BETWEEN THE OED AND HISTORICAL TEXT COLLECTIONS:

DISCOVERING NEW WORDS

Tanja Säily, Eetu Mäkelä & Terttu Nevalainen

Ge/Token	1.0	6,00
as an legomentu/Type	0,35	0,0
verage word length	5.14	4,39 -
		Clustering: Pronouns
enkā tiedā jos neon tullu aikalle ja los panet verkkow		Edit word

And "Constant And y remerter http: net wyne wyne now. And the Blass net Safe wich hyne wyne hoe hig and do yf. Ga meet pay hen fae hig wyn al ain a charach a dd Charach a faraan. B wyne ar a dd Charach a faraan. B

> IPASTONS -47.1995 [1116.10.JOHN ippre revenert and vacchyphychil broder John I broder. I recomannel me to -gover a good invertiere and good prospertie', the gwychel Johan hertys hessel, centryhyng -gow +tat I rapak wych him bothe, on Fryday before have hym hown, +te gwyche widd save by wold thyske +tat he were put owte of servic is speet, and not hydelsty but wysly and Kyngys howse gwen he rydythe +tan +ge tat I -gow. And +see were mast gett hym i c o, and -get +tat will be to tylt. And I wort we m, so I kal be fayn to lend it him of myn own -tat he wild cum hom I wild send hym nown.



OUTLINE

VARIENG, HISTORICAL TEXT COLLECTIONS AND THE OED

NATAS: SOCIAL ASPECTS OF **NEW WORDS** IN EARLY ENGLISH LETTERS

WORKFLOWS: BACK AND FORTH BETWEEN THE OED AND HISTORICAL TEXT COLLECTIONS

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HISTORICAL TEXT COLLECTIONS COMPILED AT VARIENG

- VARIENG = Research Unit for the Study of Variation, Contacts and Change in English
- Community of linguists who study language variation and change
- Special focus on designing and compiling digitized historical text collections (corpora)
- <u>http://www.helsinki.fi/varieng/</u>

- Helsinki Corpus of English Texts (HC)
- Helsinki Corpus of Older Scots (HCOS)
- Corpus of Early English Correspondence (CEEC)
- Corpus of Scottish Correspondence (CSC)
- Corpus of Early English Medical Writing (CEEM)
- Helsinki Corpus of British English
 Dialects
- http://www.helsinki.fi/varieng/CoRD/

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THE OED AS A TOOL AND A REPOSITORY IN CORPUS-BASED RESEARCH

- The OED is studied in its own right as a source for vocabulary developments over time
- The OED is a baseline of comparison for studies on other levels of language
- Current VARIENG Digital Humanities
 projects referring to the OED:
 - Reassessing Language Change
 - STRATAS
 - <u>https://www.helsinki.fi/en/</u> <u>researchgroups/varieng/research</u>

• OED antedatings from VARIENG research publications, e.g.:

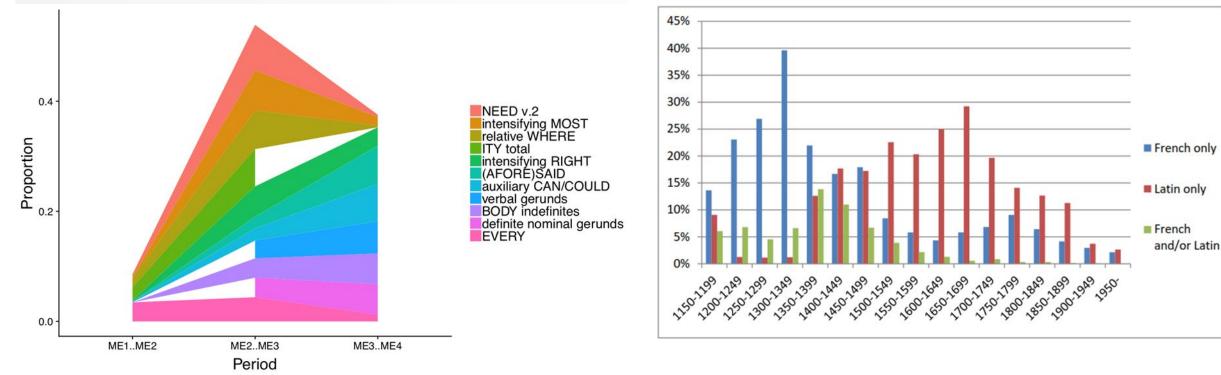
- **linguist**, in the sense 'interpreter, translator' 1st attestations
 - OED2 (1989) 1711
 - Kaislaniemi (2011) 1610
 - OED3 (2013) 1612
- Data from:
 - OED2 & 3: printed book (3: EEBO)
 - Kaislaniemi: Hakluyt Society edition

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Faculty of Arts

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RATE OF CHANGE: COMPARING CORPUS FINDINGS WITH THE MIDDLE ENGLISH INTAKE OF ROMANCE LOANS



Rate of change: incoming features in the HC

Fig. 2.6 Loanwords from French, Latin, and French and/or Latin as a proportion of all new words, as reflected by parts of *OED3* so far completed.

Durkin, Philip. 2014. Borrowed words: A history of loanwords in English. Oxford: OUP.

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OED and historical text collections / Säily, Mäkelä, Nevalainen 2019-02-26 5



NATAS: SOCIAL ASPECTS OF NEW WORDS IN EARLY ENGLISH LETTERS

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- **Research question**: discover social differences in the coining of new words
- Approach: take a collection of texts with social metadata. Find who there uses words not found elsewhere before. Discover differences by group, location, gender...
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7



- Corpora of Early English Correspondence (CEEC), long 18th century (1680–1800)
 - 315 writers (social backgrounds known), 4,945 letters, 2.2 million words
- Criteria:
 - CEEC 1st attestation \leq OED 1st attestation
 - Can occur in max 100 contemporary published texts before CEEC 1st attestation
- Automated procedures \rightarrow only 220 candidates for human to filter in interface



81 NEW WORDS FOUND

acharya, anthroponomical, anti-democrat, blueism, bonneted, canicule, cardiphonia, cast-off, catchy, chaplaincy, cleverality, curtainless, delineator, dicky-bird, double-bedded, double-cross, embodiment, envoyship, eschantillon, escritoire, freshen, fussy, godsend, grumpy, guimpe, hummingly, hydrogenate, idlish, impracticability, incomed, incontestably, inexact, inside-outness, internment, intrepid, jargonic, jumpable, keyless, kibitka, knick-knackatory, letteret, malformation, mariturient, mevrouw, missish, monotonous, moon v., moonery, nidgetty, non-papist, pacifist, paperless, pheasantry, pushery, rishi, schoolmasterishness, scratch-back, shockingly, silentious, slushy, spidery, sprawly, squeezy, stiffish, sweet-hearted, tawdrily, trickster, truantism, unailing, unbitten, unclassed, uncommonness, undefeat, unenjoyable, uneventful, ungown, uninsured, uninteresting, unstowed, wagon-way, *yester-evening*

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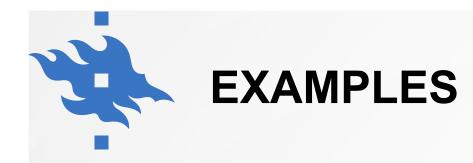
WHO ARE THE INNOVATORS?

- Surprisingly many new words compared to number of running words:
 - Lower clergy (Thomas Twining: 13)
 - Other non-gentry (lowest category)
 - John Jackson (2), farmer's son, upwardly mobile
 - Ignatius Sancho (2), son of a slave, upwardly mobile
 - George Culley (1), farmer
- Surprisingly few:
 - Royalty

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Social rank	# of neologisms
Professional	26
Clergy, lower	22
Gentry, lower	13
Nobility	6
Gentry, upper	6
Other non-gentry	5
Clergy, upper	1
Merchant	1
Royalty	1



Mr Collings prize tup is not very capital to handle, but rather **catchy** to look at.

(George Culley to Matthew Culley, 1784; OED 1831)

We hope he is well, and enjoys this fine weather unplagued by flies, and **unbitten** by fleas.

(Ignatius Sancho to Mrs. Cocksedge, 1779; OED 1794)



Ignatius Sancho & Princess Elizabeth (Wikimedia Commons)

Our dear mother is well but hurried, my sister very **fussy** & agitated, the rest of the family in full trim though *heart full* from the thoughts of so soon being seperated, with laughing faces to keep up one another's spirits.

(Elizabeth Hanover to the Prince of Wales, 1797; OED 1831)

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• OED3 catchy, adj., sense 2b:

'That is designed or intended to draw attention; attractive; eye-catching.'

Current 1st attestation:

1831 *Fraser's Mag*. July 679/2

A catchy, stage-like effect.

 Straightforward antedating: 1784 G. CULLEY 1 Oct.

Mr Collings prize tup is not very capital to handle, but rather **catchy** to look at.







- OED2 anti-democrat, n.: 'One who is opposed to democracy or to the principles of the Democratic party in the United States.'
- Current 1st attestation:
 1802 (*title*)

The Republican; or, Anti-Democrat [cited in D.A.].

Antedating:

1799 S. LENNOX 25 Mar. My husband you know is a *decided Royalist* & a supporter of *monarchy*, consequently a decided **anti-Democrat** & anti-Republican (as this term is *now* understood, for the Government of England properly speaking is a Republican form of Govt): this agrees perfectly with my own disposition.

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OED3 pacifist, adj.: 'Of, relating to, supportive of, or characterized by pacifism.'

• Current 1st attestation:

1906 Times 8 Aug 3/3M. Paul Fribourg, waxes eloquent to-day in the PetiteRépublique in his reproaches of his German comrades for their opposition to the'Pacifist League'.

• Antedating?

1717 T. YORKE 30 May My mother..has an honest attorney, that will not hurry her into vexatious lawsuits out of any self-interest; and we take all oppertunitys to incline her to a **pacifist** disposition.



OED ANTEDATINGS: HUMMINGLY



- OED2 hummingly, adv.: 'With a humming sound.'
- Current 1st attestation:

1908 *Daily Chron.* 21 Jan 6/5

He..endeavours to follow the service and join hummingly in the hymns.

- Antedating?
 - 1775 D. GARRICK 7 Nov.
- the Little Gypsy* goes on Hummingly, & rises nightly in repute –

*Musical farce, words by Garrick

• From OED2 *humming*, adj. 2a 'of extraordinary activity' (1654)

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OED ANTEDATINGS: PAPERLESS

• OED3 paperless, adj.: 'Lacking official documentation; computerized'



 Current 1st attestation: 1854 T. CONNEAU *Capt. Canot* 245

As soon as the cargo was safe.., I resolved to disregard the flagless and paperless craft that bore it.

Antedating?
 1799 F. BURNEY 22 July

I shall be very anxious for dry weather for them – in our curtainless & **paperless** apartment.

• Different sense – cf. OED2 curtainless 'without a curtain' (1822)

MEANINGS OF NEW WORDS IN 18TH-CENTURY LETTERS

- People: emotion, mental capacity, attention & judgement, behaviour, manner of action
 - *ill-natured*, *cleverality*, *nidgetty*, *missish*, *fussy*
- **Society:** communication, trade, work, faith, authority
 - escritoire, knick-knackatory, wagon-way, chaplaincy, envoyship
- World: action, space
 - godsend, unstow

of new words per HT category

- 6 the world » action or operation
- 6 the mind » emotion
- 5 society » communication
- 4 the world » space
- 4 the mind » mental capacity
- 4 the mind » attention and judgement
- 3 society » trade and finance
- 3 society » occupation and work
- 3 society » faith

. . .

3 society » authority



- Big-data approach: massive databases & automated pipeline → possible to quickly discover dozens of new words in millions of words of running text
 - Contribution to OED: not only antedatings but also new senses, etc.
- What are we **missing**?
 - Different words/senses spelled in the same way, compounds written separately, ...
 - Actual 1st attestations? Are these innovators or just early adopters?



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 - Middle English Dictionary (MED): ~60,000 words from 1000–1500. ~260,000 spellings
- Result: ¹/₄, ~36,000 word forms can be mapped to the dictionaries, ³/₄, ~88,000 cannot

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 - "... Ships as shall be in <u>readynesse</u> for that service, and this matter <u>requireing</u> the greatest secrecy,... Your very <u>affectionett</u> <u>freind</u>" (Queen Anne, 1704)
 - "Right worshipfull and my most entierly beloude moder, in the most louly maner I recommand me vnto youre gode moderhode," (Elizabeth Poynings, 1459)



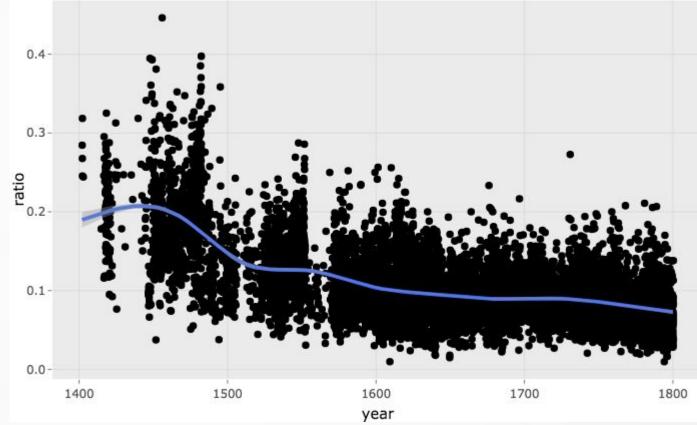
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FILTERING STATISTICS

- Proportion not in dictionaries decreases through time (= spelling standardizes)
- ~32,000 non-foreign/non-proper words first seen in the long 18th century
- ~8,800 directly match a dictionary word, ~1,300 more are found through variants
- 487 of the matching words predate their OED attestation



OED Lemma♥	Word	Category	Notes (62)	Earliest	OED -	Total DF	Total TF	Frequency	×
				letter	CEEC	before	before		your own dinmonds &c must be kept. Barmton. Mr Collings prize tup is not very capital to handle, but rather tup is not very capital to handle, but rather
acharya	acharya	yes		1789	3	0	0	1	<q 1784="" a="" fn="" gculley=""> <x culley="" george=""> <p 179=""> [] [\1.\] }] [^GEORGE CULLEY TO MATTHEW CULLEY^] Durham 1st October 1784 Mr Gill had so much to</p></x></q>
anthroponomical	anthrop	yes		1734	0	0	0	1	say about his tour into the west that I could not get from him last night. He has a nephew a son of Joseph, not of (^Arramathea^) but Shildon that he wants to put to us, to work and learn farming, we to find him victuals only, Mr Gill clothes, I told him I could
anti-democrat	anti-den	yes	different	1799	3	0	0	1	say nothing as I had no house, and was rather cold about it, and said he wo along. He says he does not kill half the large sheep he used to at this season and his neigbours the same. Bought the other day of the Cook &c near 400 small sheep and near 30
blueism	bluism	yes		1795	0	0	0	1	cattle. I think you must buy Mr John Robsons wethers, and may enquire about Mr Wilsons of Eslington. I now think dear as sheep are they will pay till Christmas, but am
bonneted	bonnete	yes	even if V	1781	43	17	17	1	not fond of keeping all till spring, your own dinmonds &c must be kept. Barmton. Mr Collings prize tup is not very capital to handle, but rather catchy to look at. It looks like Mr Wastles judgement weakening Mr Collings says he has let one to George Lax &c
canicule	canicule	yes		1701	0	5	5	1	better than him but not so pleasing to look at, he was gone so did not see him, let at 9 guineas also, Mr Colling will not be a marr trade. He is clear for letting at good prices or none. Mr Colling has some promising lambs, which I am glad off. Wheat a better crop
cardiphonia	cardipho	yes	actual 1:	1780	1	2	2	1	here than I expected, oats a bad one, beans good and barley good, this last grain I am inclined to think has a chance to gett to expect them until they come. I was at
cast-off	cast-off	yes		1692	48	71	73	2	Burdon, Mr Wastle poorly, Mrs Wastle very well. Mr Wastle says beef must be 2s 8d pibj Bilhop; awid Jnfeph Nagle, a before March. Northallerton a pretty good shew of cattle, and not quite so high as have city of
				-					been. I send this by your friend Mr John Mason to Alnwick fair. Bob got here with the tups all well by 6 o'clock but I have not seen them. Mr Wastle says Mr Charge sent bad
catchy	catchy	yes		1784	20	35	35	1	queys into Russia. Tell Nanny Brown I saw her brother Jack, who desired his love, and They havesabovi eT Sen tear highly commendee in or making the own of count commendee in or making the own of count commendee in or making the own of count
chaplaincy	chaplair	yes		1741	4	0	0	1	Guy, of Duke-dtreet, York-buildings, Sur; catchy i geon, deceafed, begs leave to inform the pullie, that he has ,le, chi
cleverality	cleverali	yes		1778	50	0	0	1	purchafed of Mr.
curtainless	curtainle	yes		1799	23	0	0	1	NTbhrfdar nert, the 12th Itflant, the O cleb x ted CATCHY!
delineator	delineat	yes		1736	38	28	28	1	.* But they are All of a piece; st yet they lye upon the Catchy to Trip up the Heels one of Another.* Prethee wilt thou make these Things Hang Together, now.
dicky-bird	dicky-bi	yes	figurative	1778	3	0	0	1	:rpondenta in' moll of the great towns in the ldngdnm, thore .vvho live in the country may be fupplied ;; -for if th y- lhotild have any doubts with refpefi to the fignarureori rbe padke'ts~t laey ma~y be: able to
double-bedded	double-	yes	double-t	1798	0	7	7	1	OED Oxford English DictionaryQuick search: Find word in dictionary GO Browse: The definitive record of the English language
double-cross	double-	yes	different	1754	80	0	0	1	Lost for Words? Advanced search Help
embodiment	embodiı	yes		1777	51	2	2	1	View full results for 'catchy' Help on Dictionary Entry Print Save Email Cite
envoyship	envoysh	yes		1706	30	0	0	1	Catchy, adj. Text size: A A This entry has not yet been fully My entries (13)
eschantillon	eschant	yes		1717	3	5	5	1	View as: Outline Full entry Quotations: Show all Hide all Keywords: On Off published 1889). My searches (15)
escritoire	escritoir	yes		1694	13	3	3	1	Pronunciation: Brit.)/'katʃi/, U.S.)/'katʃi/ Entry history Jump to: Etymology: < CATCH v. + -Y suffix'.
freshen	fresheni	yes		1680	17	1	1	1	colloq. Previous version: OED2 (1989) Entry ▼ C
fussy	fussy	yes		1797	34	72	72	1	1. Adapted to catch the attention or fancy; attractive, 'taking'. Thesaurus > Categories > Categories >

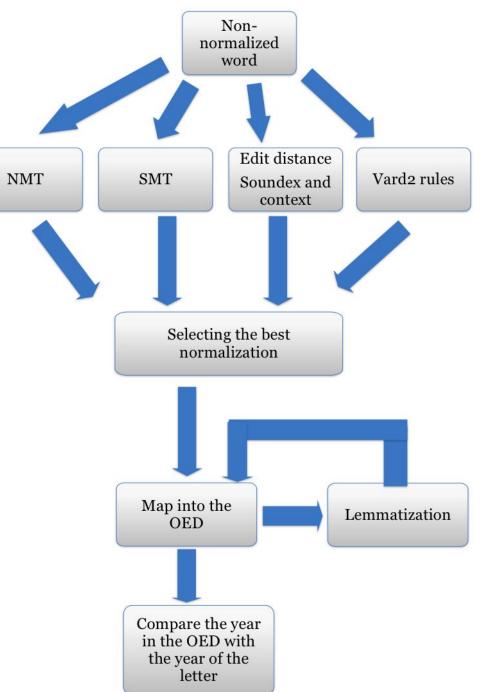


- ~32,000 non-foreign/non-proper words first seen in the long 18th century
 ~8,800 directly match a dictionary word, ~1,300 more are found through variants
- $\sim^{2}/_{3}$ of the material, $\sim^{22,000}$ not matched

 \rightarrow cannot yet say anything reliable about social aspects of new word creation as a whole



- VARD2 normalization rules
 - 58 rules, e.g. " $u \rightarrow v$ anywhere"
- Edit distance against dictionary words + filter by context similarity
- Character-based machine translation
 - Neural machine translation (NMT)
 - Statistical machine translation (SMT)
 - Both use CEEC, MED and OED as input
 - Language model = British National Corpus



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EXAMPLES FROM THE 18TH CENTURY

Word	ΝΜΤ	SMT	Edit distance	VARD2	Correct
elyzian	elizian	elysian	elysian		Elysian
arch-type	archedip	archetype	archetype		archetype
kindelyer	kindler	kinder	kindlier		kindlier
supp'd	supped	supply	supply	cupped	supped
prosprity	prosperity	prosperity	prosperity		prosperity
affectionett	affectiont	affection	affectionate		affectionate
driction	driction	diction	direction		direction
octvo	ctuoctoo	octal	oct, oct.		octavo
mic'lemas	micelemas	miles	micklemas		Michaelmas
midetrenian	midetrenian	mid-on			Mediterranean



METHOD ACCURACIES

- NMT: 46%
- SMT: 32%
- Edit distance: 31%
- VARD2 rules: 15%
- At least one correct: 67%
- Adding social or temporal metadata to the NMT did not help



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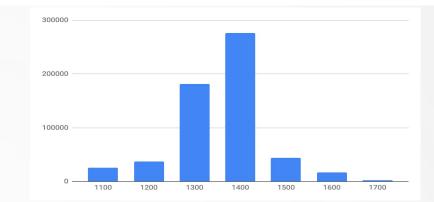
- Neural lemmatisation + NMT + OED filtering: <u>61%</u>
- Century-specific accuracies:
 - 15th: 69%
 - 16th: 78%
 - 17th: 71%
 - 18th: 50%
 - \rightarrow Is 18th century variation more individual, earlier spelling variation more general?

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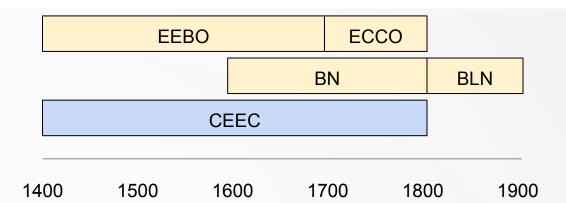
 \rightarrow Is 18th century variation more individual, earlier spelling variation more general? Or, is this an artifact due to our training data also being mostly from 14th–17th century?

32



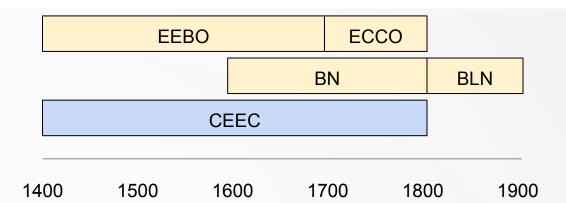
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 - British Library Newspapers: ~655,000 newspaper issues, ~40 billion running words 1800–1900 (BLN)
 - Burney & Nichols Collections: ~230,000 pamphlets and newspapers, ~2.7 billion running words before 1600–1800 (BN)
 - Eighteenth Century Collections Online: ~210,000 books, ~10 billion running words 1700–1800 (ECCO)
 - Early English Books Online: ~60,000 books, ~1.4 billion running words 1400–1700 (EEBO)





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 - All except EEBO contain a large number of OCR errors

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T Is not Saint George we Sing of here, Nor George, the fatal Duke Villier; Nor George a Green, nor Castriot, Nor Buchanan the learned Scot; But tis of George the Valiant Monck, That made Van-Trump in's Blood dead-And in the Seas his Navy funck. (drunk Oh! this is our brave George! Isw-not- Saint George we Sing of here, Nor George, the fatal Duke Villier ; Nor George a Green, nor Castriot, Nor Buchanan the learned S cot q But us of George the Valiant Monck, That made Van-Trump in'S Blood deod and in theseus his Navy snuck. (drunk, Ok I this is our brave George !

THE	~ ~k ~ ~l I ~l
Firstevolumeofthe	~ ~1l ~ ~'bnl
Chronicles of England, Scot-	.~1 1~t ~=i~m
lande, and Irelande. CONTEYNING,	~=1~III
The defcription and C homicles of England, from the	~ -,~
The defeription and Chionicles of Sootland, from the fielt originali of the Scories nation, tui the years ofour 2020e. 1 571	'.~`~@ ~~~
Ebs Defeription and Thionicies of Piclante, hilles ufe from the firste opigmall of that Mation, but ut the yeare. 1 547.	I I noir
Faithfully gathered and fet forth, by Raphaell Holinshed.	1~.1 ~ ''' ~ ~
AT LONDON, Imprinted for Iohn Harrison.	" ~
Imprinted for John Harrison.	-: ~ <u> </u>

l I ~ li ~]J]O DmU~ov O~1i | ~1l~~-\O~Si~\r<,St~5,0 t%,\~t,\~~~ '.-bnEIs~l br~; <~5n~1 ~ ~1 1~t ~3mo71~l<~7noostI3o~rsd =i~mlm87il fif ~s ~ '3,Ilmo~l.6n3~nm/l7~=io\~~7g~i ..~ -,~. ;lIl~1B~]8 ~ . ~ ~ ' ~ ~`~@~ ~ ~`~pA til Sns t' - b~ ~I\U\ `i:~] ~~ I noin~Hodol~o]bsJni~qml '~1 11 ~.1 ~ ~1 11 ~~ |'? '~ 9~ 9~] boO \~ .---. ~13 ~ ~ ~ ~___1



Out of the ~22,000 18th century words that couldn't be mapped to a dictionary word:

- only 590 appear in over 100 documents in the comparison corpora before
- ~9,000 appear in 100 or less documents at any time
- ~2,500 appear in more than 100 documents later but not before



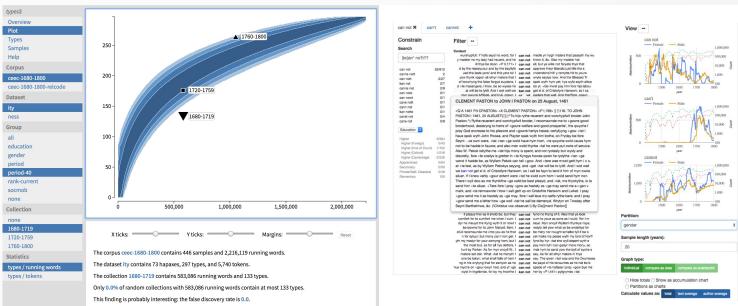
ASKING THE RIGHT QUESTIONS

- Because we have so many sources of noise that aren't uniformly distributed, purely automated general analysis of social aspects is impossible
- Need to ask more focused questions that can be answered by combining the tools we do have with a bearable amount of manual labour
- Limit by time, filter by appearance in dictionaries and texts before/after
- "Who coins new words" \rightarrow
 - "Who coins new words in the 18th century that come into general use later?"
 - "Who coins nonce words in the 18th century that are used only once and never seen again?"

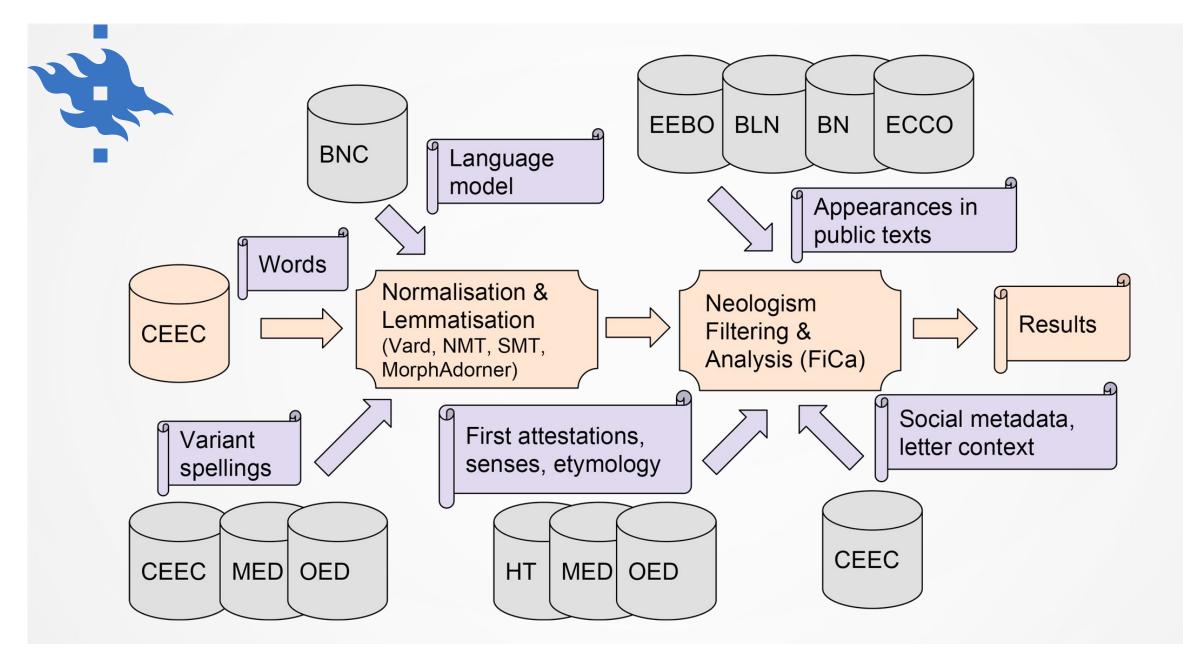
OED Lemma♥	Word	Category	Notes (62)	Earliest	OED -	Total DF	Total TF	Frequency	×
				letter	CEEC	before	before		your own dinmonds &c must be kept. Barmton. Mr Collings prize tup is not very capital to handle, but rather tup is not very capital to handle, but rather
acharya	acharya	yes		1789	3	0	0	1	<q 1784="" a="" fn="" gculley=""> <x culley="" george=""> <p 179=""> [] [\1.\] }] [^GEORGE CULLEY TO MATTHEW CULLEY^] Durham 1st October 1784 Mr Gill had so much to</p></x></q>
anthroponomical	anthrop	yes		1734	0	0	0	1	say about his tour into the west that I could not get from him last night. He has a nephew a son of Joseph, not of (^Arramathea^) but Shildon that he wants to put to us, to work and learn farming, we to find him victuals only, Mr Gill clothes, I told him I could
anti-democrat	anti-den	yes	different	1799	3	0	0	1	say nothing as I had no house, and was rather cold about it, and said he wo along. He says he does not kill half the large sheep he used to at this season and his neigbours the same. Bought the other day of the Cook &c near 400 small sheep and near 30
blueism	bluism	yes		1795	0	0	0	1	cattle. I think you must buy Mr John Robsons wethers, and may enquire about Mr Wilsons of Eslington. I now think dear as sheep are they will pay till Christmas, but am
bonneted	bonnete	yes	even if V	1781	43	17	17	1	not fond of keeping all till spring, your own dinmonds &c must be kept. Barmton. Mr Collings prize tup is not very capital to handle, but rather catchy to look at. It looks like Mr Wastles judgement weakening Mr Collings says he has let one to George Lax &c
canicule	canicule	yes		1701	0	5	5	1	better than him but not so pleasing to look at, he was gone so did not see him, let at 9 guineas also, Mr Colling will not be a marr trade. He is clear for letting at good prices or none. Mr Colling has some promising lambs, which I am glad off. Wheat a better crop
cardiphonia	cardipho	yes	actual 1:	1780	1	2	2	1	here than I expected, oats a bad one, beans good and barley good, this last grain I am inclined to think has a chance to gett to expect them until they come. I was at
cast-off	cast-off	yes		1692	48	71	73	2	Burdon, Mr Wastle poorly, Mrs Wastle very well. Mr Wastle says beef must be 2s 8d pibj Bilhop; awid Jnfeph Nagle, a before March. Northallerton a pretty good shew of cattle, and not quite so high as have city of
				-					been. I send this by your friend Mr John Mason to Alnwick fair. Bob got here with the tups all well by 6 o'clock but I have not seen them. Mr Wastle says Mr Charge sent bad
catchy	catchy	yes		1784	20	35	35	1	queys into Russia. Tell Nanny Brown I saw her brother Jack, who desired his love, and They havesabovi eT Sen tear highly commendee in or making the own of count commendee in or making the own of count commendee in or making the own of count
chaplaincy	chaplair	yes		1741	4	0	0	1	Guy, of Duke-dtreet, York-buildings, Sur; catchy i geon, deceafed, begs leave to inform the pullie, that he has ,le, chi
cleverality	cleverali	yes		1778	50	0	0	1	purchafed of Mr.
curtainless	curtainle	yes		1799	23	0	0	1	NTbhrfdar nert, the 12th Itflant, the O cleb x ted CATCHY!
delineator	delineat	yes		1736	38	28	28	1	.* But they are All of a piece; st yet they lye upon the Catchy to Trip up the Heels one of Another.* Prethee wilt thou make these Things Hang Together, now.
dicky-bird	dicky-bi	yes	figurative	1778	3	0	0	1	:rpondenta in' moll of the great towns in the ldngdnm, thore .vvho live in the country may be fupplied ;; -for if th y- lhotild have any doubts with refpefi to the fignarureori rbe padke'ts~t laey ma~y be: able to
double-bedded	double-	yes	double-t	1798	0	7	7	1	OED Oxford English DictionaryQuick search: Find word in dictionary GO Browse: The definitive record of the English language
double-cross	double-	yes	different	1754	80	0	0	1	Lost for Words? Advanced search Help
embodiment	embodiı	yes		1777	51	2	2	1	View full results for 'catchy' Help on Dictionary Entry Print Save Email Cite
envoyship	envoysh	yes		1706	30	0	0	1	Catchy, adj. Text size: A A This entry has not yet been fully My entries (13)
eschantillon	eschant	yes		1717	3	5	5	1	View as: Outline Full entry Quotations: Show all Hide all Keywords: On Off published 1889). My searches (15)
escritoire	escritoir	yes		1694	13	3	3	1	Pronunciation: Brit.)/'katʃi/, U.S.)/'katʃi/ Entry history Jump to: Etymology: < CATCH v. + -Y suffix'.
freshen	fresheni	yes		1680	17	1	1	1	colloq. Previous version: OED2 (1989) Entry ▼ C
fussy	fussy	yes		1797	34	72	72	1	1. Adapted to catch the attention or fancy; attractive, 'taking'. Thesaurus > Categories > Categories >



- Currently: combination of FiCa and Excel
- Need to develop an all-in-one interface that also provides visualizations and statistical analyses



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- Extend analysis to entire time period; also analyse words not in the OED, check instances in contemporary published texts
- Improve normalization, develop discovery pipeline further
- Integrate social analysis functionality to pipeline