out" as it is about movement from one place to another, so this token was analysed under as an analogous use of the "drive sth by force" meaning. Lastly, while [37] has a directional aspect from the *from* part of the complement, but the *to inf* at the end makes grouping it with most of the other *to* infinitives under meaning 3 the most natural solution.

Meaning 6 ("to make one's way by force") is the intransitive usage of *force* and thus doomed to fairly low frequency. Both tokens were already discussed in the previous section and the remote hope of finding an intransitive *force* with a *to* infinitive, a type of usage that according to literature should have gone extinct by Early Modern English with almost all English verbs (Fanego 2007, 179), did not materialize, so there is not much left to discuss. Meanwhile, meaning 8 ("to bring about by force") includes semantically very similar transitive usages, such as:

[40] […] the rain had *forced its way through the ceiling* […] (Reeve 1777)
[41] […] the enraged soldiers were *forcing their way into his tent* […] (Gibbon 1776)

[11] The CLMETEV sample lacked enough context to correctly determine the complement of this token, so the full text of *Wealth of Nations* was referred to instead. The long *NP*s found in the complement were left unitalicized for ease of reading.

where even the complement can be, save for the addition of the object *NP*, otherwise identical to those found with meaning 6.

Meaning 4 suffers from similar "poaching" by meaning 8 when it comes to its "overpower" aspect:

[42] *The tower* was instantly *forced* […] (Gibbon 1776)
[43] Though the French have had such a bloody loss, I cannot but think they will carry their point, and *force their passage* into Italy. (Walpole 1735-48)

While the two sentences above seem fairly similar in their reference to a succesful army manouver, only [42] falls under meaning 4: sentences like [43] have been classified under meaning 8 as the *OED* groups "forcing a passage" with "forcing one's way", instead of "overpowering by force". Another result of analysing the meaning like this, is that "their passage" in [43] has to be understood to mean "they forcibly moved to somewhere (which is then specified to be Italy)"—as opposed to something like "they fought to secure a route (and then moved through the route into Italy)". This in turns means that "into Italy" has to be analysed as an adjunct instead of as part of an *NP into NP* complement, as one might otherwise be tempted to do. In the former analysis, it does not change the whole predication beyond the extra information it itself carries, whereas in the latter analysis it changes the meaning from "securing a passage" into "moving through a passage", and is thus part of the complement.

Meaning 4's other aspect, that of "forcing sth open" included only one token in the CLMETEV part 1 data, and even that was in a figurative sense, rather than in reference to an actual physical door or a lock:

[44] Mean while the sudden affluence occasioned by trade, *forced open all the sluices of luxury* […] (Smollet 1771)

Meaning 5 ("to drive by force") selects a wide variety of different complements, almost seeming to have a unique complement for each token found, which nevertheless combine to make meaning 5 the third-most common. It seems that meaning 5 is not interested in any specific grammatical function of a complement, but rather is satisfied with any complement as long as it carries the semantic function of supplying a direction for the force being applied. Below are listed some examples of the directional complements found with meaning 5:

[45] […] by *forcing towards it a much greater proportion of the capital of Great Britain* […] (Smith 1766)
[46] Upon which, a well drest man […] clasped my daughter round the waist, and *forcing her in*, bid the postillion drive on, so that they were out of sight in a moment. (Goldsmith 1766)
[47] They serve, indeed, to *force Shipping coming into the Bay between 2 Fires* […] (Cook 1768-71)
[48] By a wheel which the stream turned he *forced the water into a tower*, whence it was distributed to all the apartments of the palace. (Johnson 1759)

The *NP between NP* complement, found in [47], is also found in similar, but reflexive, usage under meaning 8 and of course the *NP into NP* complement, found in [48], is used extensively in a non-directional context under meaning 2.

Meaning 10 ("to hasten the growth of sth artificially") is fairly specific so finding even one token in 125 was not a given, and on the other hand, much more than that would have been surprising.

[49] I did not meet anywhere with a Grape that had its perfect Flavour, unless *the Vines* were *forced* […] (Bradley 1732)

The complement here, too, is as expected from *OED*. The other specific-seeming meanings, 1 ("to ravish") and 11 ("to reinforce"), were not found at all in the data, but obviously they did exist at the time as evidenced by the *OED*: the most that can be said based on the present data is that they are rarer than one in a million words in CLMETEV part 1.

6.2 CLMETEV part 3

CLMETEV part 3, which spans the years from 1850 to 1920 had a total of 2 055 tokens. After the thinning, done in the same way it was with CLMETEV part 1 data, 685 tokens were left to be analysed: 404 for *force,* 120 for *forces*, 144 for *forced* and 17 for *forcing*. Of these 356 tokens of *force,* 115 tokens for *forces* and two tokens for *forcing* were discarded as nouns, and 15 tokens for *forced* were discarded as adjectives. Examples of the discarded tokens are listed below in respective order:

[50] […] he flew through the tangled saplings with a *force* that seemed to defy resistance. (Baker 1854)
[51] The impulse which was given to the Mahdi's cause was sufficient to raise a fierce opposition to the invading *forces*. (Churchill 1899)
[52] Nevertheless I think as a matter of fact that there is a little *forcing*. (Butler 1912)
[53] […] she broke her position and moved towards him, taking up the drawing in her hand with a *forced* interest. (Bagnold 1920)

The verbal tokens for the lemma *force* were distributed as follows: 48 *force,* 5 *forces*, 129 *forced* and15 *forcing*, or 197 in total. This included one token with no complement and one token where the complement could not be identified due to the sentence being interrupted before the complement fully is realized.

[54] To advise is not to *force,* Barbara. (Brebner 1910)
[55] She could *force him to*—no, it isn't a house she wants, she wants him. (Meredith 1895)

[55] clearly has a complement, but the speech is interrupted before it becomes clear whether a *NP to inf* or *NP to NP* is intended. These tokens, though of course verbs, are thus not included in any further analysis.

6.2.1 CLMETEV part 3 data by verb form

This section analyses the CLMETEV part 3 data sorted by complement and verb form. Attention is paid to the relative frequencies of the different complements, and of course, which complements were indeed found in the data.

The remaining 195 verbal tokens were distributed by complement as shown in the following table, sorted by frequency:

Form / **Complement**	*Force*	*Forces*	*Forced* Active	*Forced* Passive	*Forcing*	**Total**	**%**	**NF** per million[12]
NP to inf	9		12	52	5	**78**	**40,0**	**37,4**
NP upon NP	5		5	12		**22**	**11,3**	**10,6**
NP	10	2	6	3		**21**	**10,8**	**10,1**
NP into NP[13]	6		1	5	3	**15**	**7,7**	**7,2**
NP on NP	3		4	6		**13**	**6,7**	**6,2**
NP through NP	1	1	1	2	1	**6**	**3,1**	**2,9**
NP from NP	2		1	1	1	**5**	**2,6**	**2,4**
NP to NP			3	2		**5**	**2,6**	**2,4**
NP down	1	1	1			**3**	**1,5**	**14**
NP apart	1	1				**2**	**1,0**	**1,0**
NP back	1		1			**2**	**1,0**	**1,0**
NP back into NP				1	1	**2**	**1,0**	**1,0**
NP back to NP	1		1			**2**	**1,0**	**1,0**
NP beyond NP	1			1		**2**	**1,0**	**1,0**
NP down NP	1		1			**2**	**1,0**	**1,0**
NP against NP			1			**1**	**0,5**	**0,5**
NP at NP					1	**1**	**0,5**	**0,5**
NP from NP into NP			1			**1**	**0,5**	**0,5**
NP in	1					**1**	**0,5**	**0,5**
NP in upon NP				1		**1**	**0,5**	**0,5**
NP inward				1		**1**	**0,5**	**0,5**
NP on				1		**1**	**0,5**	**0,5**
NP open					1	**1**	**0,5**	**0,5**
NP out	1					**1**	**0,5**	**0,5**
NP out of NP into NP	1					**1**	**0,5**	**0,5**
NP over NP					1	**1**	**0,5**	**0,5**
NP through	1					**1**	**0,5**	**0,5**
NP together					1	**1**	**0,5**	**0,5**
NP towards NP				1		**1**	**0,5**	**0,5**
NP up into NP			1			**1**	**0,5**	**0,5**
Total	**46**	**5**	**40**	**89**	**15**	**195**	**100**	**93,6**

[12] The amount of words used in the calculation was: $\frac{685}{2\,055} \times 6\,251\,564 \approx 2\,083\,855$

[13] Includes one token of ”in to”, with a space.

The sentential complement *NP to inf* unsurprisingly continues as the most prevalent complement, though its frequency has plummeted and the overall frequency with it. The other predicted sentential complement, *into –ing* still did not make an appearance. Presuming it does appear in the Present Day English data, it is possible its widespread use with *force* is a very recent phenomenon.

The gap between active and passive voice has widened somewhat when all complements are considered, but the one to two ratio of actives to passives with the *NP to in inf* complement is still observed. This allays the fears raised in the analysis of CLMETEV part 1 that the phenomenon might have been caused by the bias of a single author. The following sentences illustrate the usage of *NP to inf* complement in passive and active voice, respectively:

[56] […] his hair was as rough as his conduct; hardly at the pistol's point could *he* be *forced to put* oil on it. (Bennett 1908)

[57] I must now relate the strange and perverse succession of events which *forced them to employ* a resource so dangerous and face a peril so immense. (Hope 1898)

The lack of *into –ing* complement is somewhat surprising as Poutsma recognized it in his grammar, which is built using data from roughly the same era. Indeed, it should be stressed here that this lack of tokens does not to imply that the pattern is not found at all before Present Day English: there is in fact evidence of the transitive *into –ing* complement being used with *force* even earlier. Rudanko (unpublished) uses an extract from CLMETEV part 2 as an example when discussing the pattern. Furthermore, as this study only uses a sample of CLMETEV part 3, it is possible that the pattern is found there too; it is just statistically unlikely to be very common.

The following complements that occurred in the first part of CLMETEV were not found in part 3: *into NP, NP abroad, NP away, NP between NP, NP in NP, NP out of NP, NP out to inf* and *through NP*. These were all rather uncommon even in part 1, so no dramatic conclusions shall be drawn from this, apart from noting the fact that now no intransitive usages of *force* remain in the

data. Similarly, a large number of new complements with only one or two tokens were found in part 3: *force* seems to be rather open for different prepositions and adverbs of direction as complements, which is not obvious from the dictionaries considered in section 3.1. As can be seen from the list, both objectless complements found in CLMETEV part 1 were no longer present in the data, and as no new objectless complements emerged, that could be tentatively considered as a shift in the complementation of *force, s*ignificant for marking the disappearance from use of the intransitive form of the verb.

Perhaps more interesting is the appearance of the *NP on NP* complement and its relative popularity with 13 tokens and a higher frequency than *NP upon NP* had in CLMETEV part 1.

[58] I *forced my view on him*. (Butler 1912)
[59] *Safeguards* would soon have been *forced on the builders*. (Beesley 1912)

However, here the latter shows no signs of being replaced by *NP on NP*. In fact, *NP upon NP* has gained in popularity since part 1 of CLMETEV and is now the second most popular complement with 22 tokens and a doubled frequency (even as the overall frequency of the verb *force* has decreased!) Some examples to demonstrate the complement follow:

[60] In another part of the hill an altogether different scene began to *force itself upon the eye* towards midday. (Hardy 1874)
[61] *The impression* thus *forced upon Marius* connected itself with a feeling […] (Pater 1885)

The *on/upon* complement pair was noted as a potential setting to observe the effects of complexity principle, with the *upon* version supposed to be more likely in grammatically complex settings. In [59] the *on* version was shown in the passive, and it can be seen from the table in the previous section that passives are about as common as actives with *NP on NP*. In the active sentences, there were two tokens where the object had been extracted and three where the object *NP* was deemed heavy enough to be shifted right in the sentence, both cases demonstrated below in respective order:

[62] Why, it isn't even wholesome stuff, *the kind of reading* that most of you force on the public. (Gissing 1891)
[63] You assented; you forced on me *no long argumentative homilies* […] (Meredith 1870)

That means sentences with extra complexity factors are actually more common with *NP on NP* than those with none, with only two out of 13 tokens that feature no complexity factors, as shown in [58].

With *NP upon NP*, there were 12 passive sentences, two sentences where the object had been extracted and two sentences with no extra complexity factors. However, one of the "normal" sentences featured a rather heavy object *NP* which was not shifted:

[64] Sooner or later the internal pressure of public opinion would force *the adoption of a similar policy* upon the Government of every civilized country in Europe. (Carpenter 1915)

This could be constituted as evidence of the extra explicitness of *upon*, that it is more tolerant of heavy objects between it and the head verb. Of course, one token by itself is not a solid basis for far-reaching conclusions, and overall the suggested effect of complexity principle and the comparative explicitness of *upon* failed to have any effect on the complementation of *force.* If anything, the results were the opposite of what was expected, though with the mixed results with *upon*, the safest conclusion is that whatever it is that governs the choice between *on* and *upon* in complements of *force*, grammatical complexity has little to do with it.

As can be seen towards the bottom of the above table, the verb *force* also allows for rather complex chains of complements:

[65] Hands seized her and *forced* [*her*]$_{NP}$ *from* [*the subaqueous grotto where she had hidden*]$_{NP}$ *into* [*new alarms*]$_{NP}$. (Bennett 1908)
[66] It would also tend to *force* [*population*]$_{NP}$ *out of* [*districts intrisically* [sic] *unhealthy*]$_{NP}$ *into* [*districts intrinsically healthy*]$_{NP}$. (Wells, 1902-3)

These kinds of complements are of course rare, but their existence suggests that the total number of different complements *force* can take is a lot higher than a small corpus can hope to reveal.

NP from NP has suffered a drastic drop in frequency, but with five tokens it remains noticeably more common than the "one-hit-wonder" complements that populate the bottom half of the table yet again.

[67] He could not devise a scheme for *forcing the truth from his rival*. (Brebner 1910)
[68] […] as soon as she could summon courage to *force herself from the presence of her unfortunate sister.* (Collins 1859-60)

The *NP from NP* complement, especially in [68] and [67] seems indistinguishable from the first half of the *NP from NP into NP* in [65], and it does seem that the latter is, as far as meaning is considered, a rather straigthforward combination of two separate verb phrases—*force NP from NP* and *force NP into NP*—where the second occurrence of the verb and the object have been elided. Were the linking *and* present, it would have been analyzed as such, and not as a single verb phrase with a single complex complement as was done now.

6.2.2 CLMETEV part 3 data by meaning

This section provides a different view at the complementation data of *force* found in the CLMETEV part 3, this time sorting the results based on the meanings found in OED, rather than on the conjugations of the head verb.

Meaning / **Complement**	1	2	3	4	5	6	7	8	9	10	11	**Total**
NP to inf			78									**78**
NP upon NP							22					**22**
NP		7		6				4	4			**21**
NP into NP[14]		7			3		1	4				**15**
NP on NP							13					**13**
NP through NP					2		1	3				**6**
NP from NP								2	3			**5**
NP to NP		4			1							**5**
NP down		2			1							**3**

[14] Includes one token of "in to", with a space.

Meaning / **Complement**	1	2	3	4	5	6	7	8	9	10	11	**Total**
NP apart					2							**2**
NP back				1	1							**2**
NP back into NP					2							**2**
NP back to NP		1			1							**2**
NP beyond NP		1								1		**2**
NP down NP		1						1				**2**
NP against NP		1										**1**
NP at NP								1				**1**
NP from NP into NP					1							**1**
NP in								1				**1**
NP in upon NP							1					**1**
NP inward					1							**1**
NP on					1							**1**
NP open		1										**1**
NP out					1							**1**
NP out of NP into NP					1							**1**
NP over NP								1				**1**
NP through								1				**1**
NP together					1							**1**
NP towards NP					1							**1**
NP up into NP					1							**1**
Total	**0**	**25**	**78**	**7**	**21**	**0**	**38**	**18**	**7**	**1**	**0**	**195**
%	**0**	**12,8**	**40**	**3,6**	**10,8**	**0**	**19,5**	**9,2**	**3,6**	**0,5**	**0**	**100**
NF per million	**0**	**12,0**	**37,4**	**3,4**	**10,1**	**0**	**18,2**	**8,6**	**3,4**	**0,5**	**0**	**93,3**

Meaning 3 is again tightly connected with the *NP to inf* complement and still by far the most common meaning in the data. This time there were no other complements found with the meaning, nor was the complement found with any other meaning. Only meaning 7 shows a similar exclusive complementation pattern. The appearance of *NP on NP* was discussed in more detail in the previous section, but from the above table showing distribution by meaning, it can also be seen that it is bound to meaning 7, same as *NP upon NP*. It would seem that Herbst et al. are somewhat justified semantically in grouping these patterns together, as shown in the *VDE* table in section 3.1.3, as is Poutsma in [3].

Meanings 2 and 5 remain rather common with meaning 8 right behind them, all with similar enough percentages to CLMETEV part 1 data. Meanwhile, meaning 7 has surged in popularity to nearly 20% of the total tokens. Meaning 7, of course, has an exclusive claim to a new, common complement in *NP on NP*, and at the core of its popularity is the peaking of the older alternative, *NP upon NP*.

The plain *NP* complement was found with meanings 2, 4, 8 and 9. Below are examples illustrating each meaning in respective order:

[69] Meaning 2: Sir John *forces my hand* […] (Brebner 1910)
[70] Meaning 4: London in danger of suffocation! The Kingston and Richmond *defences forced*! (Wells 1897)
[71] Meaning 8: "G-good-night," said Peel-Swynnerton, trying to *force the tone of fellowship* and not succeeding. (Bennett 1908)
[72] Meaning 9: once more matter asserted its supremacy, and arrested function *forced the question*: Where is now that independent entity you call the soul? (Linton 1885)

Meaning 2 was found, as in [69] in the idiom of "forcing sbd's hand", which was listed in the *OED* under this meaning, which makes for rather easy analysis. Other instances of this meaning include compelling sbd to something, but without a *to* infinitive in the complement to clearly express what it is. Meaning 4 was found in both the "overpower by force" meaning (two tokens), as in [70], and in "break sth open" meaning (four tokens). The line between meanings 8 and 9 was sometimes hard to draw: while [71] matches the patterns found in the *OED* rather neatly, the answer to whether [72] means "bring about by force" (meaning 8) or "draw forth" (meaning 9) is much more open to interpretation.

With regards to [70], without extra context it would of course be impossible to be certain whether the intended meaning is indeed 4, "overpower" or 11, "reinforce". However, as the work in question is in public domain it is easy to confirm that this passage is indeed in reference to Martian attack which has "smothered our batteries, destroyed Kingston, Richmond and Wimbledon" (Wells 1897, 132)

Like *NP*, *NP into NP* was found with four different meanings. Each meaning is demonstrated below:

[73] Meaning 2: […] *the fundamental unity of men in the family of God* is the one enduring reality, even when we are *forced into an apparent denial of it*. (Cheyne 1914)
[74] But even *the Greek* could not be *forced into such a meaning as this* […] (Cassels 1889)
[75] Meaning 5: One of these bees, standing on the roof of the hive, begins to *force her head into the wax* […] (Buckley 1879)
[76] Meaning 7: […] *the definite ideas of religion* which my parents were continuing, with too mechanical a persistency, to *force into my nature* […] (Gosse 1907)
[77] Meaning 8: […] with forty pioneers swinging blithely their axes as they *force their way in to the wood* […] (Booth 1890)

Meaning 2 was sometimes hard to distinguish from meaning 7 with this complement, but ultimately all cases like [73] where the someone is forced in a more "constrained" situation were put under meaning 2, with [76] the only remaining token where something was considered to be "imposed". Meaning 2 also had more easily analyzable tokens, like [74], which is very similar to an actual *OED* quotation. The tokens for meanings 5 and 8, as shown in [75] and [77] respectively, were also rather straigthforward to analyze, though the *OED* does not list meaning 8 with this complement.

Of the rare meanings, 1 and 11 were again not found in the data. As there were no intransitive complements, naturally meaning 6 was not found any more either. Meaning 10 again had only one token, thought even that was a figurative use that did not refer to actual plants:

[78] *Ideas and opinions*, like living organisms, have a normal *rate of growth* which cannot be either checked or *forced beyond a certain point*. (Butler 1912)

As the comparison to the growth of "living organisms" was made explicit, meaning 10 felt the most natural place for this token.

6.3 BNC

The British National Corpus was used as the third and final source of data, covering the Present Day English part of the comparison. The exact search string used was {force/V} which is a lemma

search for the verb *force*. As previously mentioned, this search was restricted to the Imaginative Prose section to find data that matches the style of CLMETEV as closely as possible. The search produced 2 258 hits, and unlike CLMETEV, there should not be any significant amount of false positives due to the fairly functional part-of-speech tagging. It should be noted that the BNC does indeed have wrongly or ambiguously POS-tagged words due to the limitations of the automatic tagging software used; the search string used in this study achieves neither perfect recall nor precision. However, lacking any evidence to suggest this would influence the ratio of complements included and acknowledging that even the present recall provides more results than can reasonably be analyzed, more complex queries were not deemed necessary.

The 2 258 tokens retrieved were thinned to 300 using the BNC's built-in thinning function. In order to facilitate verifying the results, the default setting of producing a reproducable data set was used. The built-in sorting functions were used to facilitate data analysis: sorting by node provides an easy way to confirm total token counts for each word form, sorting by first word to the right of the node groups most noun phrases (starting with *a*, *an* or *the*) and so on.

Despite the BNC's part of speech tagging, two of the results had to be discarded as adjectival, and one was discarded due to insufficient context to determine the full complement of the head verb. The three discarded tokens were found in the following sentences, respectively:

[79] HA5 1998 'But the woman tempted me?' she suggested, her laugh a trifle *forced*.
[80] H9H 793 'It's early days yet,' said Tom, the cheerfulness in his manner a little *forced*.
[81] FBG 1200 but largely unprofitable and *forced its creator*

However, one the tokens for *forcing* included an extra token, also for *forcing*, in the sentence it was in, which was then added to the data.

After discarding the three invalid tokens and adding one extra token, there were a total of 48 tokens of the word form *force,* 3 of *forces,* 201 of *forced* and 46 of *forcing* for a total of 298 tokens to be analyzed for complementation and meaning.

6.3.1 BNC data by verb form

This section analyses the BNC data sorted by complement and verb form. Attention is paid to the relative frequencies of the different complements. The following table shows the distribution of complements between each form of the veb *force:*

Form / **Complement**	*Force*	*Forces*	*Forced*		*Forcing*	**Total**	**%**	**NF** per million[15]
			Active	Passive				
NP to inf	15		48	84+1	17	**165**	**55,4**	**75,3**
NP	8	1	13	6	4	**32**	**10,7**	**14,6**
NP into NP	7		7	4	6	**24**	**8,1**	**11,0**
NP open	3	1	3		1	**8**	**2,7**	**3,7**
NP from NP	1		2	3		**6**	**2,0**	**2,7**
NP through NP	1		3	1	1	**6**	**2,0**	**2,7**
NP to NP	1	1	2		2	**6**	**2,0**	**2,7**
NP out	2			2	1	**5**	**1,7**	**2,3**
NP between NP			2	1	1	**4**	**1,3**	**1,8**
NP in NP	1				2	**3**	**1,0**	**1,4**
NP on NP			1	1	1	**3**	**1,0**	**1,4**
NP out of NP	1		1		1	**3**	**1,0**	**1,4**
NP apart			1		1	**2**	**0,7**	**0,9**
NP back			1		1	**2**	**0,7**	**0,9**
NP back to NP			2			**2**	**0,7**	**0,9**
NP down	1		1			**2**	**0,7**	**0,9**
NP down into NP			2			**2**	**0,7**	**0,9**
NP upon NP				1	1	**2**	**0,7**	**0,9**
NP away	1					**1**	**0,3**	**0,5**
NP away from NP					1	**1**	**0,3**	**0,5**
NP back above NP			1			**1**	**0,3**	**0,5**
NP back up over NP			1			**1**	**0,3**	**0,5**
NP between	1					**1**	**0,3**	**0,5**
NP down on NP					1	**1**	**0,3**	**0,5**
NP down onto NP					1	**1**	**0,3**	**0,5**
NP down over NP			1			**1**	**0,3**	**0,5**
NP downwards			1			**1**	**0,3**	**0,5**
NP forward	1					**1**	**0,3**	**0,5**
NP from NP into NP	1					**1**	**0,3**	**0,5**

[15] The amount of words used in the calculation was: $\frac{300}{2\,258} \times 16\,496\,408 \approx 2\,191\,728$

Form / Complement	*Force*	*Forces*	*Forced* Active	*Forced* Passive	*Forcing*	**Total**	**%**	**NF** per million[15]
NP into -ing					1	**1**	**0,3**	**0,5**
NP on	1					**1**	**0,3**	**0,5**
NP past NP			1			**1**	**0,3**	**0,5**
NP sideways towards NP			1			**1**	**0,3**	**0,5**
NP through	1					**1**	**0,3**	**0,5**
NP up					1	**1**	**0,3**	**0,5**
NP up NP	1					**1**	**0,3**	**0,5**
NP up through NP			1			**1**	**0,3**	**0,5**
NP upstream					1	**1**	**0,3**	**0,5**
NP westward into NP			1			**1**	**0,3**	**0,5**
Total	**48**	**3**	**97**	**104**	**46**	**298**	**100**	**136,0**

Starting with the sentential complements, while the *to infinitive* is still by far the most common choice of complement, the rivalling *NP into –ing* complement has finally made its appearance. Yet, finding one single result was nothing but discouraging, especially as the usage in this case is easily argued to be motivated by the preceding *into NP* complement:

[82] *Forcing her into a loveless marriage* the same way he's *forcing you pair into marrying the Costello sisters.*

The apparent breaking of the *horror aequi* principle can probably also be explained by the preceding pattern. A further search was be carried out to reveal the true status of the *NP into –ing* complement in PDE, and shall be described in full in section 6.4.

The *NP to inf* complements, and with them the verb form *forced*, were again more common in passive voice than active, but the overwhelming one to two ratio found in both parts of the CLMETEV could no longer be observed. Still, as this is the complement strongly identified with the meaning of "making somebody do something", *OALD's* statement that it is "often" found in the passive seems to have remained correct throughout the period of Late Modern English studied in this thesis.

[83] EWC 2998 After a time *he* was *forced to stop*, panting.

[84] H0M 3463 As these cocksuckers torture me, *Butch and Caduta* are *forced to watch*.
[85] FP7 2442 She cut in on a station wagon, *forcing the driver to brake* heavily […]

In fact, the active voice has noticeably risen in popularity with all the tokens in general, from being roughly even with the passive in CLMETEV part 1 to a slight advantage in part 3, and finally to the nearly two to one ratio observed in the BNC data. This steady change in usage marks another grammatical shift in the usage of the verb *force*.

The *NP upon NP* complement has suffered a dramatic decline in popularity in the BNC data, and represents one of the clearest temporal shifts in the complementation of *force*. Already one of the more common complements in CLMETEV part 1, it was the second-most common complement in part 3 with a double digit normalized frequency, yet in PDE its raw frequency of two places it on level with endless variations of directional complements at the bottom of the table. Both tokens are found in a remarkably similar environment:

[86] JXV 2553 His eyes seemed to mesmerise her, draining her will, *forcing his own upon her*.
[87] HHA 2750 *All this deceit* was being *forced upon her* by his … his paranoia.

Rather than replacing *NP upon NP,* a possibility that was speculated on in the analysis of CLMETEV part 3 data, *NP on NP* has similarly suffered a drop in usage being down to a raw frequency of three, though the semantic environment remains similar between the two complements:

[88] HD6 742 This would have no doubt involved stories of my *forcing myself on him* […]

This seems to further validate the idea of grouping the two together, as already discussed in the analysis of CLMETEV part 3. Investigated in terms of complexity, the first ([86]) of the two sentences with *NP upon NP* has nominal ellipsis, “draining her will, forcing his own [will] upon

her" and the second ([87]) is in the passive voice. As for *NP on NP*, while [88] is a grammatically simple sentence, one of the other two tokens is in the passive and the other has the object extracted:

[89] HGD 1177 Is this because of *the strange life* your mother *forced on you* […]

As the situation was similar with earlier data, it appears that the complexity principle has no effect on the distribution of these two complements.

Moving on, the following complements, although present in the historical CLMETEV data, were no longer found in the BNC data:

NP beyond NP	*NP down NP*	*NP in*	*NP out of NP into NP*	*into NP*
NP against NP	*NP together*	*NP in upon NP*	*NP over NP*	*NP abroad*
NP at NP	*Np towards NP*	*NP inward*	*NP back into NP*	*through NP*

All of the above complements had an extremely low frequency in the historical data as well, so it would be a stretch to draw any conclusions from their lack of showing at all in the BNC. Furthermore, all of the above complements express direction, even the *NP at NP*:

[90] […] he escaped the melting mood by *forcing a sneer at the sort of stuff out of which popular ballads are woven*. (Meredith 1895)

While some of the old directional complements were no longer found, the BNC data has revealed yet new similar low frequency directional complements, such as *NP westward into NP* or *NP sideways towards NP*:

[91] AMU 2006 As the flow increased, the water nibbled away the downstream face of the hundred yards of landfall that had originally f*orced the river westward into the Makaa*.

[92] GV6 351 Rodriguez's face was screwed up with pain as the grip of that dummy hand on his arm *forced his body slowly sideways towards his seat*.

The seemingly boundless affinity *force* appears to have for this type of complements was already briefly discussed in the analysis of CLMETEV 3 data, and it would be tempting to simply put forth the argument that *force* can be, and likely has been, used with every analogous directional

complement pattern imaginable, and count them as one, rather than separately as done in the present study. Or stated more formally, one of the complements selected by the verb *force* is a string comprising of a sometimes repeating pattern of noun phrases and adverbs or prepositions indicating direction.

The intransitive use of *force,* recorded in CLMETEV part 1 with two different complements, remains missing, as it was already from CLMETEV part 3. The present study lacks the data to make claims about when this usage fell from use, but at least the data is compatible with the author's intuition that the intransitive *force* is indeed no longer used in PDE. To answer the question of when the change happened, perhaps a more specific study, which included the time period covered by part 2 of CLMET and leveraged the vastly expanded new third edition, which was unfortunately completed too late to be used in the present study, would be suitable.

6.3.2 BNC data by meaning

This section provides a different view at the complementation data of *force* found in the BNC, this time sorting the complements based on the meanings found in OED, rather than on the conjugations of the head verb.

Meaning / **Complement**	1	2	3	4	5	6	7	8	9	10	11	**Total**
NP to inf		2	161					2				**165**
NP	2	5	4	3				18				**32**
NP into NP		4	9		5			6				**24**
NP open				4				4				**8**
NP from NP								3	3			**6**
NP through NP					3			2	1			**6**
NP to NP		1	1					4				**6**
NP out								1	4			**5**
NP between NP					2			2				**4**
NP in NP								3				**3**
NP on NP							3					**3**
NP out of NP									3			**3**
NP apart				2								**2**
NP back					2							**2**

Meaning / Complement	1	2	3	4	5	6	7	8	9	10	11	**Total**
NP back to NP					2							**2**
NP down		1			1							**2**
NP down into NP					1			1				**2**
NP upon NP							2					**2**
NP away					1							**1**
NP away from NP		1										**1**
NP back above NP		1										**1**
NP back up over NP					1							**1**
NP between					1							**1**
NP down on NP					1							**1**
NP down onto NP					1							**1**
NP down over NP					1							**1**
NP downwards					1							**1**
NP forward								1				**1**
NP from NP into NP					1							**1**
NP into –ing			1									**1**
NP on					1							**1**
NP past NP								1				**1**
NP sideways towards NP					1							**1**
NP through					1							**1**
NP up								1				**1**
NP up NP					1							**1**
NP up through NP								1				**1**
NP upstream								1				**1**
NP westward into NP								1				**1**
Total	**2**	**15**	**176**	**9**	**28**	**0**	**5**	**52**	**11**	**0**	**0**	**298**
%	**0,7**	**5,0**	**59,1**	**3,0**	**9,4**	**0**	**1,7**	**17,4**	**3,7**	**0**	**0**	**100**
NF per million	**0,9**	**6,8**	**80,3**	**4,1**	**12,8**	**0**	**2,3**	**23,7**	**5,0**	**0**	**0**	**136,0**

While meaning 3 is still by far the most common, more than reclaiming the slight dip it suffered in relation to other meanings in CLMETEV part 3, due to its claim on almost all tokens of the most common complement, the *NP to inf*, some further examination of the *NP to inf* complements with meanings other than 3 is in order, as promised in the analysis of CLMETEV part 1 data. While it could easily be argued that every instance of *NP to inf* complement falls within meaning 3—which is, after all simply "make sbd do sth"—by default, in this study, the instances of

NP to inf complement that were judged to fall under meanings 2 and 8 were those where the object of *force* and by extension the understood subject of the lower verb was considered to lack agency to "do something", as in:

[93] G04 3749 Li Yuan might as well try to harness Change itself as try to *force the boy's talents to conform* to the needs of State.
[94] FRC 2572 Finn, sullen, vindictive, was *forcing the killing blow to come* to him.

On the idea that *the boy's talent* or *the killing blow* are not entities that can be made to act as agents, [93] was put under meaning 2 and [94] under meaning 8. In the data, there was even some playfulness with regards to this idea of agency, as in:

[95] FEE 1118 I got undressed and, after my usual battle with the crumbling Ascot in the bathroom, *forced it to yield* enough hot water for a miserly bath.

In [95], the normally inanimate "crumbling Ascot [a gas-powered water heater]" is described in terms that suggest it be an agent, reluctant to "yield enough hot water", which was used as the basis for including it under meaning 3 in the table above.

However, aside from the question of which meaning of *force* the tokens discussed above belong under, the object of *force* in these senteces is, as careful readers may have already noticed, by definition quite unexpected. Let us recall Huddleston and Pullum's description of *force*, quoted already in section 3.2, but repeated here for convenience: "[force] impose[s] selectional restrictions on the object and assign[s] an agentive role to the covert subject of the infinitival" (2002, 1235). At the time, this claim seemed to be in accordance with the data at hand, but looking at [93] and [94], the role "the boy's talents" or "the killing blow" have in their respective sentences, it does not appear very "agentative", especially considering Huddleston and Pullum's description that "the prototypical agent is animate and acts consciously, volitionally" (2002, 230-231). Thinking of the matter purely in terms of what would fit in nicely with existing semantic categories, it comes to mind that if "the boy's talents to conform to the needs of State" were analyzed as a single unit, it

could be seen as a factive theme, that is "a theme [that] comes into existence by the virtue of the process expressed, and cannot be simultaneously agent or patient" (233). While that analysis perhaps causes more problems than it purports to solve, in a less redical analysis "the boy's talents" could be seen as a theme on the basis that the theme category "applies to entities that change" (232), and that it then passes on that relation to the understood subject of the lower verb.

In another interpretation found in the literature, Sag and Pollard categorize the object of verbs like *force* as "influenced"[16] and they are characterized as "typically animate" (1991, 66), which would make the phrases under discussion here examples of the atypical; but not nonexistent. In further evidence against Huddleston and Pullum's argument, Sag and Pollard give an example with *persuade* (71) in which the semantic role of the understood subject of the lower verb is explicitly patient:

[96] Lee persuaded Tracy to be examined by Kim.

Sag and Pollard consider *persuade* to be in the same group as *force* (63, 65), and it is evident that [96] would work with *force* too, so the argument that *force* always assigns an agentive role to the understood subject of the lower verb appears to be counterfactual both with regards to the data examined in the present study and the existing literature on the subject.

Of course, it should not be forgotten that this particular discussion is relevant to four tokens, compared to 161 where the role of the object, and thus the covert subject of the infinitival, clearly is agentative, as Huddleston and Pullum suggest. Further, if Huddleston and Pullum simply attempted to say "*force* is an object control predicate" without bringing in the baggage of the full framework the claim entails, the analysis here is to be taken simply as an examination into what the "selectional restrictions" *force* imposes actually are. However, considering the passage under discussion here

[16] Sag and Pollard also identify another object type for *force* in sentences where *force* acts akin to raising verbs, which is not relevant to this discussion, and incidentally was not found in any of the data sets examined for this thesis. "The police permitted there to be a demonstration in the park" is given as an example of this type of usage (*permit* is one of the other verbs listed with this feature) (66).

occurs after Huddleston and Pullum's description of control and raising, it remains unclear why they would purposely avoid the terms here.

Moving on to the other meanings and complements of *force*, two tokens for meaning 1 were finally found in the data. The sentences these tokens were found in were, to put it bluntly, as rapey as expected:

[97] H94 4179 'You can't *force me*,' she whispered, protecting her nakedness with her hands, each breast splayed in a plump cushion around her spread fingers.
[98] HH8 3350 He said quietly, 'I took her — I — *forced her*.

Now, similar themes were found in other with other complements, such as *NP into NP*, as in:

[99] FU8 2070 When he finally lowered the heavy bulk of his sweating body onto the bed beside her, his roughened hands pressed her small thighs wide and he *forced himself into her* immediately, ignoring her repeated cries of pain.

However, [99] was put under meaning 5, justified by a rather literal-minded interpretation of the physical act described by the predication. Furthermore, in meaning 1 the object *NP* refers to the victim, whereas here it refers to the rapist's penis, so clearly these complementations represent rather different approaches to admittedly similar subject matter.

As was discussed in the previous section, *NP upon NP* and *NP on NP,* demonstrated in [86]-[89], have suffered a dramatic drop in usage, and with them so has meaning 7. In CLMETEV part 3 it had 38 tokens, almost all of which came from these two complements; now it is down to 5 tokens, accounting for every instances of the two complements and nothing else. The meaning was prominently listed in decidedly PDE dictionaries, especially *COBUILD*, and these were the complements it was supposed to occur with, so this result is extremely surprising. It is possible that the usage has shifted away from fictive prose to another register in PDE, but the author is at a loss as to what would have motivated such a change.

Meaning 2 has also dropped in popularity to just over half the normalized frequency it still had in CLMETEV part 3, and also in relation to the other meanings: meaning 5 which was roughly

even with meaning 2 shows no such change in its normalized frequency. Meanwhile, meaning 8 has more than doubled its normalized frequency and almost doubled its ratio amongst the different meanings. This is due to a large claim on a number of complements, most notably *NP* where other meanings that historically had a strong showing have yielded their share in favour of meaning 8, while the complement itself has risen only modestly. Some of the typical patterns found with meaning 8 are demonstrated below:

[100] K95 3107 Colebrooke *forced a smile* and hurried off […]
[101] HGV 2259 […] it was all Benedict could do not to snatch her back into the heat of his embrace, and *force his way to that intimate deep caress* […]

Neither instance of *NP down,* nor any of the other complements including the word *down* was in the "force a plane to land" meaning, which was suggested by the examples provided by the OED and the LDCE, and only one was in the "make yourself swallow" meaning also suggested by the LDCE for this complement:

[102] G06 627 'We,' said Lili, 'have just managed to *force down sufficient amounts of fresh veg and protein* to retain some shapeliness and complexion.'

The other tokens of *NP down* or another complement including the word *down* tended to be non-idiomatic, simply referring to forcible downwards movement imposed on something, but the idiom of "force sbd down" was also attested:

[103] FYY 2253 It could have been that someone *forced him down*, and held his face under.
[104] FNT 4235 Indignantly, she *forced the dress down over one shoulder*, leaving it bare […]

In [103], "he" is not simply made to descent, but is being held down, putting the token under meaning 2 rather than meaning 5. In contrast, in [104] the reference is simply to downwards movement.

6.4 Search for the *NP into –ing* complement

After the disappointing result of a single token for *NP into –ing* in the main data, further searches were carried out using the BNC. The search string {force} into _VVG was used as the starting point and after some experimentation in inserting wildcards before and after the word *into*, it was determined that the search string {force} *** into _VVG gives perfect recall and precision for the Imaginative prose section, showing a total of 13 tokens. To clarify, this string searches for the lemma *force* followed by the word *into* with up to three words between them, followed immediately by any verb in *–ing* form. Five tokens were with the word form *force,* six with *forced* and two with *forcing*. In all tokens with the word form *force,* the head verb is a *to* infinitive, suggesting *horror aequi* might play a role:

[105] HJD 1746 […] but not if you use defenceless kids as hostages *to force an injured opponent into fighting* you!

Of course, the two tokens with the head verb *forcing* present an argument against *horror aequi*, though the one in [82] should perhaps not count, as mentioned previously. The other token deserves further analysis and extra context is provided for this purpose:

[106] HJD 1746 Angel One, for his part, sensed the fear in Grant, and knew he had this hated enemy in his power … once he had disarmed him. This he would achieve by *forcing him into discarding his weapons*. Know your enemy was a prime rule of combat. Angel One applied this precept now. From experience he knew Grant had a weakness he could exploit — his concern for the safety of others — and it was a flaw which would now prove fatal.

For those unfamiliar with the category tags used by the BNC, "HJD" stands for *unpublished* creative writing. And perhaps not coincidentally, the first idea that comes to mind after reading [106] is that *horror aequi* applies fully and [106] is in fact a great illustration of the awful prose that results from violating it. After all, *horror aequi* does not refer to a grammatical restriction, there is nothing ungrammatical about the two *–ing* forms following each other, but to a stylistic one. It follows that when observing two *–ing* forms in a row, one cannot simply conclude that *horror aequi*

did not apply there for some reason, and move on. Rather, if one accepts that *horror aequi* has merit as a theory, every instance of writing appearing to break it must be seen as a potential example of objectively bad style of English prose as that is what *horror aequi* implies. In the case of [106], there is further evidence which points to the same conclusion—being unpublished genre fiction, having a character actually called "Angel One", the banal violation of "show don't tell"—, so the decision to analyze it as a case for *horror aequi* rather than against it is certainly not without merit.

Being slightly more charitable to the author, it could also be argued that here the *into –ing* phrase implies "force into a situation where he would be forced to discard his weapons", especially as the following sentences suggest that Angel One plans to pressure Grant by threatening someone else. In contrast, using the *to* infinitive complement here might suggest a more direct action.

Of the remaining tokens where *horror aequi* does not seem to play a role, four (including [106], if we accept my latter analysis of the usage) are preceded by a modal *would* or *could*:

> [107] HH1 4217 She knew all too well by what circumstances a woman *could* be forced into using her body as a means of ensuring survival for herself […]

Some of the tokens clearly suggest a continuing action, in a way a *to inf* complement would not:

> [108] H7W 1357 What strange quirk of fate had *forced her into working* for Nathan Bryce — the most handsome, fascinating and ruthless man she had ever met? She had always been a confident, outgoing person. So how was it he could make her feel uncertain and inadequate, yet set her a-quiver with treacherous delight at his lightest touch?

[108] is also the only token where the verb in *–ing* form is not followed by an object NP. None of the tokens is in a sentence final position. In fact, all of the BNC has only one token for *force NP into –ing* in a sentence final position, "forced him into cheating", and even there the *–ing* form could be analysed as a noun instead. In contrast, the *to inf* complement with *force* can easily be intransitive and appear in a sentence final position.

Further expanding the search for the *into –ing* pattern to all of the BNC reveals 55 additional tokens of *force NP into –ing*, or 68 in total. On the other hand, *force to inf* seems to have over 8000 tokens (precise count omitted due to the possible false positives not accounted for here). The ratio is dismal, and the *into –ing* pattern is clearly a fringe usage, which, it occurs to the author, Huddleston and Pullum were perhaps right to ignore, as mentioned in section 3.2. Still, the complement has demonstratably existed for centuries so it obviously cannot be ignored here.

Of the 18 tokens with the word form *force*, 15 had the head verb in *to* infinitive and the remaining three were preceded by modals:

[109] A06 244 This is not simply *to force* people into speaking blank verse […]
[110] CH3 7494 I just hope we *can* force Liverpool into making as many errors as in the first leg.

There is some resemblance in [110] to [106], in that both have this atmosphere of indirectness a *to* infinitive would perhaps not quite capture. Here, it is not that Liverpool is forced to make a single error in an absolute sense, that an error would be the only alternative remaining to them. Rather, the subject hopes and intends to create situations that are so difficult, that Liverpool will not manage perfect plays every time. There were no further tokens with the head verb in *–ing* form, so presuming the validity of the *horror aequi* principle seems to give the expected results as far as the complementation of *force* is concerned.

Looking back at the examples laid out in this section, and perhaps especially all the modals found, one further detail that forces itself on the author's attention is in relation to the traditional idea that the *–ing* form suggests real events, versus a more hypothetical connotation held by the *to* infinitive. Bolinger (1968, 126) found this to hold in his overall look into the matter, but of all the examples shown in this section, only [108] refers to a non-hypothetical situation. If *–ing* forms and *to* infinitives indeed are subtly different in meaning, at least here the difference is not what was originally suggested, or it gets overruled by the other principles at work.

6.5 Summary of corpus data

In the data it was observed that the active voice has become more frequent with *force* in PDE than it was in the historical data. However, the *OALD*'s observation that the "make sbd do sth" meaning is "often" found in the passive continued true throughout the data sets, despite the passive's overall declining frequency.

The *NP to inf* complement remained clearly the most common throughout the data sets, as did the "make sbd do sth" meaning 3, which is strongly associated with it. *NP upon NP* peaked in CLMETEV part 3, but fell almost completely out of the picture by the BNC taking meaning 7 down with it. The alternative *NP on NP* complement failed to take its place as one of the more common complements, instead finding itself with a rather mediocre three tokens in PDE. While the decline of *upon* can perhaps be explained as a general tendency rather than as a specialty of *force*, the fact that it was not replaced by *on* caused the near-disappearance of meaning 7 from PDE was extremely surprising considering this is the third[17] meaning listed by *COBUILD,* shown exclusively with *NP upon/on NP* complements, whose entries are supposed to be based on actual usage to aid language learners, and was found in the *LDCE* as well.

Of the other popular complements, *NP, NP into NP* and *NP from NP* remained so throughout the data, while *NP through NP* and *NP open* rose from being unremarkable in CLMETEV part 1 to the top 5 in the two later data sets.

Surprisingly, meaning 1 was found only in PDE: the complementation associated with this meaning, *force NP* rather than *force NP to INF* or *force NP into NP* for example, to mean "rape" seemed unfamiliar and old-fashioned, so PDE was the last place it was expected to show. Meaning 10 was found throughout the historical data, but no longer in PDE. Meaning 11, "to reinforce" was not found at all in the data, though in fairness it was expected to have disappeared by PDE based on the dates of the quotations in the *OED*. As the same was true for the field-specific meanings in *OED*

[17] Third in the actual book; not in the adapted listing presented earlier in this thesis.

that were ignored from the start in this thesis, it would be tempting to argue that *force* has become more strongly generic in meaning, that explicit context is now needed to explain what it is that is forced. The two tokens in meaning 1 naturally present an immediate counter-argument to this, but both tokens, as shown in [97] and [98], do in fact have extra context to make the meaning abundantly clear; just not as part of the complementation of *force*. A further study using PDE data and looking only for these specific-without-context usages might be illuminative, especially if other predicates with the potential for a similar change were identified.

As a side note, looking back at the sheer amount of damsels in distress present in the various example sentences cited in the present study and the even more numerous uncited ones, a literary study into lack of volition on part of the female protagonist in romance novels could do worse than look at the data sets used in the present study. Examples abound.

7 Conclusion

This thesis analysed the complementation and meaning of 618 tokens of the verb *force* in Late Modern and Present Day British English looking for temporal change in the usage frequencies, and contrasted the findings with the understanding of *force* as presented by the authoritative dictionaries and linguistic literature and theory on the subject.

The rarity of the *into –ing* complement even in PDE was frankly a bit of a shock as, if a little subjectivity is permitted here, the expectation was that it would be present in the data as a perfectly valid alternative for the *to* infinitive. However, perhaps it is still seen as too unwieldy with *force* to be widely used without specific motivation, such as *horror aequi* or authorial desire for a more indirect reading, and thus the *to* infinitive remains the sentential nonfinite complement of choice the majority of the time throughout the studied English periods.

Meaning 7 was found to have all but disappeared in PDE for reasons unclear. As dictionary sources, especially *COBUILD*, indicate meaning 7 and the *NP upon/on NP* complement it selects should still be one of the more common ways *force* is used, one has to entertain the possibility that the use of this meaning has shifted shifted from prose to another, perhaps more formal register, though no motivation for such a change occurs to the author. A further study would need to be conducted using the full BNC and possibly other PDE corpora to determine what happened.

Looking at how complements were distributed under the meanings of the whole complementation, the largest disparity between what was found and what the *OED* lead to expect, was with meaning 8. While the *OED* suggested only a simple *NP* complement, it turned out to be the second-most versatile after meaning 5 in type of complement it can select. To give credit where it is due, the plain *NP* was the most common single complement in this meaning in all data sets analyzed. Another surprise was the sheer amount of different complements selected, especially by meaning 5 and historically also meaning 8. While the *OED* showed a handful of directional complements could be used, the ability of *force* to combine them into new complements—beyond

simply adding a preposition of direction—and the productivity this ability displayed, was unexpected: the author is convinced that a great number of such extremely infrequent complements that were not found in the data can and do still exist in the wild.

The existing grammatical literature on *force* was found to provide a reasonable, though concise, picture of the usage. The aberrations were found in rather marginal cases, such as Huddleston and Pullum ignoring the *–ing* complement with *force,* or the few cases where the understood subject of the lower verb was not as agentive as they—against established knowledge—imply.

No evidence for or against the Great Complement Shift was found in the data as the *–ing* complement remained marginal through the investigated eras, and indeed was not found at all in the data investigated for historical usage. Also disappointingly, the complexity principle failed to predict the distribution of *on* and *upon* complements with any accuracy in any era investigated, performing worse than random guessing. Meanwhile the *horror aequi* principle accounted extremely well for itself in predicting the lack of sequential *to infinitives* or *–ing* forms, to the extent that the introduction of other grammatical principles was unnecessary in their analysis.

When thinning the data for the analysis of CLMETEV data, the ratio of nouns to verbs for *force* and *forces* turned out to be much greater than anticipated, resulting in a smaller than hoped for number of tokens left to be analysed. While more tokens could be analysed with less aggressive thinning, the relatively small number of tokens for these verb forms might be impossible to fix: even were the thinning to let through a hundred more verbal tokens, most of them would be for *forced*. Even a rough automatic part of speech tagging would help the issue, as well as the issue of incomparable thinning methods and their effect on normalization, which fortunately turned out to be statistically insignificant with the present data. I would like to use this opportunity to make the plea that such tagging be included in “official” capacity, as part of a corpus released for public, either in CLMET or in a new British English corpus of the same era.

For future research, apart from the situation with meaning 7 and the *NP upon/on NP* complement, the "generalization" of the meaning of *force* was identified as a possible topic given the disappearance of most of the stricter and field-specific meanings of *force* in PDE. It would also be interesting to find out when in Late Modern English the intransitive *force* disappeared, if it indeed did disappear. This study could be carried out using parts 2 and 3 of the new third edition of CLMETEV, for example.

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