Syntax

Seminar 'Corpus Linguistics'

Quirin Würschinger, LMU Munich

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Session Overview

1. Theory and Research

- Theoretical framework (EC-Model)
- Case study: *N+BE+that* construction
- Research findings

2. Practice

- Corpus analysis with Sketch Engine
- Hands-on exercises

The Paper: Schmid & Mantlik (2015)

Abstract

Abstract: Data from eight historical corpora spanning the period between 1250 and 1871 are investigated with regard to occurrences of the 'N+BE+*that*-construction' (as in *my concern is that* [...], *the idea was that* [...]). The formal, semantic, and pragmatic changes of this construction are described on the basis of 1,588 attestations retrieved from the corpora. Following this, the usage profiles of individual authors are examined. It is shown that even authors who are comparable in terms of period and genre show significant differences with regard to the frequency of use of the construction, collocational ranges and preferences, the use of semi-fixed lexical expressions manifesting the construction, as well as their functional preferences. These differences are interpreted from the perspective of the so-called 'Entrenchment-and-Conventionalization Model' (Schmid 2014a and 2015). It is argued that the usage profiles of individual authors can provide insights into the ways in which the construction under investigation was represented in these authors' minds, and that the observable collective long-term changes arise from the interaction of the cognitive processes in individual minds and the social processes taking place in the speech community.

Abstract from Schmid & Mantlik (2015, p. 583)

Entrenchment-and-Conventionalisation Model (Schmid and Mantlik 2015; Schmid 2020)

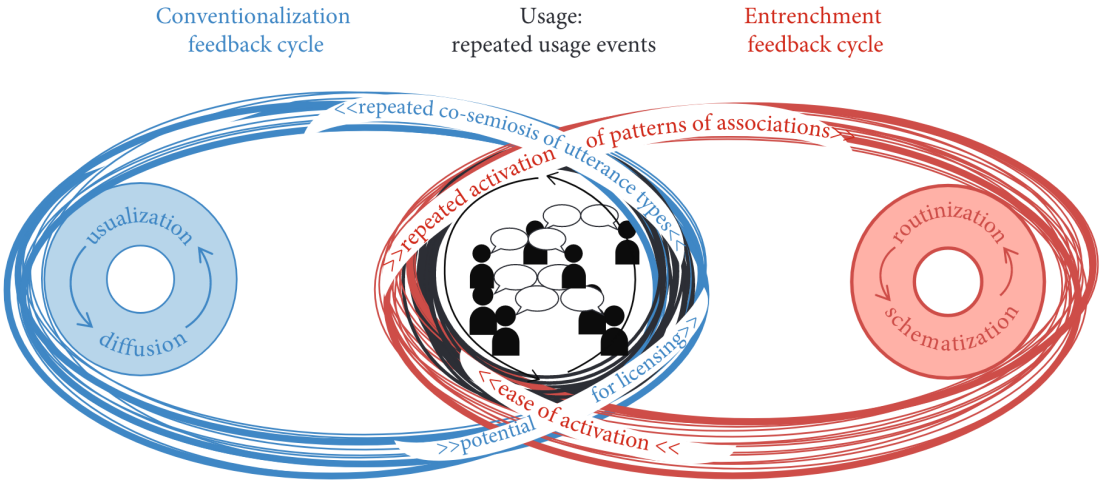


Figure 1.2 Language as a simple Tinguely machine

Entrenchment-and-Conventionalisation Model (Schmid 2020, p. 4)

Research Question

How do syntactic constructions change over time?

Case study: The *N+BE+that* construction

- *my concern is that […]*
- *the idea was that […]*
- *the thing is that […]*
- *the worry is that […]*

by *the talk*, by *is*, and by *that De Ruyter is come over-land* respectively. Following common practice in Construction Grammar (cf., e.g., Traugott and Trousdale 2013: 16), we will consider Pepys' utterance as a so-called 'construct' and assume that the production of this construct is licenced by one or more 'constructions' which were represented in Pepys' mind and activated while adding the entry to his diary. Several constructions on different levels of specificity could have motivated the construct in example (1):

a. a very general, schematic construction of the type Det+N+copula+*that*-clause, whose meaning/function could be glossed as 'THING-concept (encoded by the noun) encapsulates proposition (encoded by the *that*-clause)';[3]
b. a more specific but still schematic version, a sub-schema, which would take into account that *talk* is a linguistic noun; so the sub-schema would be Det+$N_{linguistic}$+copula+*that*-clause, associated with the more specific meaning 'speech-reporting noun encapsulates message';
c. a fixed expression, *all the talk is that*, i.e. a substantive, lexically filled construction, which could roughly be glossed as 'here is what people talk about these days'.

Analysis of the *N+BE+that* construction in Construction Grammar terms (Schmid & Mantlik 2015, p. 586)

Data Sources

Table 1: Data acquisition: eight corpora accessed online or retrieved from the Internet[4]

Corpus	Approx. Number of Words	Text Types	Time	Number of Tokens
Gutenberg	18,500,000	Fiction, Essays, Chronicles	1250–1871	1,039
OED3	20,000,000 (est.)	Mixed	1250–1871	194
Helsinki	1,500,000	Mixed	730–1710	13
Old Bailey	17,000,000	Court Proceedings	1720–1871	153
Paston	200,000	Letters	1422–1509	9
PCEEC	2,200,000	Letters	c. 1410–1695	140
Shakespeare	900,000	Drama, Poetry	1590–1612	17
Jane Austen's Letters	140,000	Letters	1796–1817	23
				Total 1,588

Historical corpora used in the study (p. 591)

Corpus Attestation

(1) 29th. [October 1664] All **the talk is that** De Ruyter is come over-land home with six or eight of his captaines to command here at home, [...]. (*The Diary of Samuel Pepys*, kept from January 1660 to May 1669, first published 1825)

Examples from historical corpora (Schmid & Mantlik 2015, p. 586)

Research Results

Diachronic Frequency

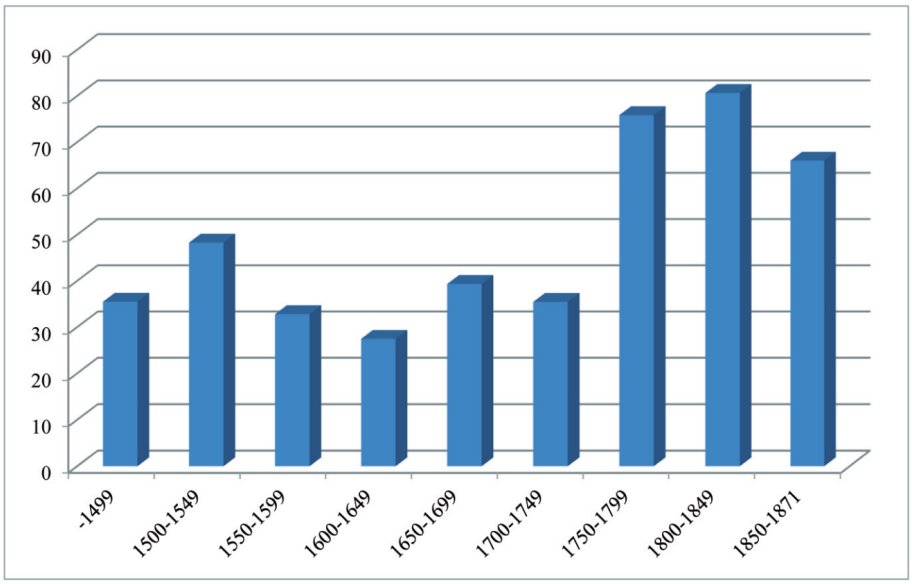


Figure 7: Relative frequency per million words per 50-year period

Steady increase from medieval to modern English (Schmid & Mantlik 2015, p. 601)

Text Type Distribution

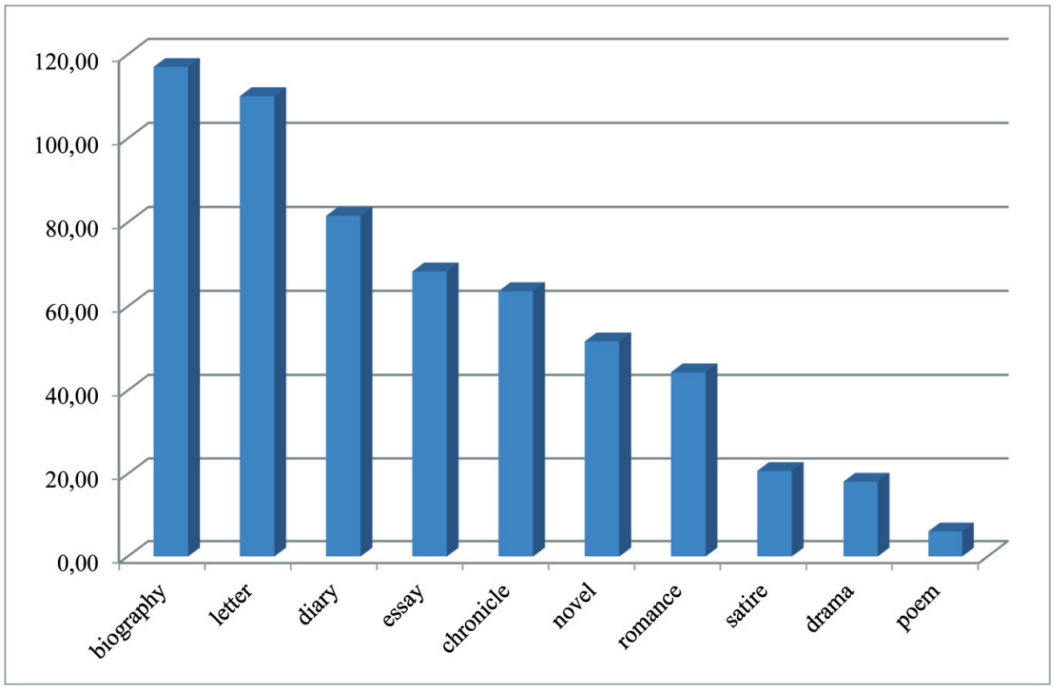


Figure 6: Frequency per million words in different genres (n = 1069)

Distribution across different text types (Schmid & Mantlik 2015, p. 600)

Speaker Variation

Table 4: Comparison of authors from selected periods writing the same genre

Author	Dates of Publications	Number of Words in Source	Number of Occurrences of N+BE+*that*	Relative Frequency per Million Words	χ^2 Test Results
Mid-18th-Century Fiction					
Richardson	1740–1748	1,406,495	42	29.86	$\chi^2 = 19.1447$ df = 3 p = 0.0002552
Fielding	1742–1751	691,821	33	47.70	
Haywood	1744–1748	170,858	7	40.97	
Smollett	1748–1771	659,690	5	7.58	
Early 19th-Century Fiction					
Austen	1795–1818	887,680	71	79.98	$\chi^2 = 12.7824$ df = 2 p = 0.001676
Shelley	1818–1826	250,729	11	43.87	
Scott	1814–1820	983,630	41	41.68	

Individual author differences (Schmid & Mantlik 2015, p. 606)

Author	Dates of Publications	Number of Words in Source	Number of Occurrences of N+BE+*that*	Relative Frequency per Million Words	χ^2 Test Results
Mid-19th-Century Fiction					
Brontë, E.	1847	117,276	6	51.16	$\chi^2 = 21.037$ df = 3 p = 0.0001034
Brontë, C.	1847–1856	395,351	12	27.82	
Dickens	1836–1861	1,409,404	144	102.17	
Thackeray	1848–1852	491,855	50	101.66	
Late 18th-Century Philosophers					
Hume	1739–1779	137,954	6	43.49	$\chi^2 = 58.3611$ df = 2 p = 2.124e-13
Paine	1776–1796	179,138	48	267.95	
Burke	1756–1796	1,515,549	129	85.12	

Usage profiles of different authors (Schmid & Mantlik 2015, p. 607)

Semantic Change

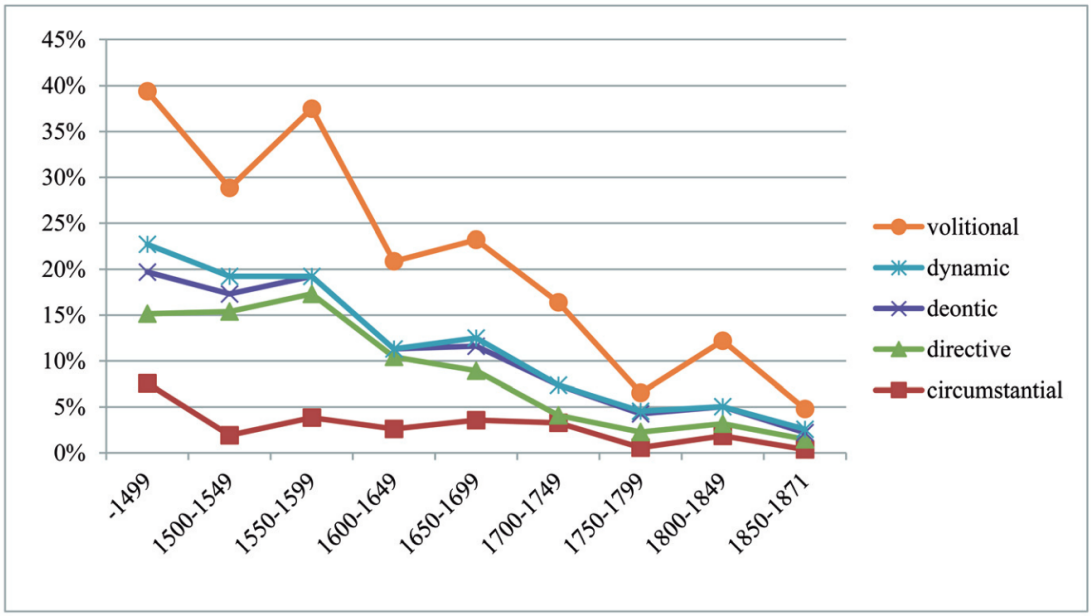


Figure 3: Decrease in relative frequency of nouns expressing volition, dynamic and deontic modality, directive illocutions, and circumstance

Changes in semantic preferences over time (Schmid & Mantlik 2015, p. 597)

The types of nouns collected in Figure 4 share semantic components related to actions and events: volition (see example 4), dynamic modality (5), obligation (6), giving orders (7), and circumstance (8):

(4) volitional: **The wyl** of crist **was that** she sholde abyde. (Chaucer, *Canterbury Tales*, 1430)
(5) dynamic: **My mete** ['means of support of strength', *OED3*, s.v. *mete*] **is that** I do the will of him that sente me. (*Wycliffe Bible*, John 4:34, 1384, *OED3*)
(6) deontic: **The lawe** of Medis and Persis **is that** eche decree whiche the kyng ordeyneth be not leeful for to be chaungid. (*Wycliffe Bible*, Daniel 6:15, 1384, *OED3*)
(7) directive: **Our request is, that** you would by the bearer of these presents, [...]. (Hakluyt, *The Principal Navigations, Voyages, Traffiques and Discoveries of the English Nation*, Vol. 1, 1598)
(8) circumstantial: **The kind** of the mors **is that** they wole leefe noothing empty besides hem. (Mandeville, *Mandeville's Travels*, around 1425, *OED3*)

Development of semantic categories (Schmid & Mantlik 2015, p. 598)

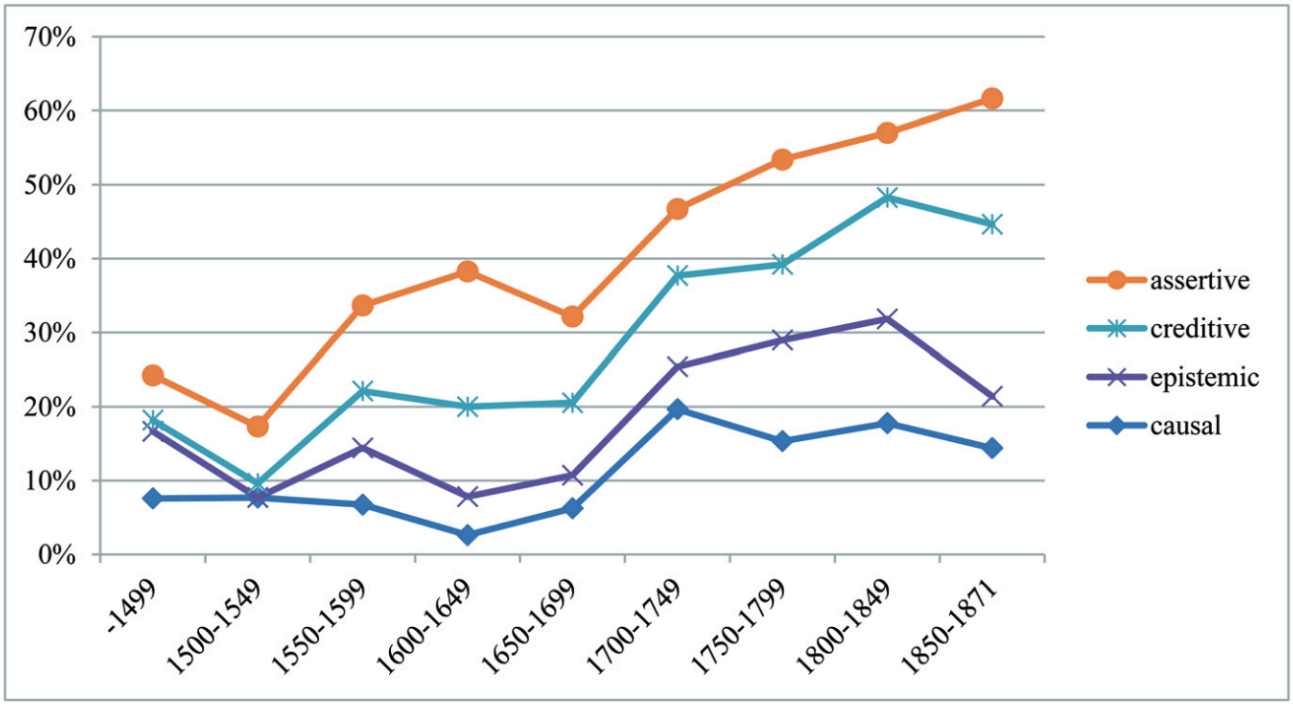


Figure 4: Increase in relative frequency of nouns expressing assertion, belief, fact, and cause

Detailed semantic analysis (Schmid & Mantlik 2015, p. 598)

Summary: What the Study Reveals

Key Patterns (1250-1871):

- **Frequency** ↗️ Steady growth over 600+ years
- **Authors** 👥 Individual cognitive differences
- **Meaning** 🔄 Concrete → Abstract shift
- **Registers** 📚 Genre-specific patterns

EC-Model Insights:

- **Usage** drives historical change
- **Entrenchment** varies by individual
- **Conventionalisation** creates norms
- **Corpus data** reveals cognitive processes

Bottom line: Syntactic constructions evolve through individual minds over historical time

Practice: Corpus Study

Tool: English Historical Book Collection (EEBO, ECCO, Evans) in Sketch Engine

Objective: Replicate the syntactic construction analysis

Your Tasks: Overview

What you'll accomplish today:

1. **Search** for the *N+BE+that* construction using concordance tools
2. **Analyse** absolute and relative frequencies across time periods
3. **Export** results and create visualisations in Excel
4. **Use CQL** to investigate specific nouns in the construction
5. **Compare** patterns between historical periods (1400s vs 1800s)
6. **Interpret** findings using the EC-Model framework

Goal: Experience the full research workflow from corpus query to theoretical interpretation

Part 1: Basic Corpus Analysis

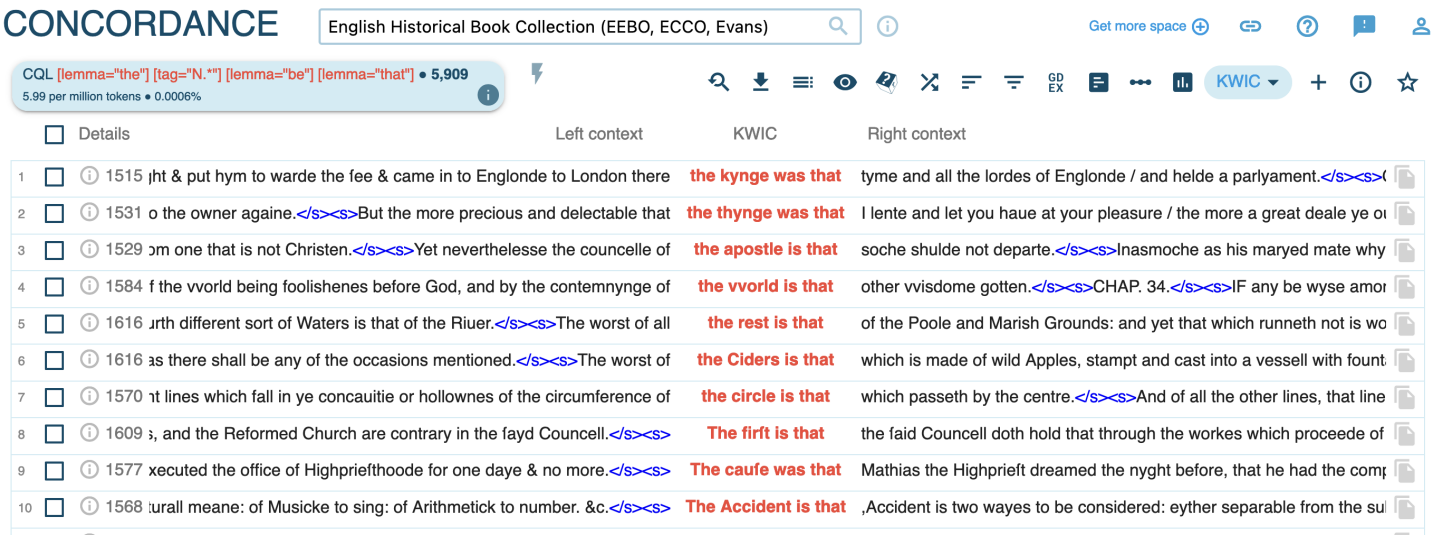
What you'll do in Steps 1–3:

1. **Search** for the *N+BE+that* construction in historical texts
2. **Analyse** absolute and relative frequencies
3. **Explore** how frequency changes over time (by century and decade)

Goal: Understand basic corpus query techniques and frequency analysis

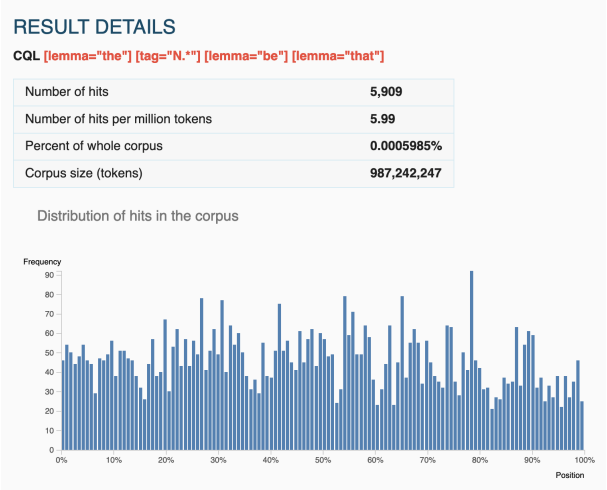
Time: ~15 minutes

Step 1: Concordance Analysis



Query for the construction and get a concordance view

Step 2: Frequency Analysis



Frequency analysis results

Tasks:

- absolute frequency: 5,909 tokens
- relative frequency: 5.99 occurrences per million words (pmw)

Step 3: Diachronic Analysis

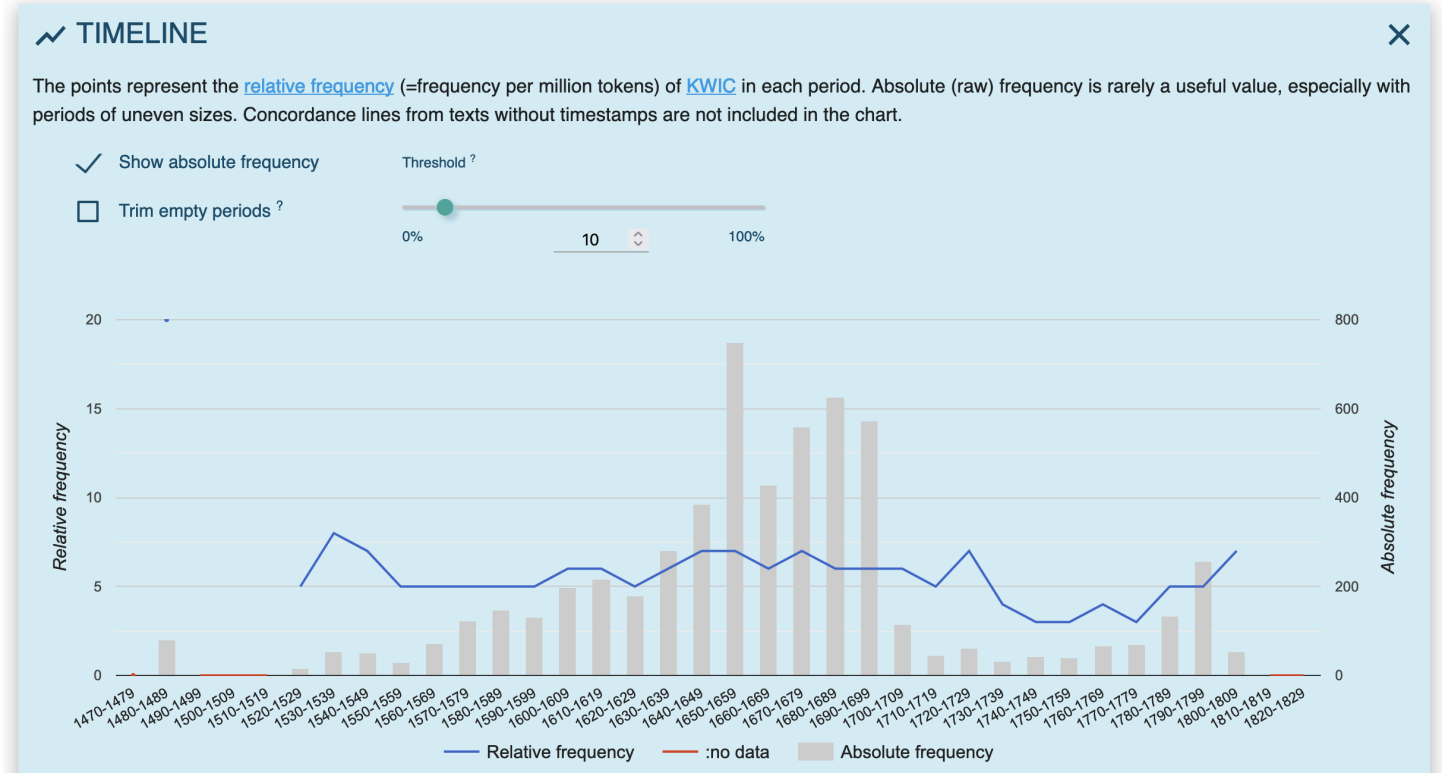
Frequency by Century

(5 items, 5,909 total frequency)

	Century	Frequency	Relative in text type ?	Relative density ?
1	1400-1499	109	16.04	267.93 %
2	1500-1599	687	5.97	99.74 %
3	1600-1699	4,197	6.28	104.99 %
4	1700-1799	863	4.54	75.82 %
5	1800-1899	53	7.22	120.66 %

Grouped by text type `Century`

Timeline by Decade



More detailed temporal analysis

Part 2: Advanced Analysis & Visualisation

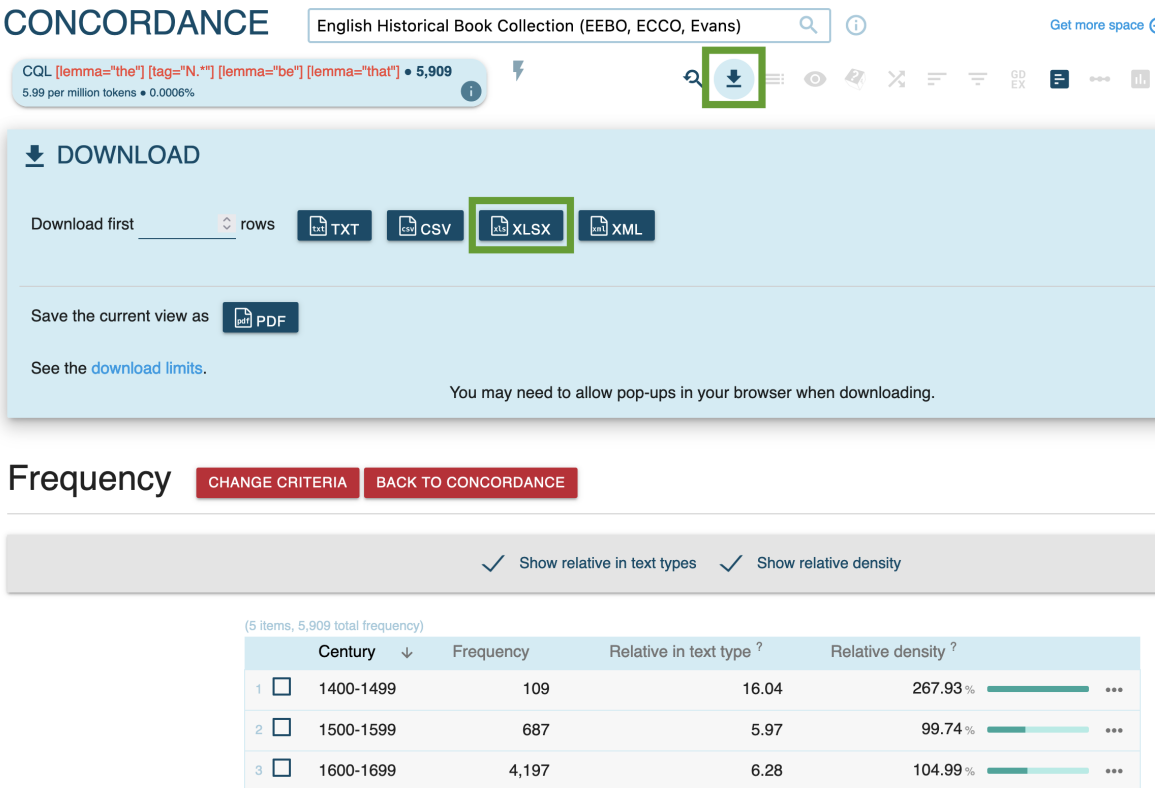
What you'll do in Steps 4–5:

1. **Export** your results to Excel for further analysis
2. **Create** data tables and visualisation charts
3. **Use CQL** to query specific nouns in the construction
4. **Compare** patterns across different historical periods

Goal: Master data export, visualisation, and advanced corpus queries

Time: ~25 minutes

Step 4: Excel Analysis



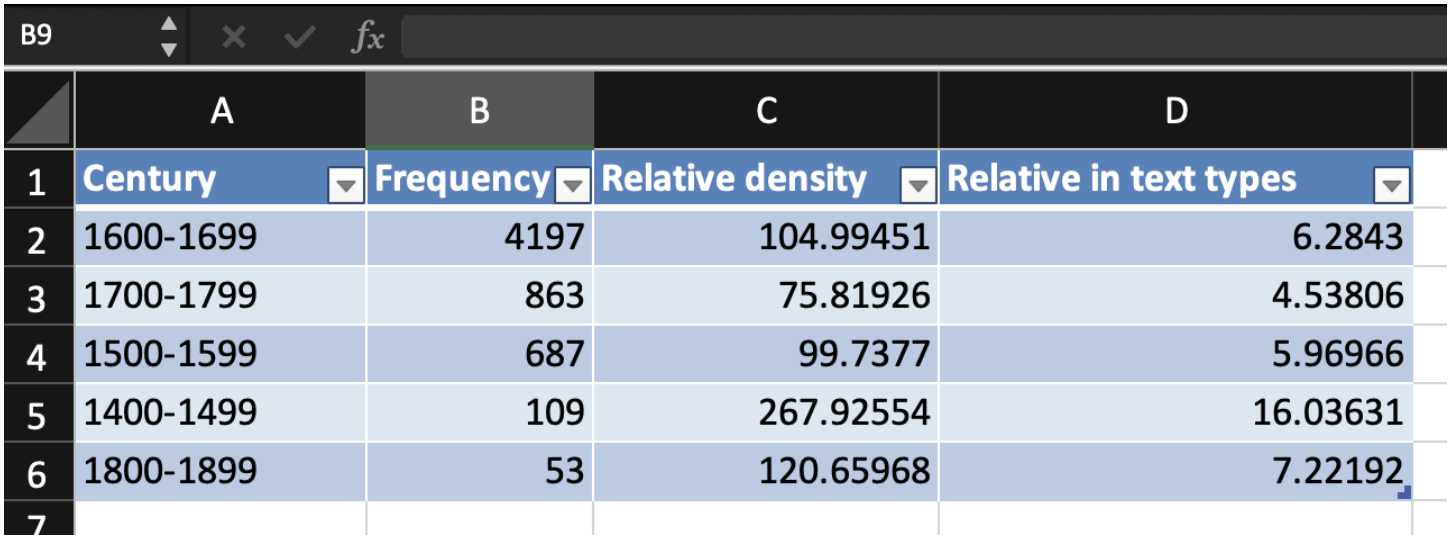
Export results in Excel format (.xlsx file type)

Model Solution Available

Excel file with sample analysis:
https://1drv.ms/x/s!AvkgNVl9yS6aokO4dB_h1_DiXKmw

- export results in Excel format
- create data tables
- generate line charts for both absolute and relative frequencies

Creating Data Tables

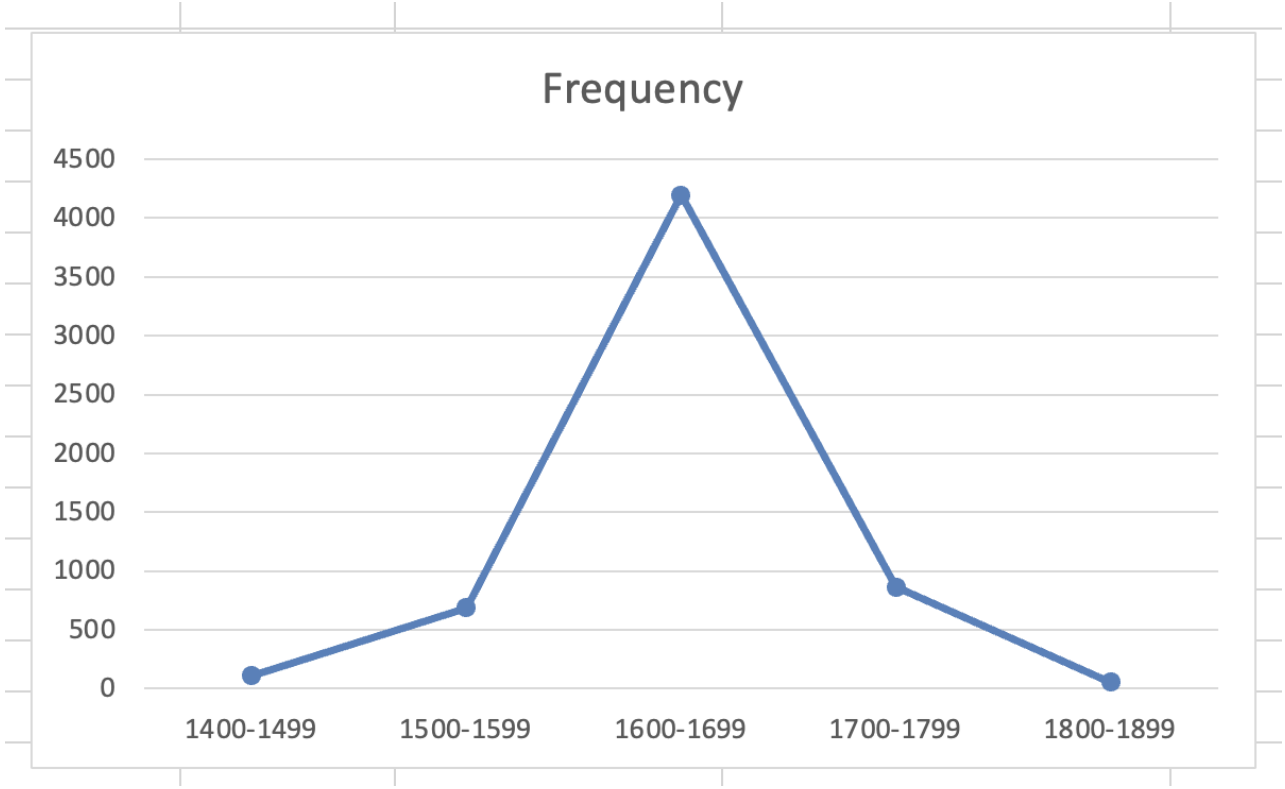


B9

	A	B	C	D
1	Century	Frequency	Relative density	Relative in text types
2	1600-1699	4197	104.99451	6.2843
3	1700-1799	863	75.81926	4.53806
4	1500-1599	687	99.7377	5.96966
5	1400-1499	109	267.92554	16.03631
6	1800-1899	53	120.65968	7.22192
7				

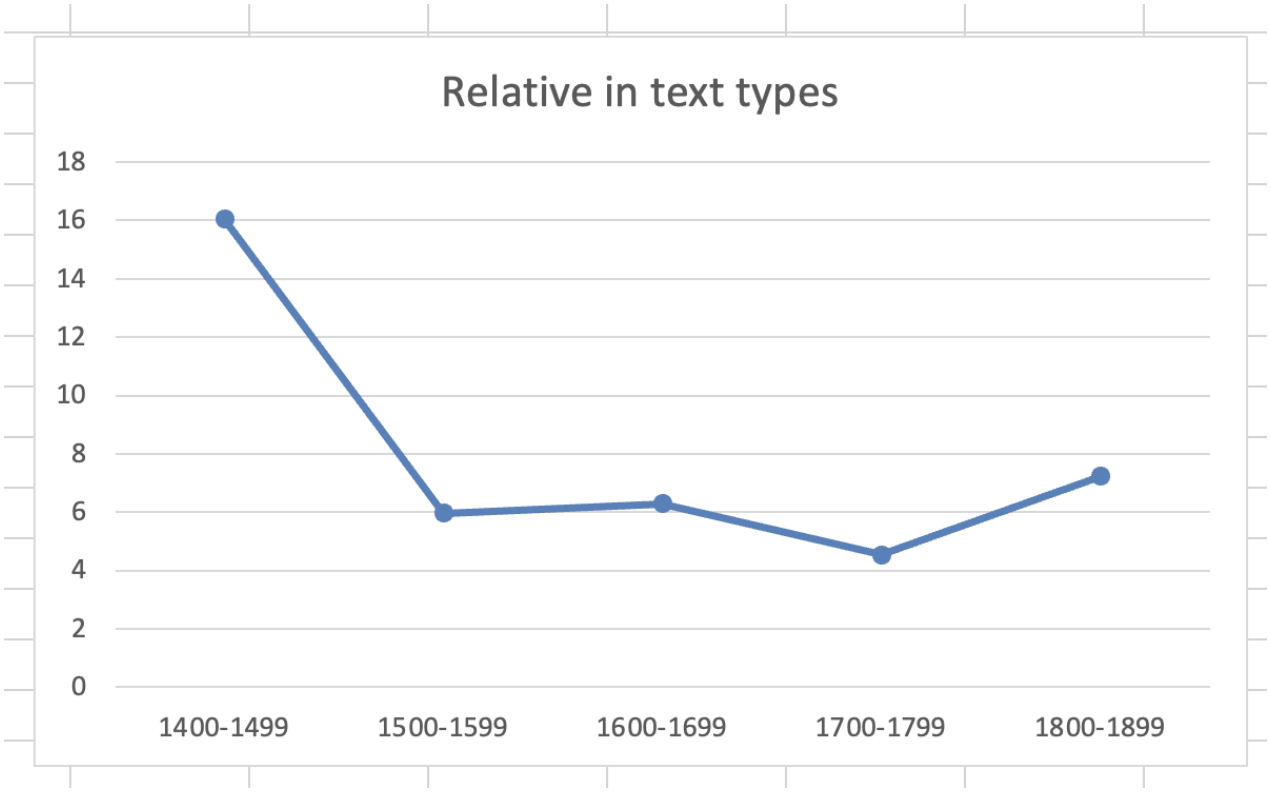
Make a table for further analysis

Line Charts: Absolute Frequency



Visualising absolute frequency development

Line Charts: Relative Frequency



Visualising relative frequency development

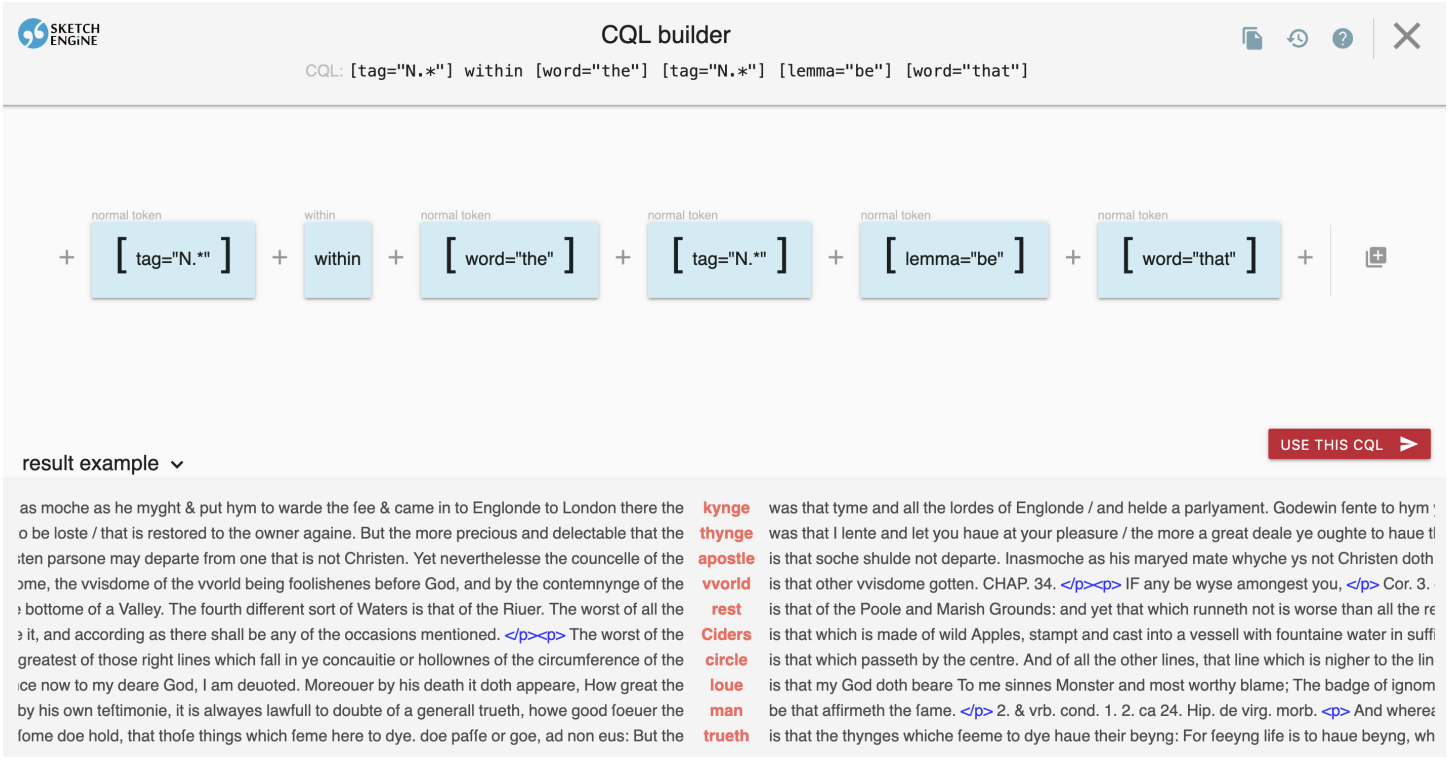
Step 5: CQL Analysis

Query specifically for the noun in the construction using CQL

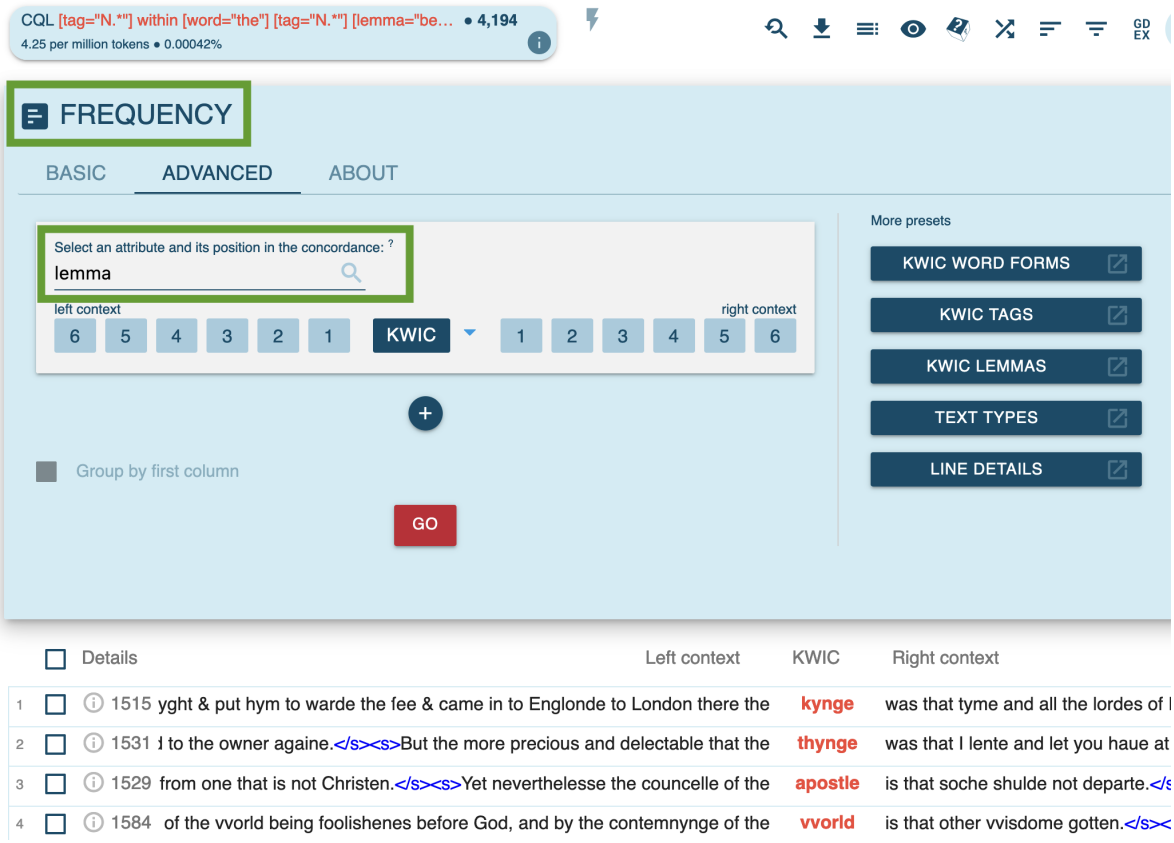
Hint: use the operator `within` *preceding the construction*

Objective: Identify the most frequent nouns used in the construction

Most Frequent Nouns



Analysis of lexical preferences



	Details	Left context	KWIC	Right context
1	1515	yght & put hym to warde the fee & came in to Englonde to London there the	kynge	was that tyme and all the lordes of
2	1531	I to the owner againe.</s><s>But the more precious and delectable that the	thynge	was that I lente and let you haue at
3	1529	from one that is not Christen.</s><s>Yet neverthelesse the councelle of the	apostle	is that soche shulde not departe.</s
4	1584	of the vvorld being foolishenes before God, and by the contemnynge of the	vvorld	is that other vvisdome gotten.</s><

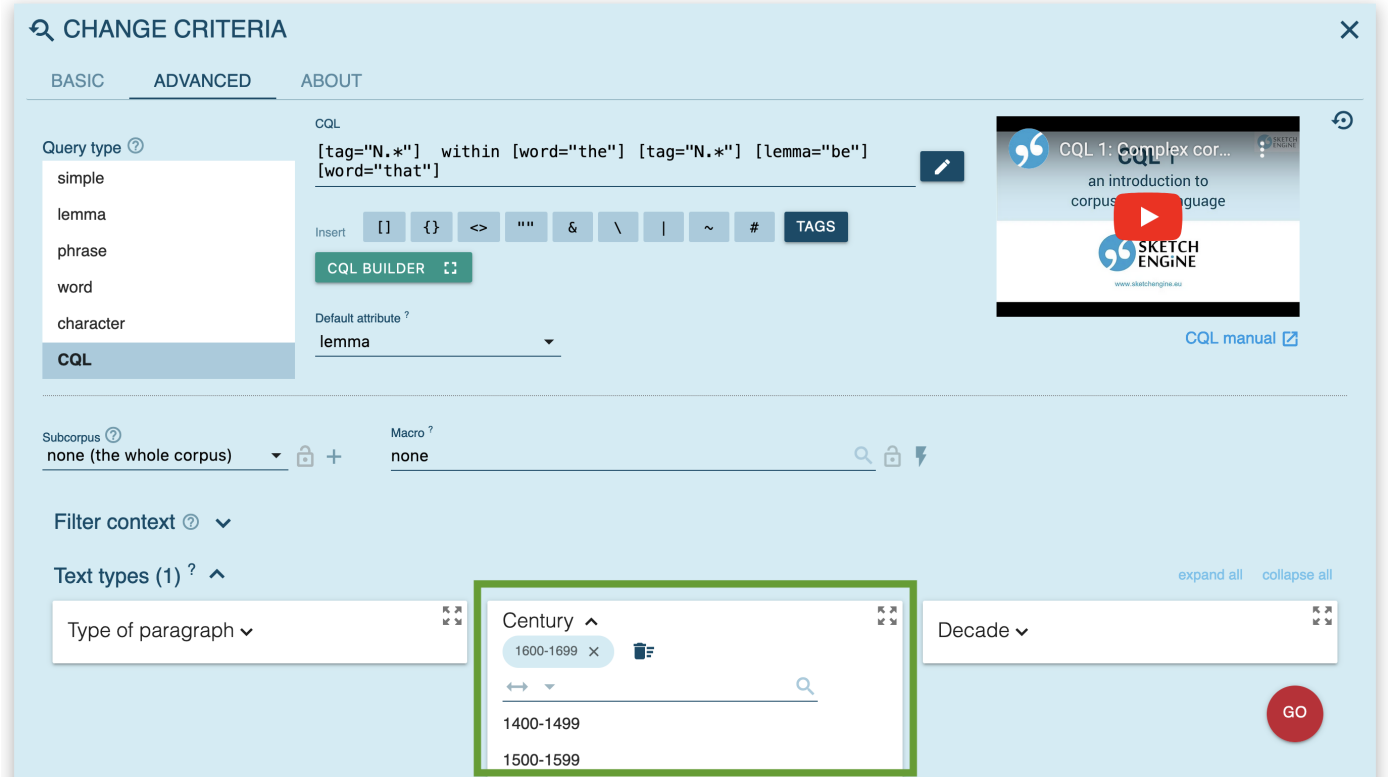
Extended frequency analysis

(1,623 items, 4,194 total frequency)

	Lemma	Frequency	Relative ?
1	truth	101	0.10
2	Lord	79	0.08
3	spirit	66	0.07
4	meaning	62	0.06
5	firft	58	0.06
6	thing	56	0.06
7	law	54	0.05
8	cause	50	0.05
9	Pope	47	0.05
10	reason	43	0.04

Detailed breakdown of noun frequencies

Diachronic Noun Analysis



How noun preferences change over time

Historical Comparison: 1400–1499

(55 items, 109 total frequency)

	Lemma (lowercase)	Frequency	Relative ?
1	fyrst	11	0.01
2	thyrd	9	< 0.01
3	second	9	< 0.01
4	cause	7	< 0.01
5	kyng	5	< 0.01
6	fyrſt	4	< 0.01
7	fyrſte	3	< 0.01
8	maner	3	< 0.01
9	cauſe	3	< 0.01
10	firſt	3	< 0.01

Most frequent nouns in early period

Historical Comparison: 1800–1899

(37 items, 53 total frequency)

	Lemma (lowercase)	Frequency	Relative ?
1	fact	6	< 0.01
2	confequence	5	< 0.01
3	probability	4	< 0.01
4	perfons	2	< 0.01
5	misfortune	2	< 0.01
6	devil	2	< 0.01
7	story	2	< 0.01
8	truth	1	< 0.01
9	bay	1	< 0.01
10	ecliptic	1	< 0.01

Most frequent nouns in later period

Summary

- **Theoretical framework:** EC-Model for understanding syntactic change
- **Methodological skills:** Corpus querying, frequency analysis, CQL
- **Research workflow:** From hypothesis to interpretation
- **Historical perspective:** How constructions evolve over centuries
- **Cognitive perspective:** How individual authors' minds differ and shape language change

References

Schmid, Hans-Jörg. 2020. *The Dynamics of the Linguistic System: Usage, Conventionalization, and Entrenchment*. Oxford: Oxford University Press.

Schmid, Hans-Jörg, and Annette Mantlik. 2015. “Entrenchment in Historical Corpora? Reconstructing Dead Authors’ Minds from Their Usage Profiles.” *Anglia* 133 (4): 583–623.