







living in some squalor; the other exhibitions were **IN** houses, old shops, small factory spaces, offices a 'might be described as 'wet' or 'dry' (W or D) and **IN** a humid temperate climate such as Britain experie e powerful message put across by the curriculum **IN** most schools is that knowledge can be divided into ot like the trouble we had half an hour ago, when **IN** fact there were three lines, sections of which there opportunities for oral **READING** arise naturally **IN** the course of the day; for instance, in the activity of traditional hand-made **CONCORDANCES IN** several ways. One is that they will be much more ched Milan. 'How old were you when you arrived' **IN** Italy?' The American journalist broke into his though of Modern Art, keen in discerning what was good **IN THE** arts of many ages and styles. As for working who felt it necessary to take aside both captains **IN** the **21**ST minute and warn them about each tean mation has undergone several media revolutions **IN** the last **CENTURY**. In principle, now that operations from arts education in general, to one area **IN** particular, namely English lessons and the fictional of the horse was, shall I say dreamed up, erm and **IN** fact we had one or two horses, Clydesdale horses faded woods. It was merely that he never wanted **IN** a tournament round to risk anything which might under the state of the five focus from arts education in general, to one area **IN** particular, namely English lessons and the fictional factors was marked that he never wanted **IN** a tournament round to risk anything which might under the state of the state of the state of the five factors are the state of the never wanted **IN** a tournament round to risk anything which might under the state of the state of

Reading concordances with algorithms CL 2025 Workshop | 29 June 2025

Reading Concordances in the 21st Century (RC21) project team

Nathan Dykes • Stephanie Evert • Michaela Mahlberg • Alexander Piperski

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Workshop overview

- Concordance reading
- II. Strategies for organising concordances
- III. Hands-on: traditional concordancers

- IV. Reading concordances with algorithms
- V. Hands-on: FlexiConc
- VI. Summary / outlook: Jupyter notebooks

Orientation

What we're going to look at now ...

- What is a concordance?
- When do you use them?
- How can we make sense of concordances?

A concordance ...

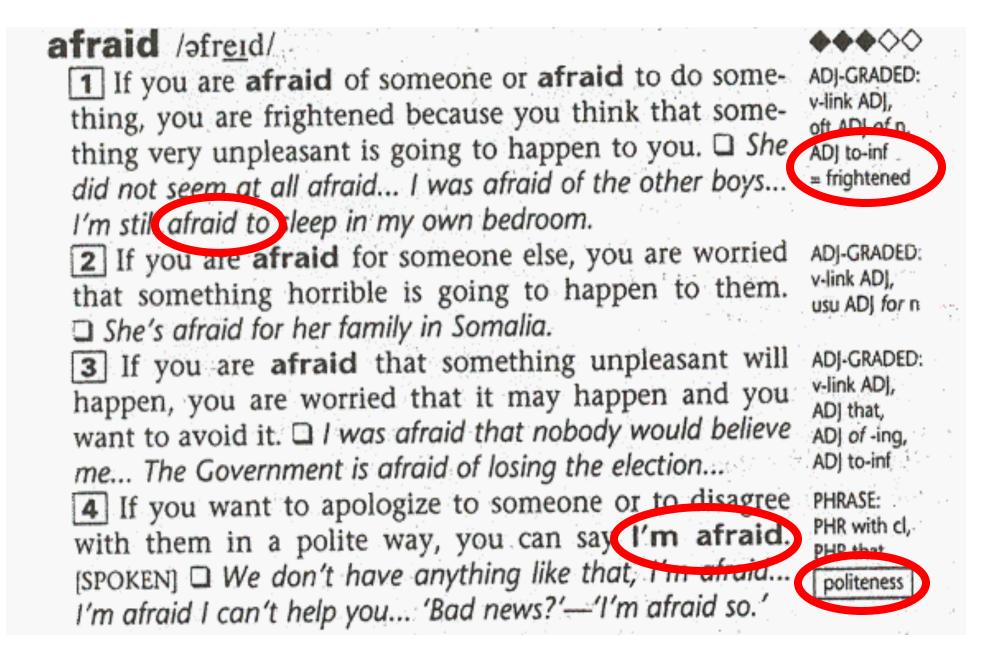
- Collects all the occurrences of a search term (the node) in a corpus (or a lexico-grammatical pattern matching a corpus query)
- Usually displayed in a compact tabular format suitable for "vertical reading": kwic = keyword in context (Luhn 1960)
- Well-suited for identifying recurrent patterns, often by rearranging lines with the help of concordancer software
- Link between "distant reading" and "close reading" in DH

A concordance ...

s flagship Odeon cinema said: `I am afraid Ally's been subbed." Rangers notions in ten years. I'm afraid I have to tell you that I believ company operations you own; I'm afraid I've got to get some detail." < ou know me?" he said grumpily. `I'm afraid I don't know you. I've shaved of that band of loonies? I'm afraid it's just no contest at all. <h hellip; we cocoon because we are afraid of saying the wrong thing or not a Pullman, and partly because he was afraid of being seen there by some attacks. They think she is afraid of upsetting the politicians lin Into the lens, but equally do not be afraid of photographing against the lig because health professionals were afraid to cross lines marking religious willowy decadence, blase, stupid, afraid to be seen sober or with a book, t say yea or nay, and he was afraid to ask. When the new field 1 with their eyes what they were afraid to put into words. Is it possib Monica) Lewinsky report, you are afraid to put a cigar in your mouth. Th

A concordance illustrates patterns of a word

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Sinclair, J. McH. (ed.) (1987). Collins Cobuild English Language Dictionary: Helping Learners with Real English. Collins ELT.

Theoretical background

Pattern Grammar

"a pattern is a phraseology frequently associated with (a sense of) a word, particularly in terms of the prepositions, groups, and clauses that follow the word."

(Hunston & Francis 2000)

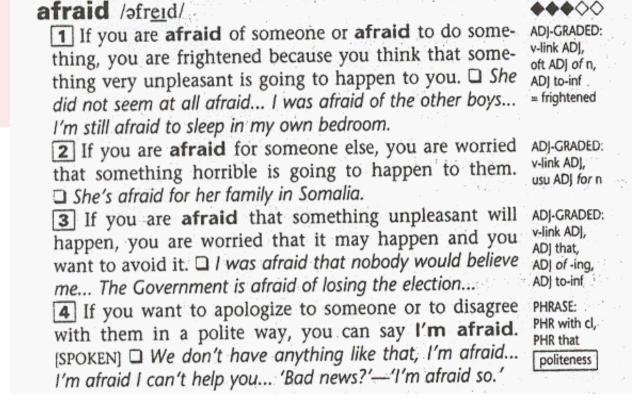
Patterns of afraid

v-link ADJ of

I was afraid of the other boys.

v-link ADJ for

She's afraid for her family in Somalia.



Controversy patterns in text-initial sentences of news reports

(Mahlberg & O'Donnell 2008)

- Ken Livingstone has provoked a <u>fresh row</u> with the motoring lobby ...
- The RUC was plunged into <u>fresh controversy</u> last night when ...
- Reform of the Lords will erupt into <u>fresh controversy</u> today when a minority ...
- THE BBC was facing <u>fresh embarrassment</u> last night when one of its most senior news presenters attacked managers for undermining television news coverage.

FACE/SPARK	fresh	NOUN	ABOUT	TIME	AFTER
be embroiled in	fresh	controversy	over	yesterday	when
be at the centre of		row	about	last night	as
be dealt		embarassment	to	today	
ignite		blow			
heap on					
erupt					

Lexical item (e.g. Sinclair 1988)

- Core
- Collocation
- Colligation
- Semantic preference
- Semantic prosody

• Famous examples: naked eye, true feelings, budge

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, and so they much preferred the (very few of these) or through Now to expand our horizons: The . You see a disk with some > <t> <CQ1> Would you like to . <t> About five years ago, a > and said, <CQ1> As I've gotten > . We should trust our patients > . Typically, the closed .<t> And even more disturbing > , she was nothing more than a > .<t> While stroke path can be > from a helicopter, and the water . The corpus luteum forms in the .<t> The time of ovulation in > . The ovary still contains the > beneath a shroud of poison ivy, , the young borers work their > just as much as those for which > . For. as his newly curvaceous > \People from varied stations &nac32l; with Parsons' only can barely see the far shore # . Time to settle down for a . The air smelled of summer's , like nothing more than dining > , these are very faint aren't . The opening of each envelope is for nearly 400 years # The last for 400 years and is relatively for 400 years and is relatively . And the sewage is not only bad . That was almost four years > and passed extremely close to > on a dark night. The fourth >and passed extremely close to >

Hands-on: manual concordance reading

Activity

- What patterns can you detect in the following two concordances?
- You might want to think in terms of collocations, colligation, semantic preference, semantic prosody

to really let rip with their true feelings, only time will tel of being able to hide her true feelings. In public life th are goin through and their true feelings. And anyway Don, y of our inability to mask our true feelings was unearthed by J leaves little doubt as to his true feelings. And as for Li X calm and composed, masking her true feelings. So her demeanour w accounts, has now conveyed his true feelings. We await the out as a cloak to disguise their true feelings. Deborah Bruce's p ve watched her. No doubt her true feelings were emerging from he may prefer to let his true feelings out in print. Today that - even if those were his true feelings. Instead he did s moist-eyed, and makes known her true feelings, what does Parker d get a hint of Do Thi's true feelings but Caine and Fra of being able to hide her true feelings. In public life th to invade Iraq. Whatever his true feelings about the war, the perhaps an indicator of his true feelings. FROM REED ORGAN TO Chapman's words revealed his true feelings towards his child's is meaningless.' Whatever his true feelings on the high- vers Kent last week let slip her true feelings about royal li tune she marries him, but her true feelings are even displayed evidence of "Old Europe's" true feelings towards Britain when speak the truth or reveal your true feelings because that's NOT run. If he was disguising his true feelings he did it masterfully ple being able to express their true feelings of rawness and to p Chilean cities to express their true feelings about this fateful

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Your query "TAB [word="coffee" %c]" returned 6274 hits in 1226 different texts (98,313,429 words [4,048 texts]; frequency: 63.82 instances per million words) (displayed in random order) << >> >| Show Page: 1 **Show Sentence View** Show in corpus order **New Query** Go! ~ Page 1 / 126 **Filename** Hits 1 to 50 **CKY 1309** on the complicated state of research on Veit Stoss. For the coffee table, Seemann offers Georg Brühl's Art Déco, a presentation **2** JY2 243 for too long I get stale.' At that moment the coffee arrived, and as Luce opened a pack of sugar and stirred , an expanding plantation economy removed the forest and became dominated by coffee and bananas, with a dangerous reliance on a few exports. **3** J18 1450 A0F 1960 . The following morning at nine o'clock I went back to the coffee shop, just to show that I was still around. " coffee Day is the twenty fifth! Do you want a cup of Geoff? I bet this bit I'll have it after my 5 KCT 7412 want any bloody smoked reindeer. Tony brings me a cup of and tells me that the tracks we crossed a while back were 6 A6T 2240 coffee **7** CBC 13409 the speed with which the body disposes of alcohol, and the **coffee** doesn't make her any more sober. She says: ' coffee , pop to the bathroom, feed the cat, water the 8 CGX 766 a time; after this I go and make a cup of 9 HC4 122 refurbished the 3,000 sq ft area in the Dome, formerly a coffee shop, with the traditional Pizza Hut awning and style. Comir **AYK 146** coffee we need cheering up? We have a cup of tea or (or even something stronger). We have grown accustomed to **Coffee** Bar of work for sale by local artists is available from the G2N 696 special exhibition. A separate programme of exhibitions and displays in the A0X 1789 a nest of tables. Brian Cook shows how to make a coffee table, and Steve Goulden will be moving to the second part EA9 2162 such as laundry, telephone, valet, restaurant, bars, coffee shops, newspapers, etc. 2. The keys cover eleven H85 2801 . He recognized a time to change tack. 'Any more coffee in the pot?' Sarah shook it. 'A cup A2V 550 painful for societies with large loss-making estate agency chains. Commodities: By PATRICK HOSKING DELEGATES to the International Coffee JY8 1056 cup and chewed the remaining scrap of bread and cheese. 'Coffee ?' Travis held up the Thermos and Paige nodded, proffering KE2 8835 , so I said well erm Sister had spoken Kay doesn't said I don't know we've got to stop having the coffee EET 1400 good choice of facilities. Restaurant serving both international and Creole cuisine Coffee shop Outdoor barbecues Air-conditioned residents lounge Co KRM 614 . I mean would you have a sergeant's wife round for coffee here? Yes, yes, quite happily. And I do , an unusual thing happened. Viola Machin came to the kitche **20** H9D 371 was boiling milk in the kitchen for her good night cup of coffee 21 CCS 804 thermos, however, brought the first faint warmth to his bones as the man staying with the canoe. A gulp from the coffee

Orientation

What we have learned so far ...

- Concordances collect occurrences of a node for "vertical reading"
- Help corpus linguistics detect recurrent patterns
- But often not so easy to spot patterns in real-life concordances

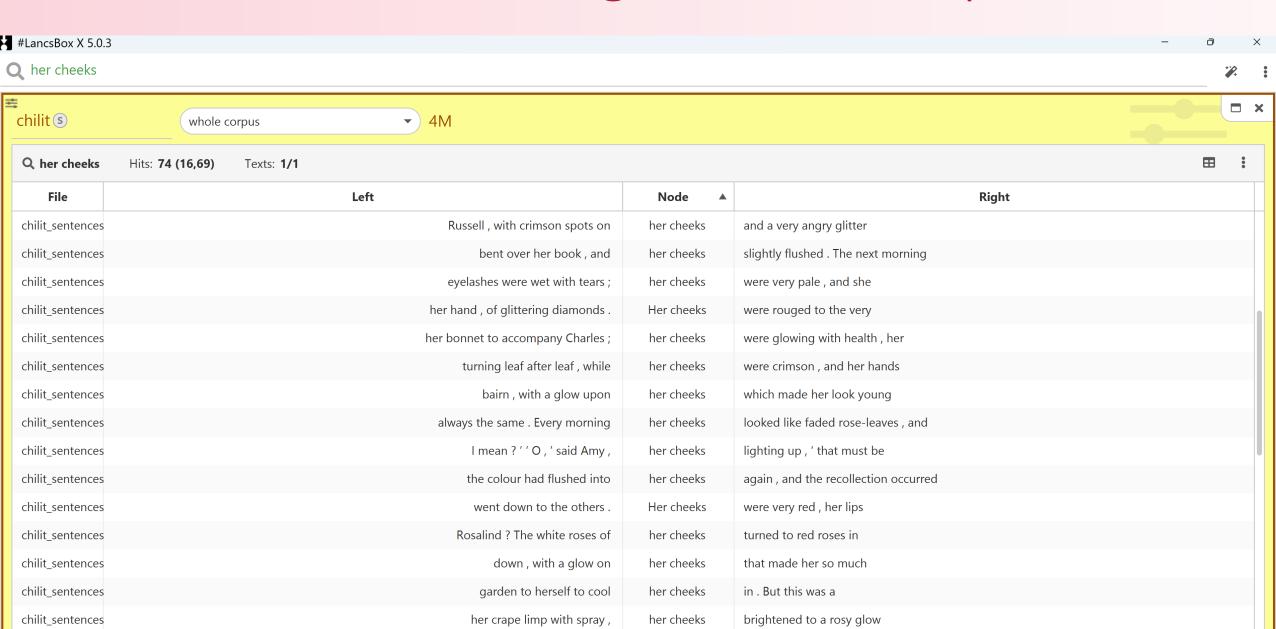
What we're going to look at now ...

- How does software support reading concordances?
- What general strategies are used to organise concordance lines?
- Activity: concordance analysis of body parts in 19th century fiction

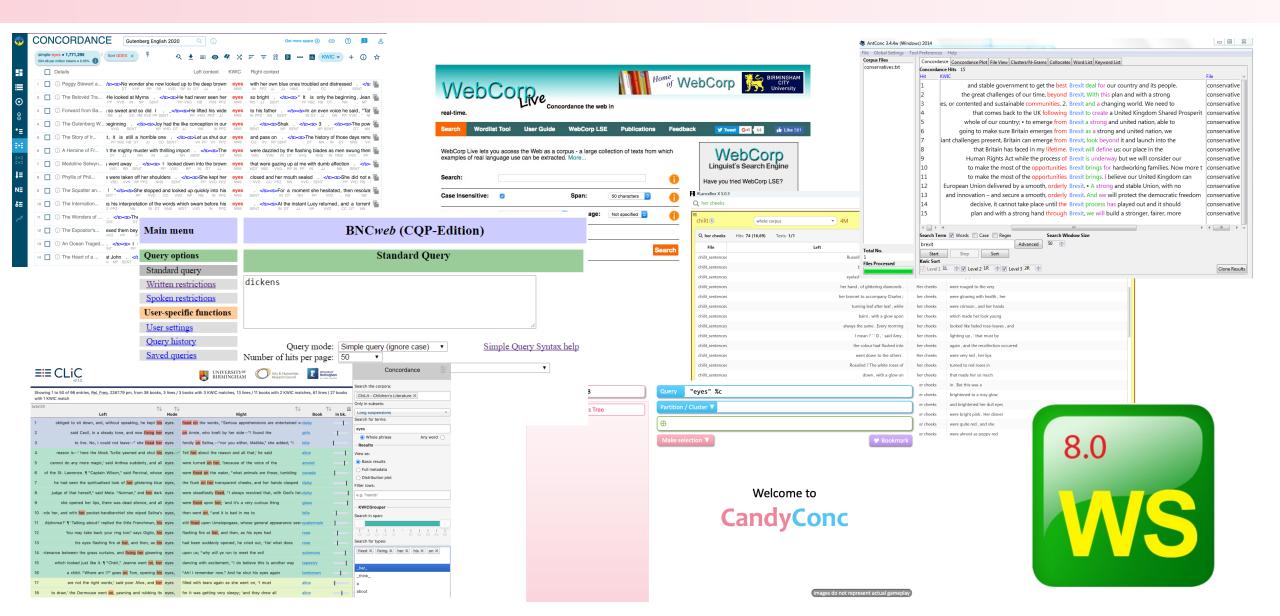
A corpus reading procedure (Sinclair 2003)

	Step	Summary			
\rightarrow	→ 1. Initiate Decide on the strongest patterns to the left or right of the node				
1		recurring words, word forms, or parts of speech.)			
	Interpret Find a hypothesis that links (most of) the repeated words. The link				
	be lexical, semantic, or syntactic.				
3. Consolidate Look for further evidence to support the hypothesis (e.g.					
ı	meanings expressed in different ways, words in more distant po				
4. Report Write out an explicit, testable version for the future.		Write out an explicit, testable version for the future.			
	5. Recycle	Repeat steps 1-4 with the next most important pattern. Continue until			
		you cannot find any more repeated patterns. Classify the remaining lines			
as either unusual or a potential pattern that is rare in this se					
	6. Result Make a list of final hypotheses.				
	7. Repeat Repeat with a new sample to confirm, extend, or revise your hypoth				

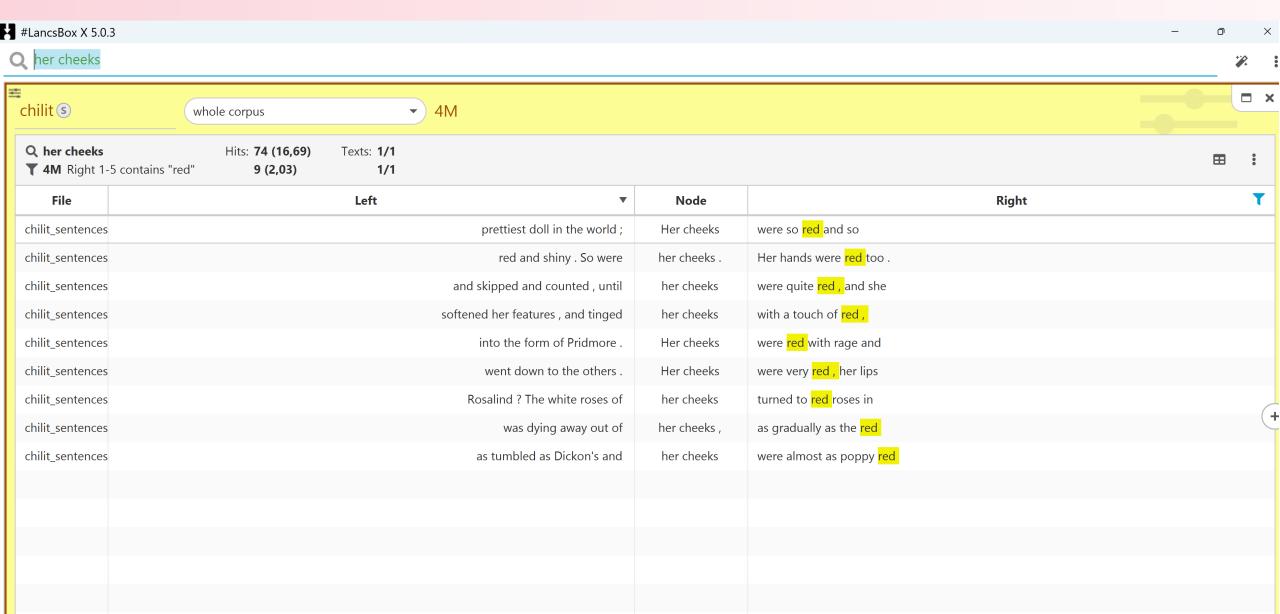
How can concordancing software help?



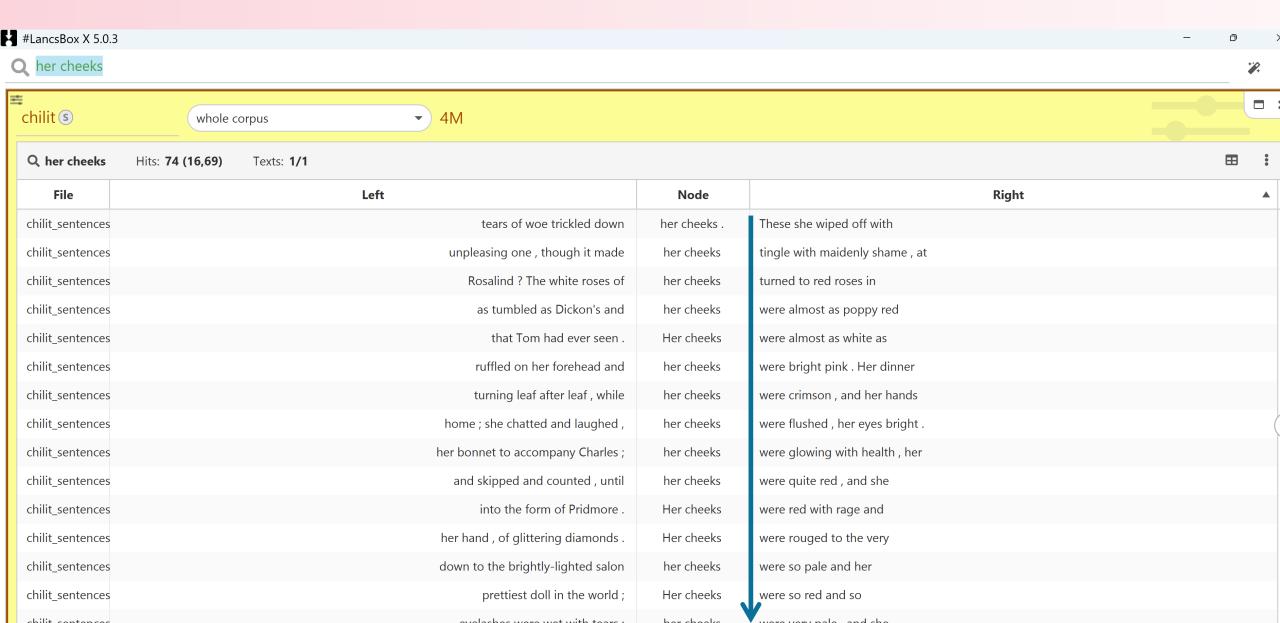
How can concordancing software help?



Select lines to "zoom in"



Sort lines (e.g. on right context)



Rank lines with KWICgrouper

- node: eyes in suspensions
- KWICgrouped on keywords his, her, fixing

64b4590 Left Node Right In bk. **Book** night." ¶ "Ah!" said Wildeve, fixing his upon her; "who told you that?" ¶ "Venmative eyes house, shaking his head and fixing his on her with tender concern.--The ejactemma rning quickly round and fixing his gray entreatingly on her face, "I should be mill white forehead, and fixing her dilated upon Robert Audley, "I cannot! Has rLadyAud her head on one side, and fixing her pathetically on her sister, "if your husb mill said Margaret, quietly fixing her tearful on Mary; "I know I'm not mistaken. I hmary sued the girl, fixing her dark, eloquent intently upon the Goth's countenance, Antoni at fool or madman! he cried, fixing his in furious scorn and indignation on the Antoni ank you, Dobbin," he said, rubbing his with his knuckles, "I was just--just tellivanity By Hercules!' said Diomed, opening his 'why, it would take a man's whole life Pomp and placed his hated hands before my which I flung from me with violence; "frank

clic-fiction.com

Sort by KWICpatterns

• • •			AntConc			
Target Corpus		KWIC Plot File View	Cluster N-Gram	Collocate Wo	rd Keyword	Wordcloud ChatAl
Name: ChiLit Files: 71	Total Hits: 22	84 Page Size 100 hits	1 to 100	of 2284 hits	0	
Tokens: 4424305	File	Left	Context	Hit		Right Context
alice.txt	1 amulet.t	ct vacant seat next	to Robert. And it was	when all eyes	were fixed o	n the stage where Mr Devant was
alone.txt amulet.txt	2 amulet.t	ence were fixed on Mr Dav	vid Devant, Mr David	Devant's eyes	were fixed o	n the audience. And it happened that
beauty.txt	3 canada.t	xt the St. Lawrence. "Captair	n Wilson," said Perciva	l, whose eyes	were fixed o	n the water, "what animals are those,
brass.txt bunny.txt	4 crofton.t	•	•			n the door, to see what sort
canada.txt	5 girls.txt	that," she said. Here sh				n her. "Poor dolly's b'oke," said the
carved.txt						•
clive.txt coral.txt	6 girls.txt	beatno one glanced a	t her, no one regarde	d her; all eyes	were fixed o	n Miss Good, who stood with a
crofton.txt	7 girls.txt	ner side reading a newspap	oer. Presently she saw	that his eyes	were fixed o	n her. He spoke in his quietest
cuckoo.txt	8 girls.txt	ry rhyme after nursery rhy	me, while the bright l	beautiful eyes	were fixed o	n her face, and the little voice
daisy.txt dominics.txt	9 holiday.t	xt in the world was ever mo	re miserable than her	self. Her eyes	were fixed o	n her task, while her thoughts were
dove.txt	10 jungle.tx	t strike. Oh, foolish people	who killed my Nagi"			n his father, and all his father
dragons.txt						
dreamdays.txt duke.txt	11 moonflee	that Maskew	knew this as well as	I, for his eyes		n the lanthorn. At last he spoke
eric.txt	12 redclyffe	.txt nded warning against the	dissipations of Venice	, for her eyes	were fixed o	n him at first with a look
fiord.txt	13 vice.txt	you were to tell me, I thin	ık?" Chawner's small g	glittering eyes	were fixed o	n Paul menacingly as he managed to
five.txt flopsy.txt	14 wallypug	.txt what they were." Oliv	e did not at once ans	wer. Her eyes	were fixed o	n something she saw passing before t
forest.txt	15 fiord.txt	form of a light cloud h	anging over the place	. Hund's eyes	were fixed u	pon it, when one of his comrades
girls.txt glass.txt	16 forest.tx	t Edward turned round to Pa	tience, and perceived	that her eyes	were fixed u	pon him, as if she would have
goldenage.txt	17 glass.txt	she opened her lips, t	here was dead silence	e, and all eyes	were fixed u	pon her; 'and it's a very curious
holiday.txt	18 quaterm	ai antible nod she indicated	annroyal All the while	e Agon's eves	were fixed u	non the altar before him apparently in

Practices in different disciplines: strategies

- 10 articles / case studies per discipline (40 total)
 - Lexicography
 - Data-driven learning
 - Corpus-assisted discourse studies
 - Literary stylistics
 - post-2000 publication; concrete examples
 - not included: studies using parallel or learner corpora
- Content analysis of methods sections (not literature review)
- Challenges: no systematic standards for describing methodology, mix of tool and method, where is the "starting point"?

Selecting

Sampling

A random sample of 100 concordances of each pair was, subsequently, closely examined for semantic prosody. (Lexicography)

Filtering

A concordance query for *carry out* with *research* in the context of three tokens to the left and to the right returned 160 hits, and most lines indeed exhibited the collocation *carry out research*, as exemplified in Figure 8, (Lexicography)

This concordance was then edited in order to filter out cases where the first word to the right (the R1 collocate) of the italicised adjective is unlikely to be directly related to the adjective of interest:... (Lexicography)

Selecting

Cleaning

As we were interested in lexical compounds linked to carbon dioxide rather than carbon as an element, such lexical combinations as, for example, carbon molecule or carbon fibre were removed. Nonsensical combinations as well as duplicates arising from differences in spelling such as carbon offset and carbon-offset were also eliminated. (CADS)

Threshold

We analysed the first 500 concordances of *seguire* chosen as "good examples" by the Sketch Engine (cf. Kilgarriff et al., 2008) (Lexicography)

Ordering

Sorting

WordSmith Tools was mainly used for sorting and categorising concordances because it allows the analyst to assign values to lines and to move easily from concordance to text. [Figure 3 shows sorting by 1R] (CADS)

The students were then instructed to search for the preceding underlined word *friendship* using IntelliText, and to examine the concordance lines to identify which preposition should follow *friendship* in this context, by sorting right or left contexts in keyword-in-context (KWIC) lines. **(DDL)**

The concordance has been slightly pre-edited by using the facility in MICROCONCORD for sorting citations; in this case separating the nouns from the verbs. (DDL)

Ordering

Ranking

We analysed the first 500 concordances of *seguire* chosen as "good examples" by the Sketch Engine (cf. Kilgarriff et al., 2008) (Lexicography)

Grouping (a CADS example)

... most CL methods require considerable human input, which often includes qualitative analysis (such as examining concordance lines)

collocations ... established manually through sorted concordances

the researcher is normally required to analyse hundreds of lines of concordance data by hand, in order to identify wider themes or patterns in the corpus which are not so easily spotted via collocation, key word or frequency analysis. The analyst then has to make sense of the linguistic patterns thrown up via the corpus-based processes, usually with reference to one or more theoretical frameworks

Close analysis of expanded concordances (or whole texts, when necessary) revealed

Hands-on: traditional concordancing

Activity

- Analyse concordances for body part nouns in 19th c. fiction
- Identify and interpret salient recurrent patterns
- Some body parts: brain, breast, brow, cheek, cheeks, ear, ears, eye, eyes, faces, fingers, forehead, foot, mouth, neck, shoulder, tongue

Corpora

- ChiLit: Children's Literature from the 19th century
 - 71 novels, 4.4M words
- 19C: reference corpus of English 19th century literature
 - 29 novels, 4.5M words
- DNov: collection of novels written by Charles Dickens
 - 15 novels, 3.8M words

Hands-on: traditional concordancing

Concordancer

- CQPweb server @ FAU: https://corpora.linguistik.uni-erlangen.de/cqpweb/
- Login: student1 ... student15 | password: ••••••



- Or use your own favourite tool (AntConc, Sketch Engine, #LancsBox X, WordSmith, Corpus Explorer, ...)
- ChiLit corpus available in plain-text format from workshop site https://go.fau.de/1c-af

Hands-on: traditional concordancing

Feedback

- Which salient patterns could you identify?
 Do they have a clear interpretation?
- Which strategies for organising concordances did you use?
 Did they prove helpful?
- Which concordancer software did you work with?
 Did you encounter technical limitations in your analysis?

References

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