Lecture 7. Corpus linguistics

© Kushneruk Svetlana Leonidovna

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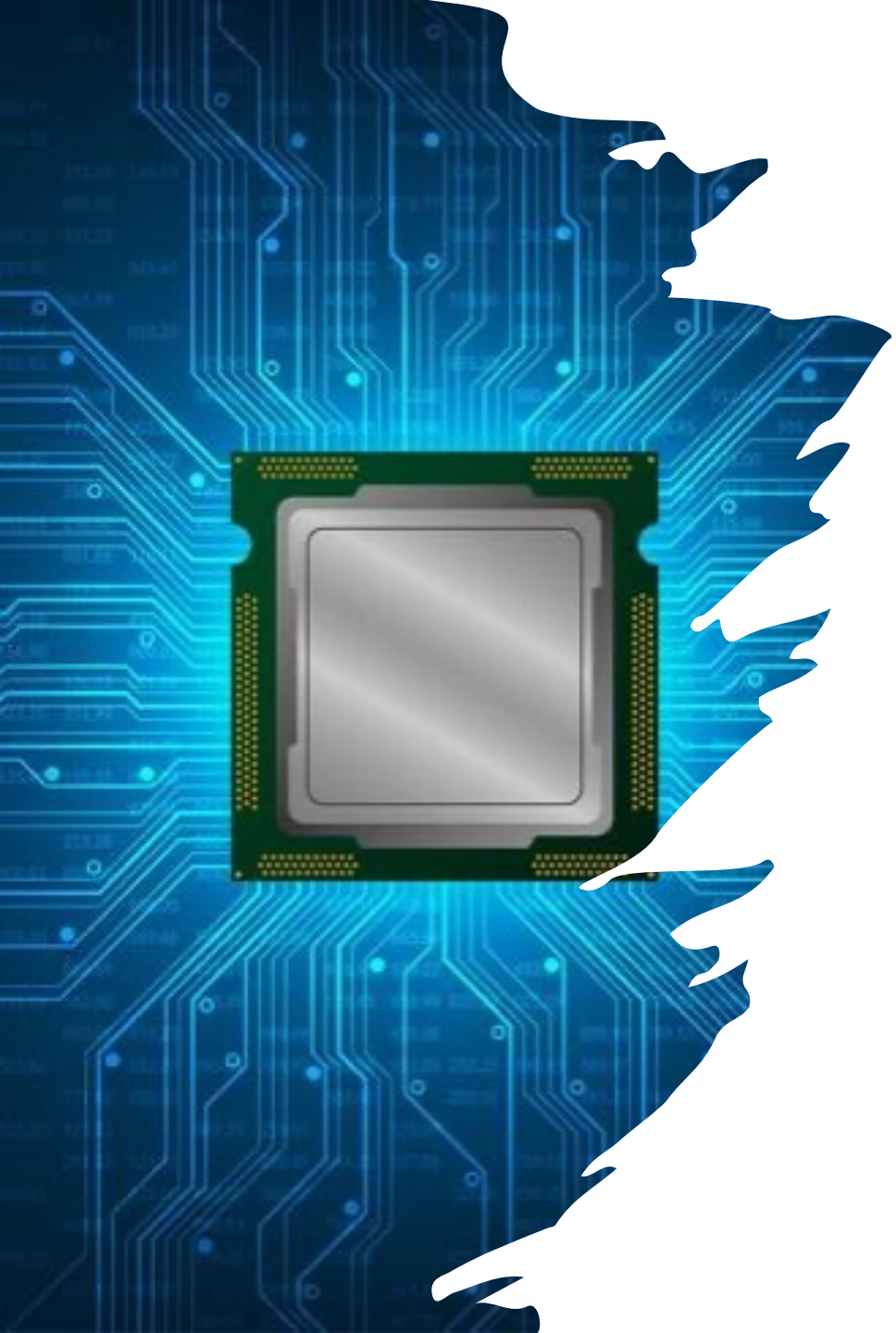


1. The notion of a corpus. Typology of corpus linguistic research

Corpus linguistics

revolutionized language studies because it has provided **new ways** of analyzing and describing the use of language

- **Corpus linguistics**
- a **powerful methodology** that can be employed to explore a wide variety of issues related to the use of vocabulary
- **Corpus linguistics**
- an area which focuses upon a **set of procedures**, or **methods**, for studying language

Corpora can be defined as large, principled and ***computer-readable collections of texts*** that allow analysis of patterns of language use across different contexts.

Corpora consist of texts stored in an electronic format, which enables researchers to use special software to **conduct automatic searches** and gain insights into the **structure** and **regularity of naturally occurring language**.

Important features of corpus-based analysis

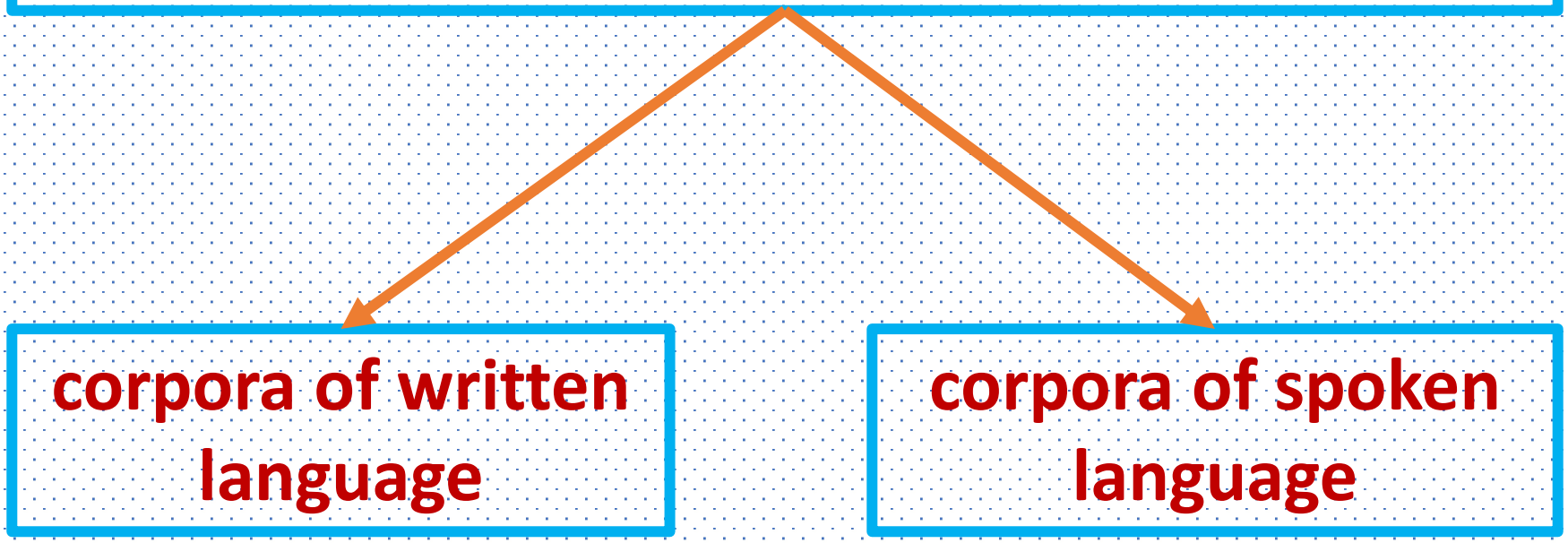
it is empirical, analyzing the actual patterns of use in natural texts

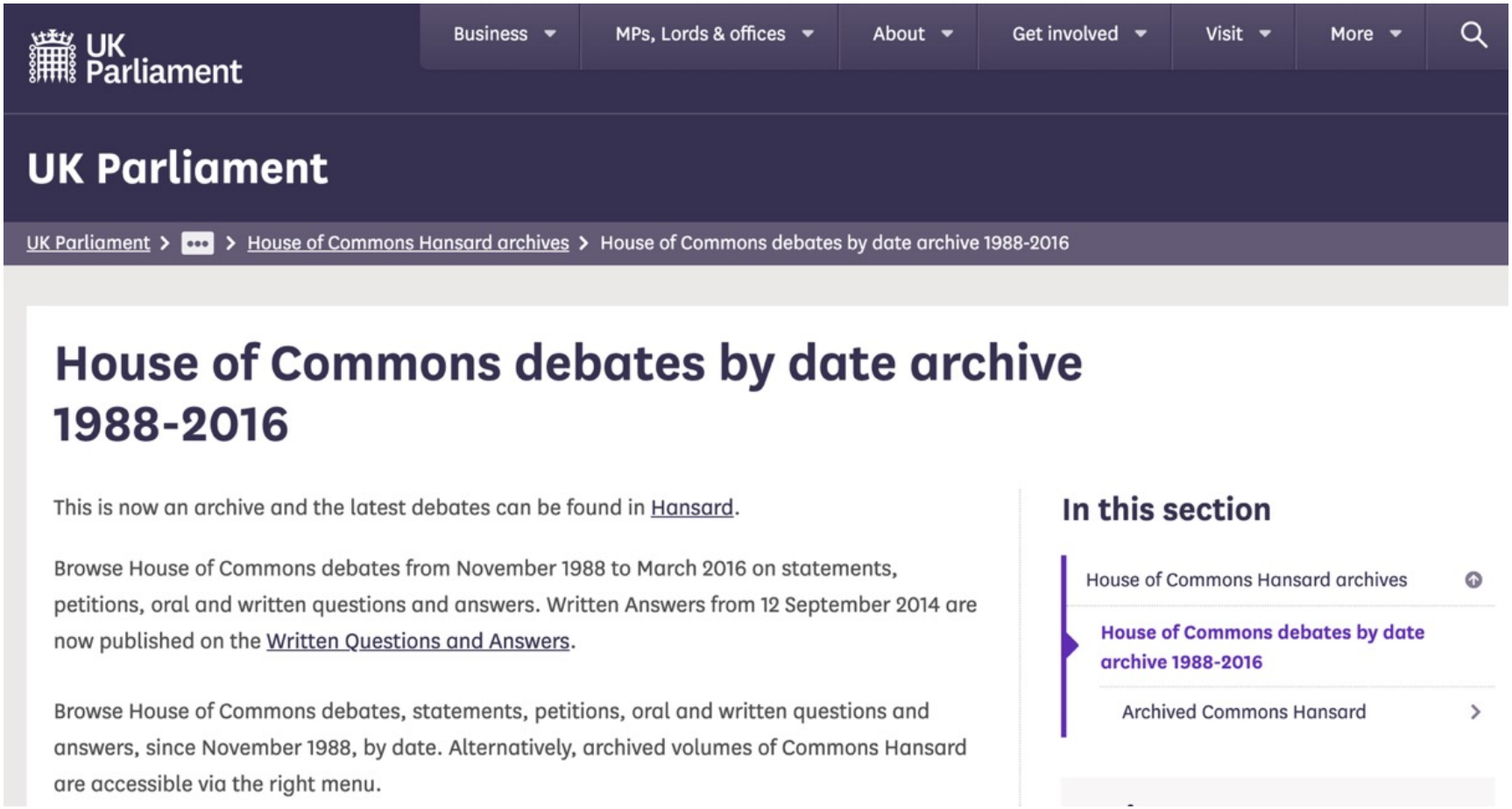
it utilizes a large collection of natural texts as the basis for analysis

it makes extensive use of computers for analysis

it depends on both quantitative and qualitative analytical techniques

Typology of corpus linguistic research.
1.1. Mode of communication





www.publications.parliament.uk/pa/cm/cmhansrd.htm

ICE-GB is the British component of the International Corpus of English (ICE)

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- Home
- About the Survey
- Staff
- Research Projects
  - The International Corpus of English (ICE)
  - ICE-GB
  - DCPSE
  - Corpus Queries
  - Next Generation Tools
  - The English Noun Phrase
  - The English Verb Phrase
  - Subordination in Spoken & Written English
  - Teaching English Grammar in Schools
- Research Resources
- Software Sales
- Mobile Apps
- Events

ICE-GB

ICE-GB is the British component of the International Corpus of English (ICE).

ICE began in 1990 with the primary aim of providing material for comparative studies of varieties of English throughout the world.

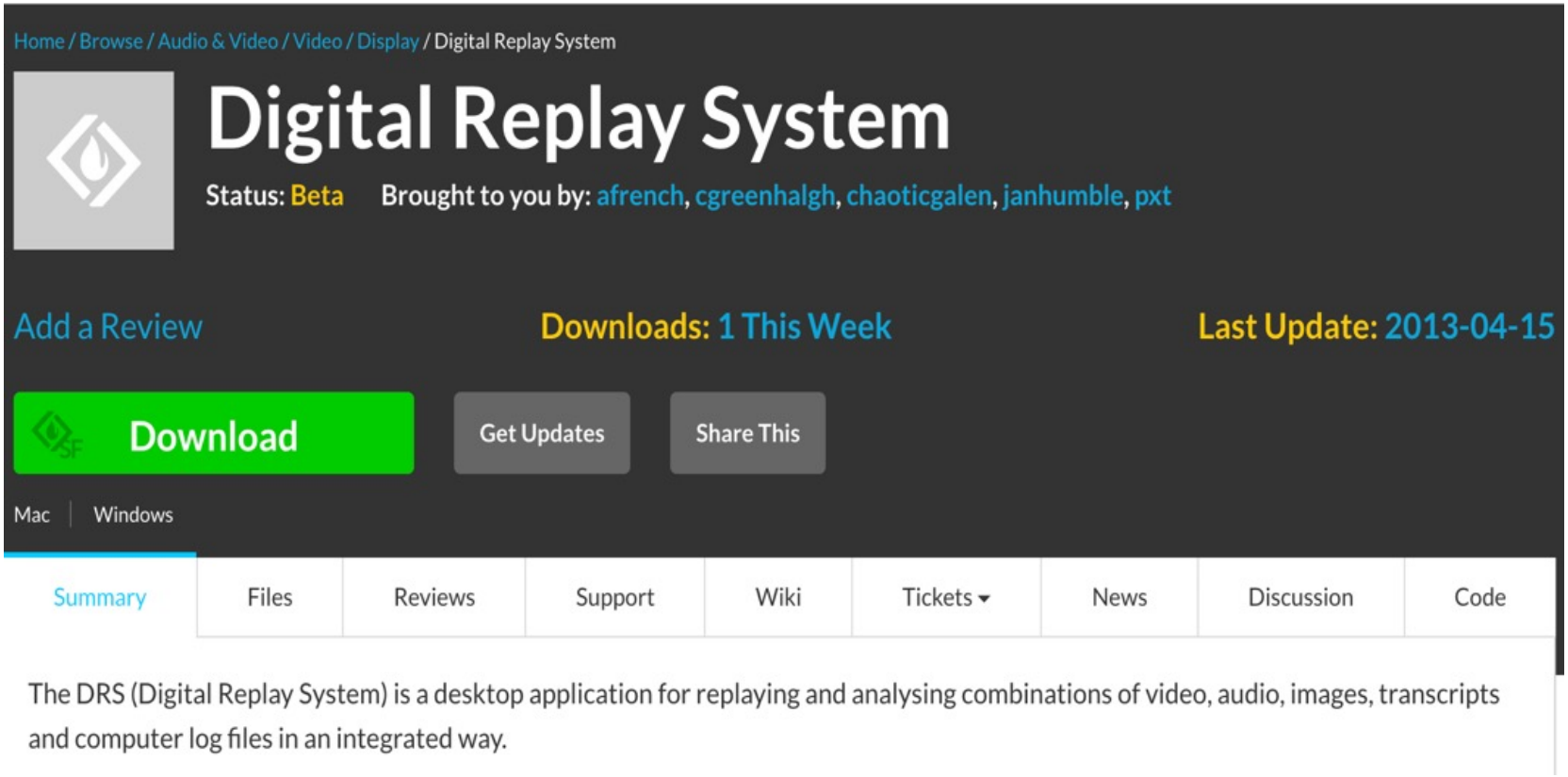
More than twenty centres around the world are preparing corpora of their own national or regional variety of English. These include

Australia
Cameroon
Canada
East Africa (Kenya, Malawi, Tanzania)
Fiji
Great Britain (parsed)
Hong Kong
India
Ireland
Jamaica
Kenya
Malta
Malaysia
New Zealand
Nigeria
Pakistan
Philippines
Sierra Leone
Singapore
South Africa
Sri Lanka
Trinidad and Tobago
USA

ICE-GB was first released in 1998 with ICECUP 3.0. Since then it has been used for research and education in universities, colleges and schools all over the world.

www.ucl.ac.uk/english-usage/projects/ice-gb/

Video corpora
http://sourceforge.net/projects/thedrs



1.2. Corpus-based versus corpus-driven linguistics

Corpus-based

- corpus linguistics is perceived as a **methodology** ⇒ corpus data are used *to verify the existing theories of language*

Corpus-driven

- tends to view corpus linguistics as a **theory** which offers a new way of looking at the creation of meaning in a narrow sense and different aspects of the use of language in a broader sense

Corpus-based studies

use corpus data in order to *explore a theory or hypothesis*, established in the current literature, in order to validate it, refute it or refine it

[McEnery & Hardie 2012: 6]

Corpus-driven linguistics

- claims that the corpus itself should be the sole source of hypotheses about language
- the corpus itself *embodies its own theory of language*

[McEnery & Hardie 2012: 6].

1.3. Data collection regime

The monitor corpus approach

- seeks to develop a **dataset** which ***grows in size over time*** and which contains a ***variety of materials***

The Bank of English (BoE)

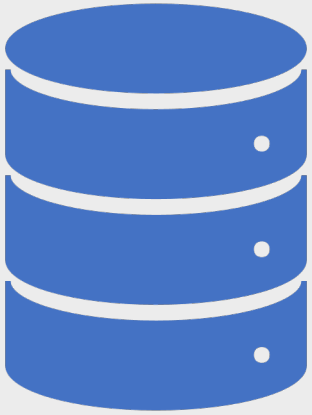
many books on corpus linguistics suggested that the BoE could be used as a ***'monitor corpus'*** to look ongoing changes in English

The Web as Corpus

- It takes as its starting point a massive collection of data that is *ever-growing*, and uses it for the study of language.
- The content of the web is not ***divided by genre*** ⇒ the material returned from a web search tends to be an ***undifferentiated mass***, which requires a ***great deal of processing*** to sort into meaningful groups of texts.

The sample corpus approach

- ✓ The ***sample corpora*** represent a particular type of language over a specific span of time
- ✓ A ***balanced corpus*** covers a wide range of text categories which are supposed to be *representative of the language variety* under consideration.
- ✓ ***Representativeness*** refers to the extent to which a sample includes the *full range of variability* in a population.



1.4. Annotated versus unannotated corpora

Corpus annotation is largely the process of providing those analyses which a linguist would carry out anyway on whatever data they worked with.

Annotation is an umbrella term that refers to procedures such as **tagging** and **parsing** which are carried out to add linguistic information to a corpus

Tony McEnery & Andrew Hardie distinguish between three types of information that can accompany a corpus

- **metadata**

details about a given text such as the name of the author

- **textual markup**

information about the **formatting of the text** such as where italics starts and ends or when a given speaker starts speaking

- **linguistic annotation**

assigning grammatical categories or **tags** to all the words within a corpus

Layers of annotation

- *part-of-speech (PoS) tagging*
- *syntactic (grammatical) parsing*
- *error annotation*
- *semantic annotation*
- *phonetic annotation*

CLAWS

Constituent Likelihood Automatic Word-tagging System

http://ucrel.lancs.ac.uk/claws/

CLAWS part-of-speech tagger for English

Free CLAWS WWW tagger | Obtaining a licence | Tagging service

Introduction

Part-of-speech (POS) tagging, also called grammatical tagging, is the commonest form of corpus annotation, and was the first form of annotation to be developed by UCREL at Lancaster. Our POS tagging software for English text, CLAWS (the Constituent Likelihood Automatic Word-tagging System), has been continuously developed since the early 1980s. The latest version of the tagger, CLAWS4, was used to POS tag c.100 million words of the British National Corpus (BNC).

Accuracy

CLAWS has consistently achieved 96-97% accuracy (the precise degree of accuracy varying according to the type of text). Judged in terms of major categories, the system has an error-rate of only 1.5%, with c.3.3% ambiguities unresolved, within the BNC. More detailed analysis of the error rates for the C5 tagset in the BNC can be found within the BNC manual.

Template tagging

In the context of the BNC Enhancement project, UCREL devised a Template Tagger to act as a post processor for CLAWS. The rule-based formalism implemented in the Template Tagger is more powerful than that built into CLAWS itself. Manual corpus analysis and knowledge of frequent CLAWS tagging errors was used to create a rule base for the tool. This facilitated an improvement in the tagging accuracy in the resulting corpus. For more details, see Fligelstone, Rayson, and Smith (1996) and Fligelstone, Pacey, and Rayson (1997). Please note that the Template Tagger processing is not currently included in the online tagger or the licenced versions of CLAWS4. Please contact us for further details of current availability.

Tagging services

UCREL offers access to our latest version of CLAWS4 by:

- selling site and single user licences for software use within academic institutions and commercial organisations
- providing an in-house tagging service at Lancaster University
- our free CLAWS WWW tagger where you can submit text to be POS tagged via the Internet
- CLAWS can also be accessed through the web-based Wmatrix interface

1.5. Total accountability versus data selection

The principle of **total accountability**

we *must not* select a favourable subset of the data

one way of satisfying falsifiability is to **use the entire corpus** to test the hypothesis

1.6. Multilingual versus monolingual corpora

Many corpora are **monolingual**

- may represent a range of varieties and genres of a particular language
- limited to that one language

https://www.ucl.ac.uk/english-usage/projects/ice.htm

UCL

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- About the Survey
- Staff
- Research Projects
  - The International Corpus of English (ICE)
  - ICE-GB
  - DCPSE
  - Corpus Queries
  - Next Generation Tools
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  - The English Verb Phrase
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- Software Sales
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The International Corpus of English

The **International Corpus of English** (ICE) project was initiated in 1988 by the late Sidney Greenbaum, the then Director of the Survey of English Usage, University College London. In a brief notice in *World Englishes*, Greenbaum pointed out that grammatical studies had been greatly facilitated by the availability of two computerized corpora of printed English, the Brown Corpus of American English, and the LOB (Lancaster/Oslo-Bergen) Corpus of British English. Greenbaum continued:

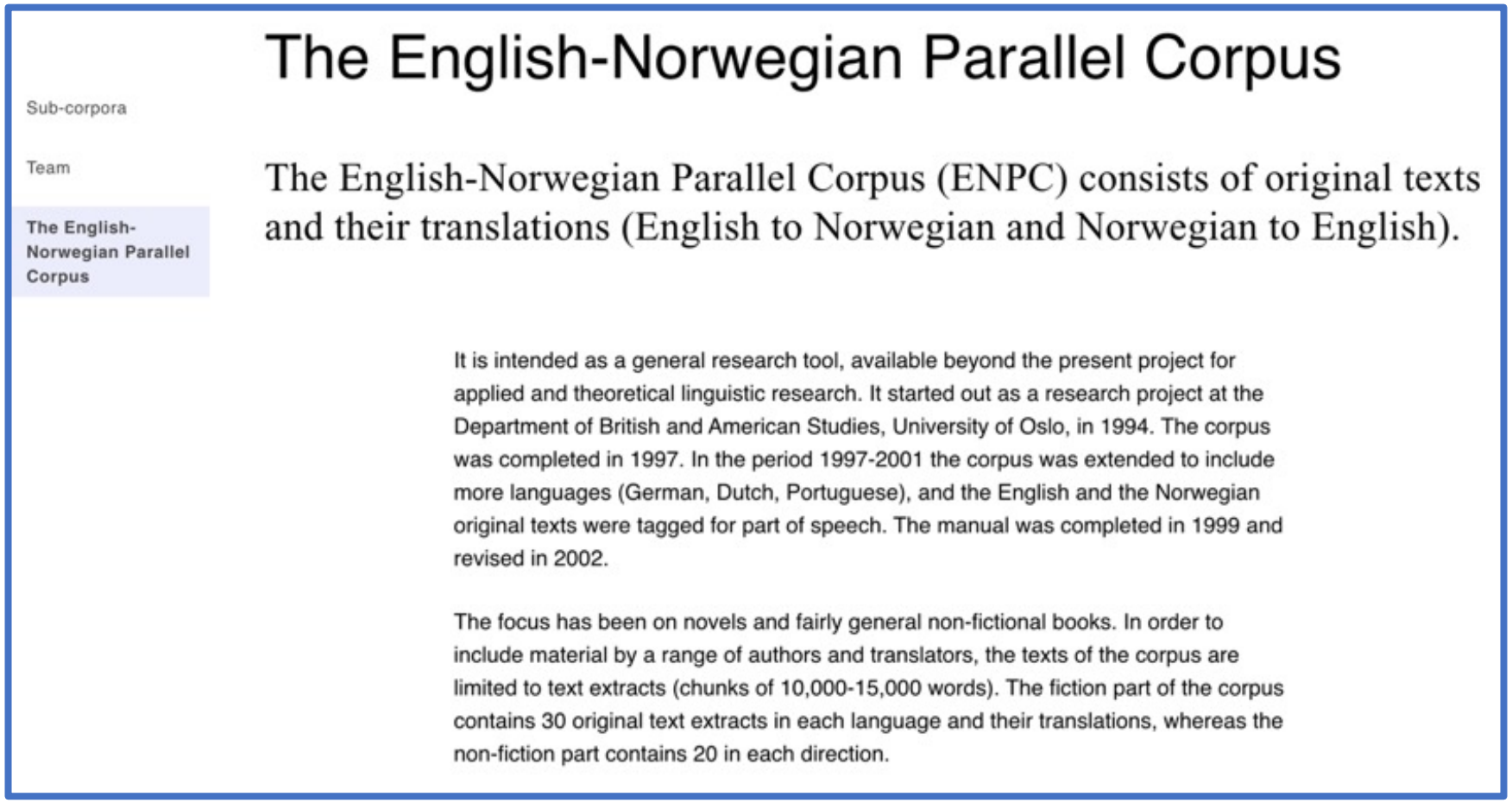
> *We should now be thinking of extending the scope for computerized comparative studies in three ways: (1) to sample standard varieties from other countries where English is the first language, for example Canada and Australia; (2) to sample national varieties from countries where English is an official additional language, for example India and Nigeria; and (3) to include spoken and manuscript English as well as printed English. (Greenbaum 1988)*

In response, linguists from around the world came forward to discuss Greenbaum's proposal, and ultimately to put it into effect (Greenbaum 1991). The project soon became known as the International Corpus of English (ICE), and was coordinated by Greenbaum until 1996. From 1996 to 2001, ICE was coordinated by Charles Meyer, University of Massachusetts-Boston. It is now coordinated by Gerald Nelson in Hong Kong. The ICE project involves research teams in each of the countries or regions shown below.

Australia
Cameroon
Canada
East Africa (Kenya, Malawi, Tanzania)
Fiji
Great Britain
Hong Kong
India
Ireland
Jamaica
Kenya
Malaysia
New Zealand
Nigeria
Pakistan
Philippines
Sierra Leone
Singapore
South Africa
Sri Lanka
Trinidad and Tobago
USA

- ICE website

- ICE-GB
- DCPSE



the English-Norwegian Parallel Corpus (ENPC)
https://www.hf.uio.no/ilos/english/services/knowledge-resources/omc/enpc/

Type A: Source texts in one language plus translations into one or more other languages

- *the Canadian Hansard*

➢ consisting of **debates from the Canadian Parliament** published in the country's official languages, *English* and *French*

- *CRATER*

➢ Corpus Resources and Terminology Extraction is a project involving three languages: *English*, *French* and *Spanish*.

➢ consists entirely of **technical texts** from the International Telecommunications Union ⇒ 5,5 million words

➢ texts are tagged with part-of-speech and morphological annotation

Type B: Pairs or groups of monolingual corpora designed using the same sampling frame

https://www.lancaster.ac.uk/fass/projects/corpus/LCMC/

The Lancaster Corpus of Mandarin Chinese

(LCMC)

by

Tony McEnery

Richard Xiao

Lancaster University

Preface

The Lancaster Corpus of Mandarin Chinese (LCMC) addresses an increasing need within the research community for a publicly available balanced corpus of Mandarin Chinese. *LCMC* has been constructed as part of a research project undertaken by the Linguistics Department, Lancaster University. The corpus is designed as a Chinese match of the *Freiburg-LOB Corpus of British English (FLOB)*, and, as such, will provide a valuable resource for contrastive studies between English and Chinese as well as a sound basis for monolingual investigations of Chinese. The LCMC corpus is distributed by the European Language Resources Association (Cat. No ELRA-W0039) and the Oxford Text Archive (Cat. No 2474).

We are obliged to the UK **Economic and Social Research Council** for funding our project (see Grant Ref. RES-000-220135). Without their help, this corpus would not have been built. We would also like to thank the presses, libraries and websites, as listed in the bibliographic document of this corpus, for providing the required texts, and Miss Xin Huang, for proofreading the scanned electronic texts.

Type C: A combination of A and B

EMILLE

Enabling Minority Language Engineering

was a 3-year project at Lancaster University and Sheffield University

Its end product was a 97 million word electronic corpus of **South Asian languages**, especially those spoken in the UK

http://www.emille.lancs.ac.uk/about.php

2. Providing data on linguistic phenomena

Lexical

Frequency and **distribution** of specific words and phrases

Lists of all common words in a language or genre

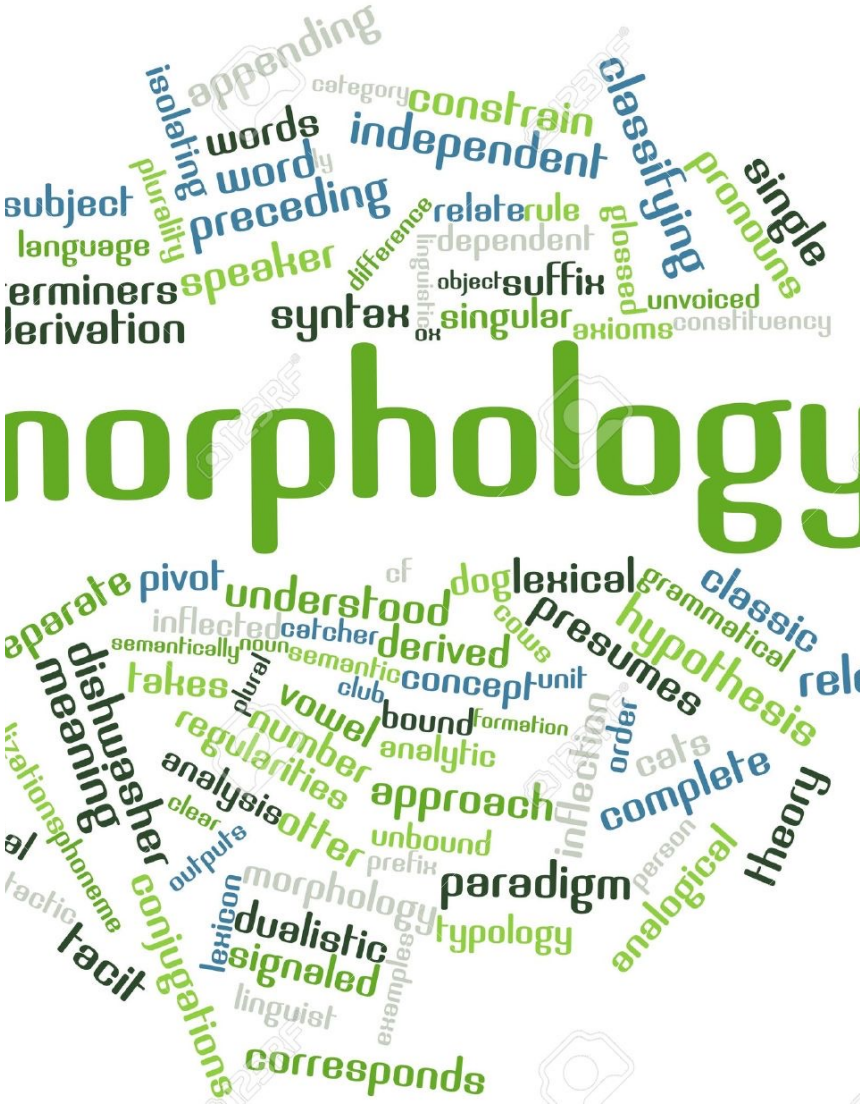
- processes involving **word formation**

nouns formed with suffixes ****ism*** or ****ousness***

- contrasts in the use of grammatical alternatives

HAVE + proven/proved

sincerest/most sincere



High-frequency grammatical features ➪ *modals, passives, perfect or progressive aspect*

➪ **Less frequent** grammatical variation

John started to walk / walking

She'd like (for) him to stay overnight

Phraseological patterns

- **Collocational preferences**

for specific words

true feelings, true story

- **Constructions**

[V NP into V-ing]

they talked him into staying

[*V POSS way PREP*]

he elbowed his way through the crowd

SEMANTICS

- **Collocates** as a guide to meaning and usage

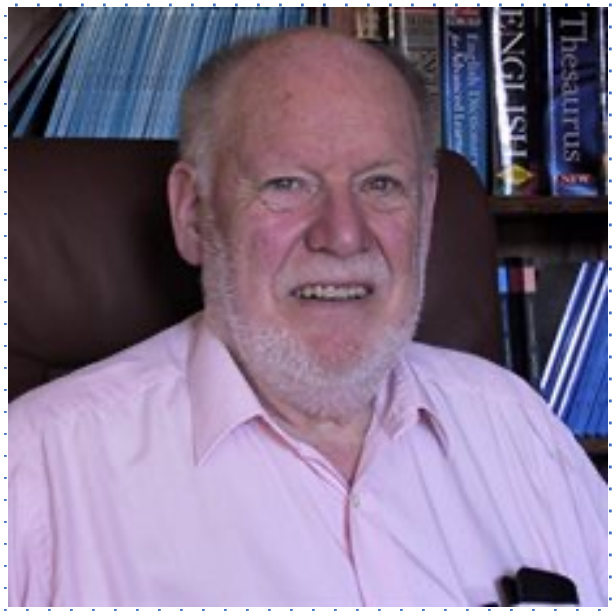
(n) *highbrow*, (adj) *highbrow*

- **Semantic prosody**

the types of words preceding the verb *outweigh*

3. Corpus design

In 2005, Sinclair proposed a set of principles that should be considered with regard to the process of **developing a corpus**

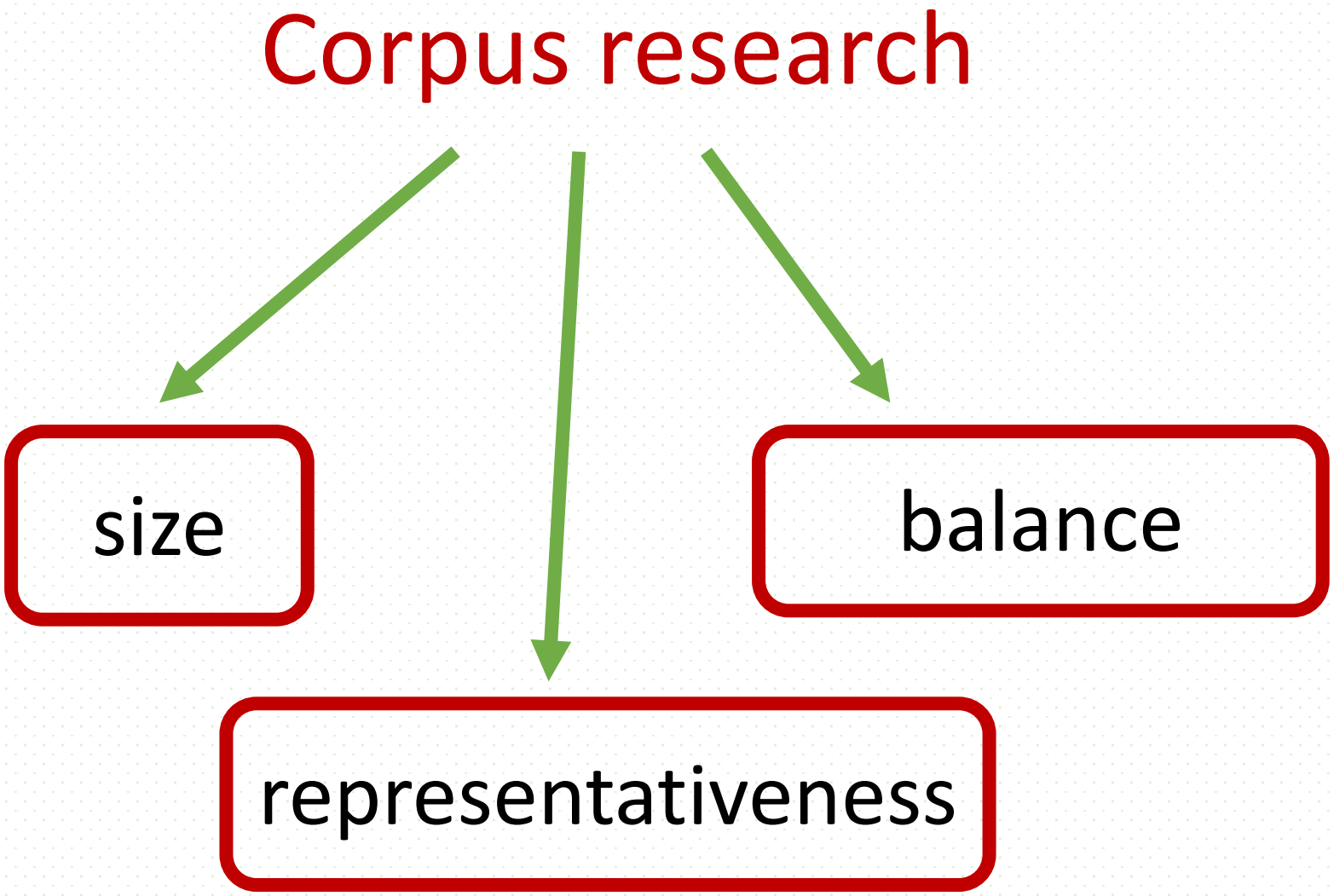


John Sinclair
(1933-2007)

- 1. The **contents of a corpus** should be selected without regard for the language they contain, but according to their ***communicative function*** in the community in which they arise.
- 2. Corpus builders should strive to make their corpus as ***representative*** as possible of the language from which it is chosen.
- 3. Only those components of corpora which have been designed to be ***independently contrastive*** should be contrasted.

- 4. **Criteria** for determining the structure of a corpus should be ***small in number***, clearly ***separate*** from each other and ***efficient as a group*** in delineating a corpus that is representative of the language variety under examination.
- 5. Any ***information about a text*** other than the alphanumeric string of its words and punctuation should be stored separately from the plain text and merged when required in applications.
- 6. Samples of language for a corpus should consist of ***entire documents*** or transcriptions of complete speech events.

- 7. The **design and composition** of a corpus should be documented fully with information about the contents and arguments in justification of the decisions taken.
- 8. The corpus builder should retain, as target notions, **representativeness** and **balance**. While these are not precisely definable and attainable goals, they must be used to guide the design of a corpus and the selection of its components.
- 9. Any control of subject matter in a corpus should be imposed by the use of ***external***, and not internal, ***criteria***.
- 10. A corpus should aim for ***homogeneity*** in its components while maintaining adequate coverage, and rogue texts should be avoided.


Corpus research
size
balance
representativeness

- **Representativeness** concerns the issue of **how well a corpus represents a given language** or variety that is under study.
- **Balance** refers to the **structure and type of data** used to build a corpus.
- A *well-balanced corpus* should consist of several subsections that represent different types of language use.

The COCA corpus (new version released March 2020)

The corpora from English-Corpora.org are the world's **most widely-used corpora**. The Corpus of Contemporary American English (COCA) is by far the most widely-used of these corpora. In early 2020, we dramatically expanded the scope and size and features of COCA to make it even more useful for researchers, teachers, and learners.

The corpus contains more than **one billion words** of data, including 20 million words each year from **1990-2019** (with the same genre balance year by year). This makes COCA the only corpus of English that is 1) large 2) recent and 3) has a wide range of genres. The following table shows the genres in the corpus.

Genre	# texts	# words	Explanation
Spoken	44,803	127,396,932	Transcripts of unscripted conversation from more than 150 different TV and radio programs (examples: All Things Considered (NPR), Newshour (PBS), Good Morning America (ABC), Oprah)
Fiction	25,992	119,505,305	Short stories and plays from literary magazines, children's magazines, popular magazines, first chapters of first edition books 1990-present, and fan fiction.
Magazines	86,292	127,352,030	Nearly 100 different magazines, with a good mix between specific domains like news, health, home and gardening, women, financial, religion, sports, etc.
Newspapers	90,243	122,958,016	Newspapers from across the US, including: USA Today, New York Times, Atlanta Journal Constitution, San Francisco Chronicle, etc. Good mix between different sections of the newspaper, such as local news, opinion, sports, financial, etc.
Academic	26,137	120,988,361	More than 200 different peer-reviewed journals. These cover the full range of academic disciplines, with a good balance among education, social sciences, history, humanities, law, medicine, philosophy/religion, science/technology, and business
Web (Genl)	88,989	129,899,427	Classified into the web genres of academic, argument, fiction, info, instruction, legal, news, personal, promotion, review web pages (by Serge Sharoff). Taken from the US portion of the GloWbE corpus.
Web (Blog)	98,748	125,496,216	Texts that were classified by Google as being blogs. Further classified into the web genres of academic, argument, fiction, info, instruction, legal, news, personal, promotion, review web pages. Taken from the US portion of the GloWbE corpus.
TV/Movies	23,975	129,293,467	Subtitles from OpenSubtitles.org, and later the TV and Movies corpora. Studies have shown that the language from these shows and movies is even more colloquial / core than the data in actual

4. Benefits of corpus analysis

- 1. One can use corpus data to explore ***different aspects of language***.
- 2. Corpus linguistics is an empirical approach which relies on ***frequency-based analyses***.
- 3. Corpus linguistics focuses on the ***phraseological nature of language***.
- 4. Corpus investigations highlight different ***functions*** of language and demonstrate the ***central role of context*** in the analysis of linguistic behavior.
- 5. Corpus linguistics presents us with powerful tools for exploring the ***distribution of specific linguistic features*** across a wide range of domains of language use.

5. Limitations of corpus analysis

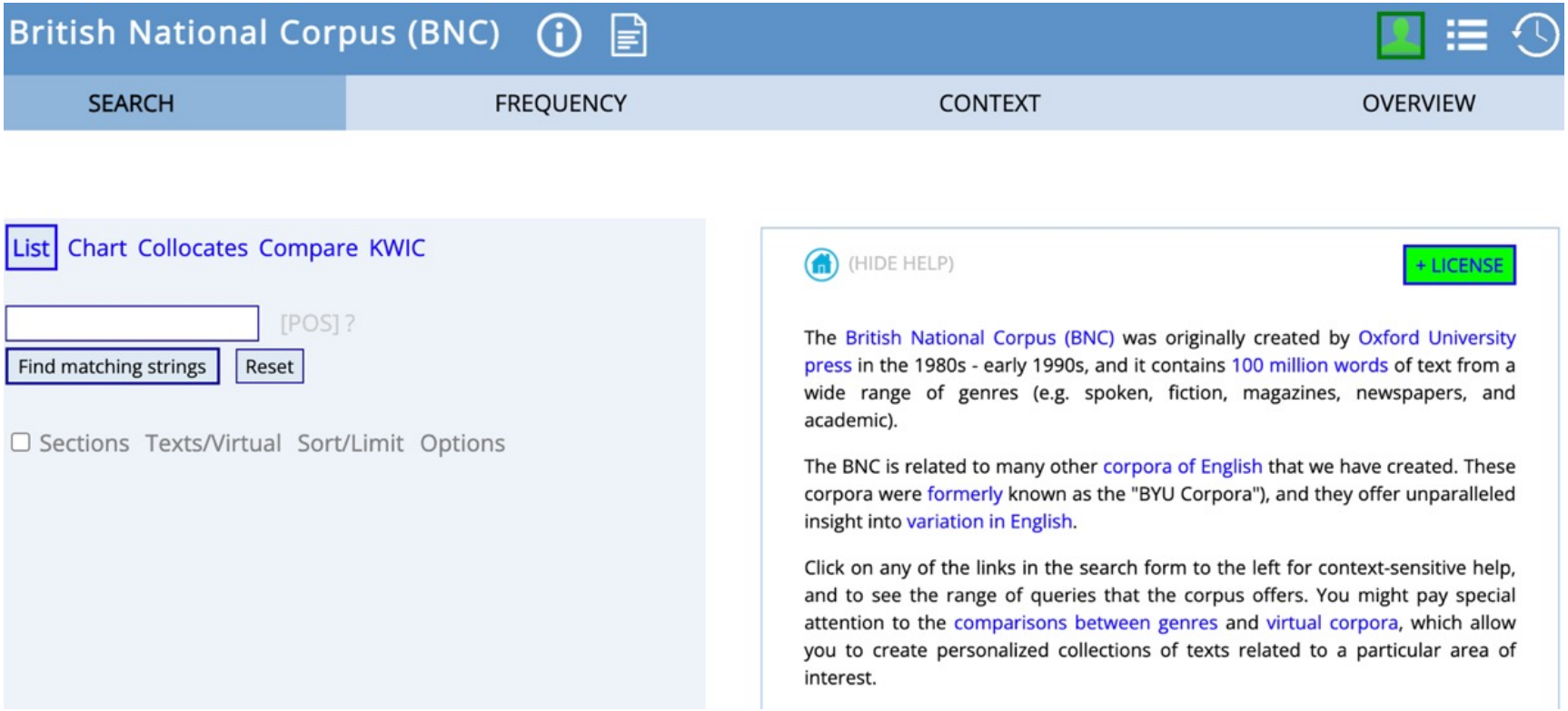
1. A corpus can show us only *what it contains*.
2. A corpus may be *too small*.
3. A corpus presents language *out of its context*.
4. A corpus *cannot interpret data*.

6. Types of corpora

6.1. General and specialized corpora

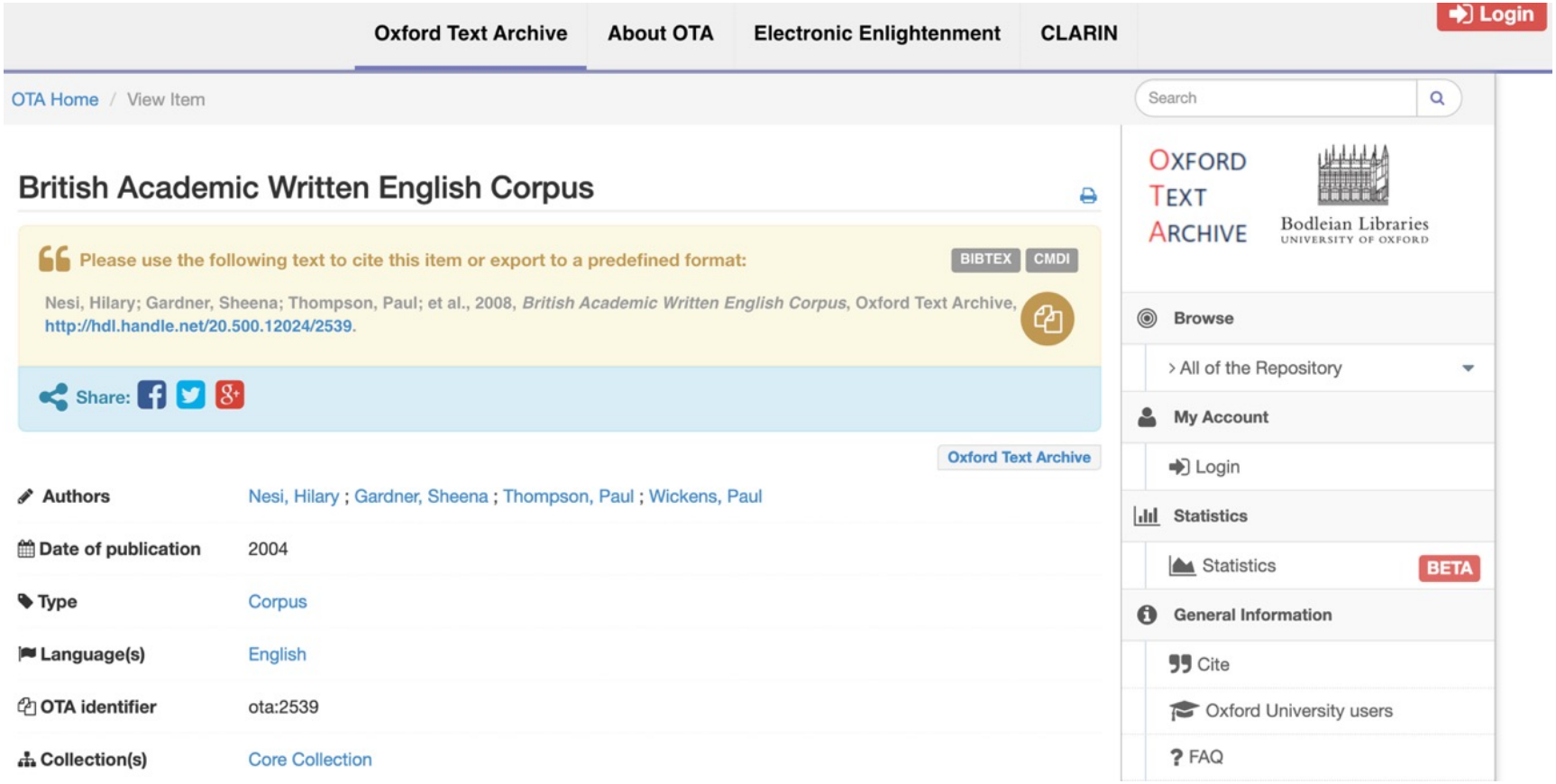
General corpora consist of a wide range of texts that represent natural language as it is used *across a variety of contexts*.

Specialized corpora do not aim to comprehensively represent a language as a whole, but only *specialized segments* of it.



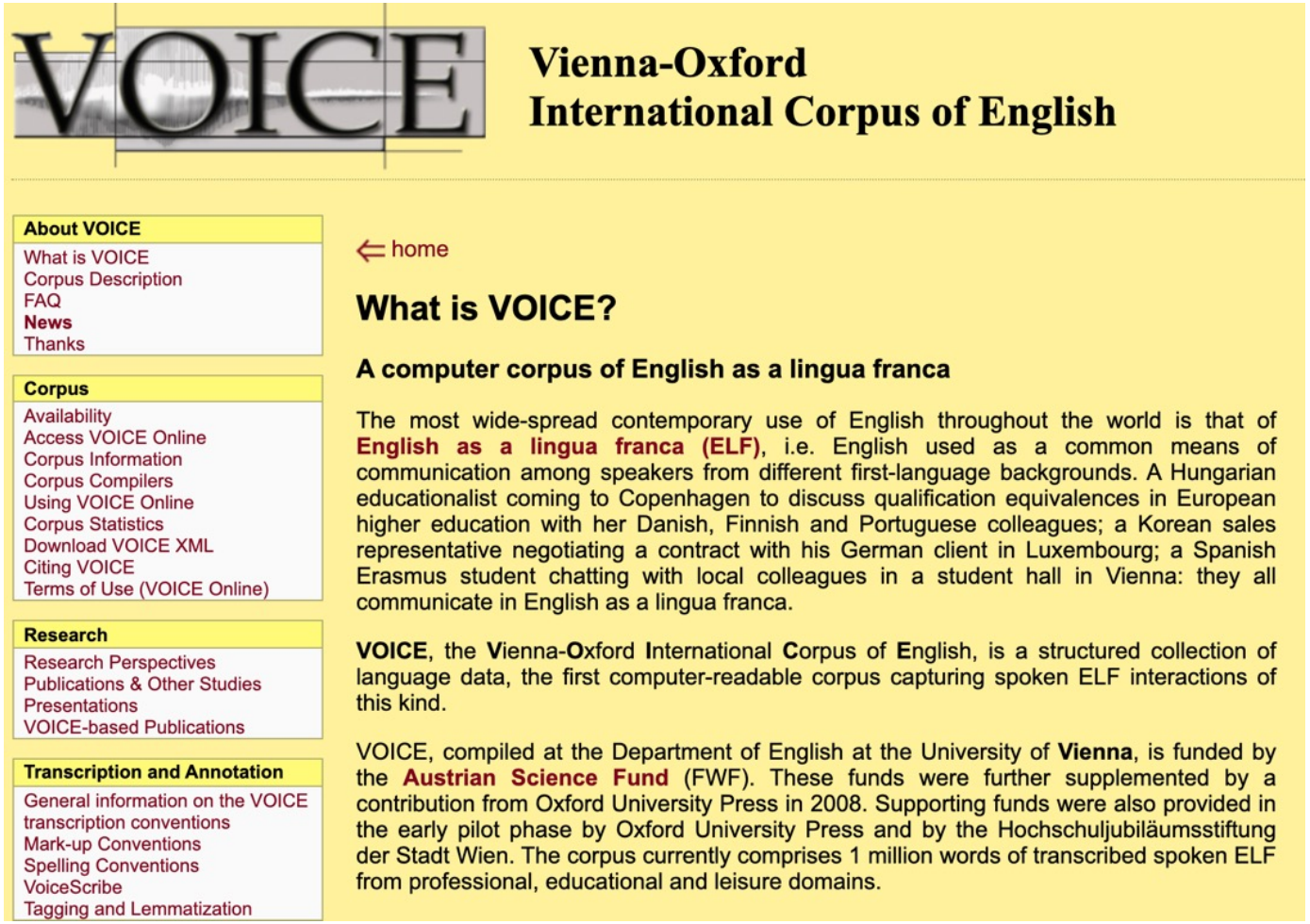
BNC https://www.english-corpora.org/bnc/

Michigan Corpus of Academic Spoken English (MICASE) https://quod.lib.umich.edu/m/micase/



British Academic Written English (BAWE) *Corpus* of proficient student writing

https://ota.bodleian.ox.ac.uk/repository/xmlui/handle/20.500.12024/2539#



Vienna-Oxford International Corpus of English, VOICE (https:// www.univie.ac.at/voice/)

English as a Lingua Franca in Academic Settings Corpus, ELFA. https://www.kielipankki.fi/corpora/elfa/

6.2. Written and spoken corpora

The majority of corpora represent written language

CANCODE (*Cambridge and Nottingham Corpus of Discourse in English)* Corpus

large collection of spoken British English and it has been used as a basis for a number of studies into the specific nature of spoken language

Santa Barbara Corpus of Spoken American English

https://www.linguistics.ucsb.edu/research/santa-barbara-corpus

Hong Kong Corpus of Spoken English

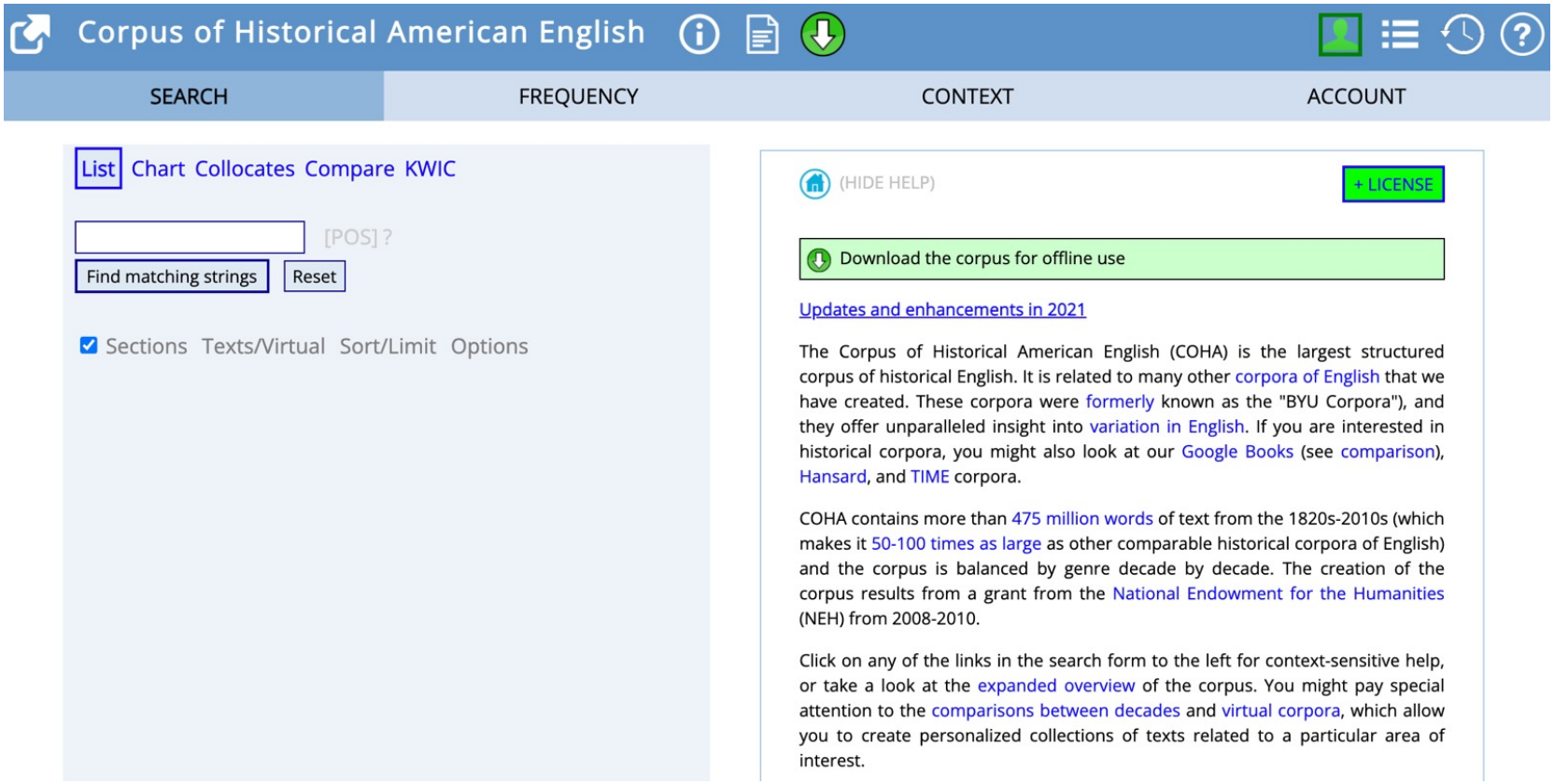
http://rcpce.engl.polyu.edu.hk/HKCSE/default.htm

6.3. Historical (diachronic) corpora

- Represent data from ***specific historical periods*** and they are particularly useful if scholars are interested in the process of ***language change***

Corpus of Historical American English, COHA

https://www.english-corpora.org/coha/



ARCHER, A *Representative Corpus of Historical English Registers*

https://www.projects.alc.manchester.ac.uk/archer/

6.4. Parallel and comparable corpora

- Often employed by researchers working in the area of ***translation studies***, who use them to make direct comparisons between the same texts written in different languages

Oslo Multilingual Corpus

http://www.hf.uio.no/ilos/english/services/omc/

German, French and Finnish source texts, and their respective translations

Digital Corpus of the European Parliament

https://ec.europa.eu/jrc/en/language-technologies/dcep

6.5. Web as a corpus

Internet is **constantly growing** and the number of websites is increasing.

A corpus can be regularly **updated**, which makes it very similar to monitor corpora.

WebCorp Linguist's Search Engine

http://wse1.webcorp.org.uk/

is an example of an interface that can be used to explore data found on the web

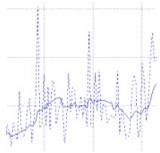
The WebCorp Linguist's Search Engine is a tool for the study of language on the web. The corpora below were built by crawling the web and extracting textual content from web pages. Searches can be performed to find words or phrases, including pattern matching, wildcards and part-of-speech. Results are given as concordance lines in KWIC format. Post-search analyses are possible including time series, collocation tables, sorting and summaries of meta-data from the matched web pages.

Synchronic English Web Corpus

470 million word corpus built from web-extracted texts. Including a randomly selected 'mini-web' and high-level subject classifaction.

Search ▶

About

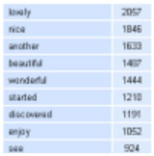


Diachronic English Web Corpus

130 million word corpus randomly selected from a larger collection and balanced to contain the same number of words per month.

Search ▶

About



lovely	2057
nice	1846
another	1633
beautiful	1407
wonderful	1444
started	1210
discovered	1191
enjoy	1052
see	924

Birmingham Blog Corpus

630 million word corpus built from blogging websites. Including a 180 million word sub-section separated into posts and comments.

Search ▶

About

Anglo-Norman Correspondence Corpus

A corpus of approximately 150 personal letters written by users of Anglo-Norman. Including bespoke part-of-speech annotation.

Search ▶

About

Novels of Charles Dickens

A searchable collection of the novels of Charles Dickens. Results can be visualised across chapters and novels.

Search ▶

About

Mark Davies's Google Books interface

https://support.google.com/websearch/answer/9523832

https://books.google.com/ngrams/info

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1. Go to Google Books.
2. Search for any book.
3. Click the book title.
4. If you are viewing pages of a book, click Close ×.
5. At the top, click Settings ⚙.
6. Click **Go back to classic Google Books**.

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- Add, organize, or share books
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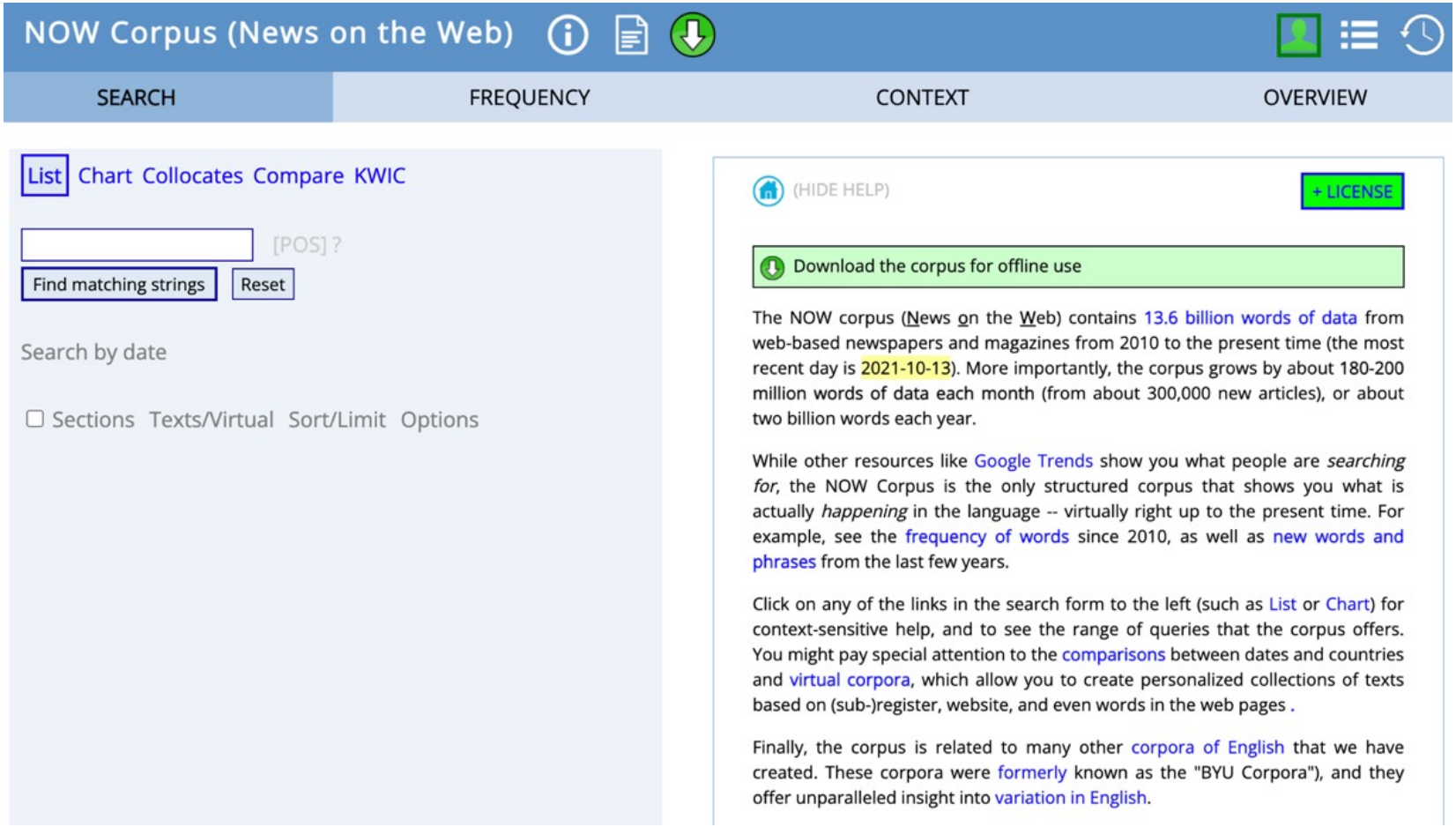
- Claim or exclude your books in the Library Project

The example of a database composed of web-based data is the NOW Corpus

https://www.english-corpora.org/now/



7. Corpus tools and types of analysis

- Corpora are computer-readable collections of texts which enable linguistic analysis by means of special computer programs called **concordancers**
- The most popular concordancers are **WordSmith tools**, **Sketch Engine**, **MonoConc** and **AntConc**

https://www.lexically.net/wordsmith/

Windows software for finding word patterns

Published by Lexical Analysis Software and Oxford University Press since 1996

Concord

... for finding all instances of a word or phrase. **Video**

KeyWords

... helps find salient words in a text or set of texts. **Video**

WordList

... lists the words in your text(s) in alphabetical and frequency order. **Video**

and a number of further Utility tools

SKETCH ENGINE

Home | News & Events | Pricing | Guide | About us | Contact

What is Sketch Engine?

Sketch Engine is the ultimate tool to explore how language works. Its algorithms analyze authentic texts of billions of words (text corpora) to identify instantly what is typical in language and what is rare, unusual or emerging usage. It is also designed for text analysis or text mining applications.

Sketch Engine is used by linguists, lexicographers, translators, students and teachers. It is a first choice solution for publishers, universities, translation agencies and national language institutes throughout the world.

Sketch Engine contains 500 ready-to-use corpora in 90+ languages, each having a size of up to 60 billion words to provide a truly representative sample of language.

LINGUISTS AND LEXICOGRAPHERS

Sketch Engine processes texts of billions of words and, within seconds, finds instances of the word, phrase or phenomenon and presents the results in the form of Word Sketches, concordances or word lists.

This site is primarily for users of MonoConc. (See ParaConc and Collocate) It is possible to order MonoConc Pro for immediate download from here, but for normal orders, visit athel.com or send email to info@athel.com.

monoconc.com

MonoconcEsy

A new version of the concordancer for use in computer labs and general language courses. It is similar to MonoConc Pro, however, it does not have the wordlist comparison feature (keywords) or the Advanced Sort menu. In addition, there are fewer options in Advanced Collocation.
Price Free for individuals for non-commercial research. Site licence. $290 15-users for 2 years.
Features of MonoconcEsy: Text Search and Part-of-Speech Tag Search and grep Search. Primary and secondary sorting of concordance lines. Frequency Wordlist. Collocate Frequency.
Download from michaelbarlow.com/mcesy.zip

MonoconcEsy -- Chinese

The menus etc. are in Chinese. There are two versions, one for Simplified characters and one for Traditional

MonoConc Pro

Current version 2.2, released 2004
New features: Open/Save Workspace; Tag Search; Meta-Tags; Suppress/Display Word/Tag/Part-of-Speech Tag.
Price $85 Site licence. $550 15-users for 2 years.
MonoConc Pro pdf flyer

To get the software immediately for individual use ($29), click on the BUY NOW button. The transaction and link to the software is processed through e-junkie.com. You will be directed to Paypal where you can pay by credit card. You will then be given the link to download the zip file. You will also be sent the link via email.

Comments:

Corpus of Spoken Professional American-English

A 2-million word collection consisting of transcripts of American spoken in professional settings such as committee meetings, faculty meetings and White House press conferences. Tagged with part-of-speech tags. (CLAWS7 tagset)
Price $79. For a basic search of the untagged version of the sibcorpora, you can use the following:

Basic search:

Select subcorpus of CSPAE
Press Conference

Search term:

Laurence Anthony's Website

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AntConc Homepage

Latest Release

AntConc

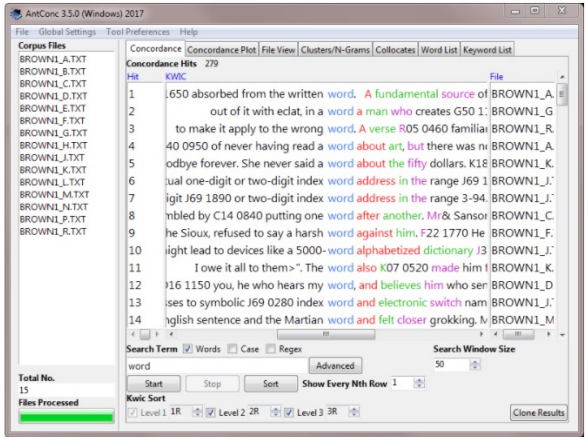
A freeware corpus analysis toolkit for concordancing and text analysis.

[AntConc Homepage] [Screenshots] [Help] [License]

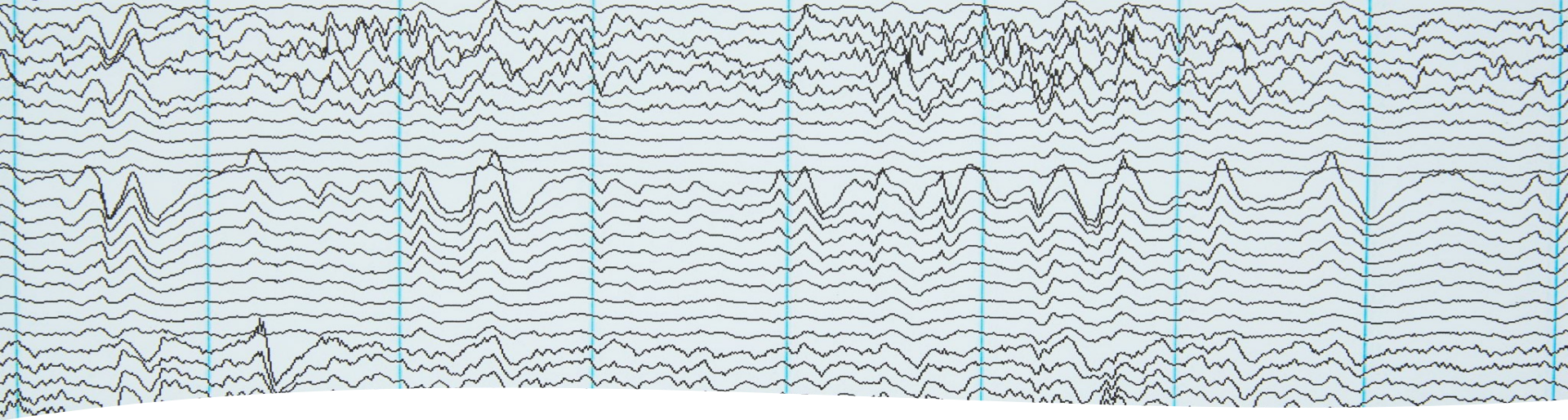
Downloads:

Official releases

- Windows (3.5.8)
- Windows 64-bit (3.5.9)
- Macintosh OS X (3.5.9)
- Linux 64-bit (3.5.9)



- https://www.laurenceanthony.net/software/antconc/



7.1. Frequency analysis and concordancing

The most basic type of corpus analysis is checking the ***frequency of occurrence*** of a given word or a phrase

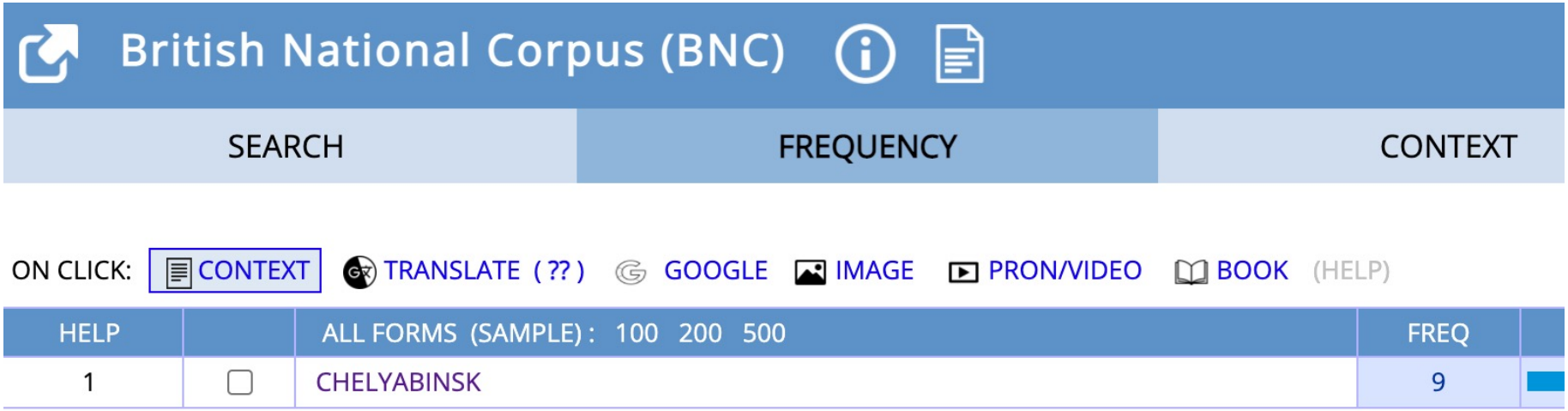
a search by means of a web-based interface

https://www.english-corpora.org/

Corpus (online access)	Download	# words	Dialect	Time period	Genre(s)
iWeb: The Intelligent Web-based Corpus		14 billion	6 countries	2017	Web
News on the Web (NOW)		13.6 billion+	20 countries	2010-yesterday	Web: News
Global Web-Based English (GloWbE)		1.9 billion	20 countries	2012-13	Web (incl blogs)
Wikipedia Corpus		1.9 billion	(Various)	2014	Wikipedia
Coronavirus Corpus		1.22 billion+	20 countries	Jan 2020-yesterday	Web: News
Corpus of Contemporary American English (COCA)		1.0 billion	American	1990-2019	Balanced
Corpus of Historical American English (COHA)		475 million	American	1820-2019	Balanced
The TV Corpus		325 million	6 countries	1950-2018	TV shows
The Movie Corpus		200 million	6 countries	1930-2018	Movies
Corpus of American Soap Operas		100 million	American	2001-2012	TV shows
Hansard Corpus		1.6 billion	British	1803-2005	Parliament
Early English Books Online		755 million	British	1470s-1690s	(Various)
Corpus of US Supreme Court Opinions		130 million	American	1790s-present	Legal opinions
TIME Magazine Corpus		100 million	American	1923-2006	Magazine
British National Corpus (BNC) *		100 million	British	1980s-1993	Balanced
Strathy Corpus (Canada)		50 million	Canadian	1970s-2000s	Balanced
CORE Corpus		50 million	6 countries	2014	Web

- use a **search box** located on the left-hand side of the interface
- type in a word or a phrase that you want to explore (a **node**)
- ‘**Chelyabinsk**’
- word as a **lemma** = [chelyabinsk]

Information about the number of the occurrences of ‘Chelyabinsk’ in the whole corpus

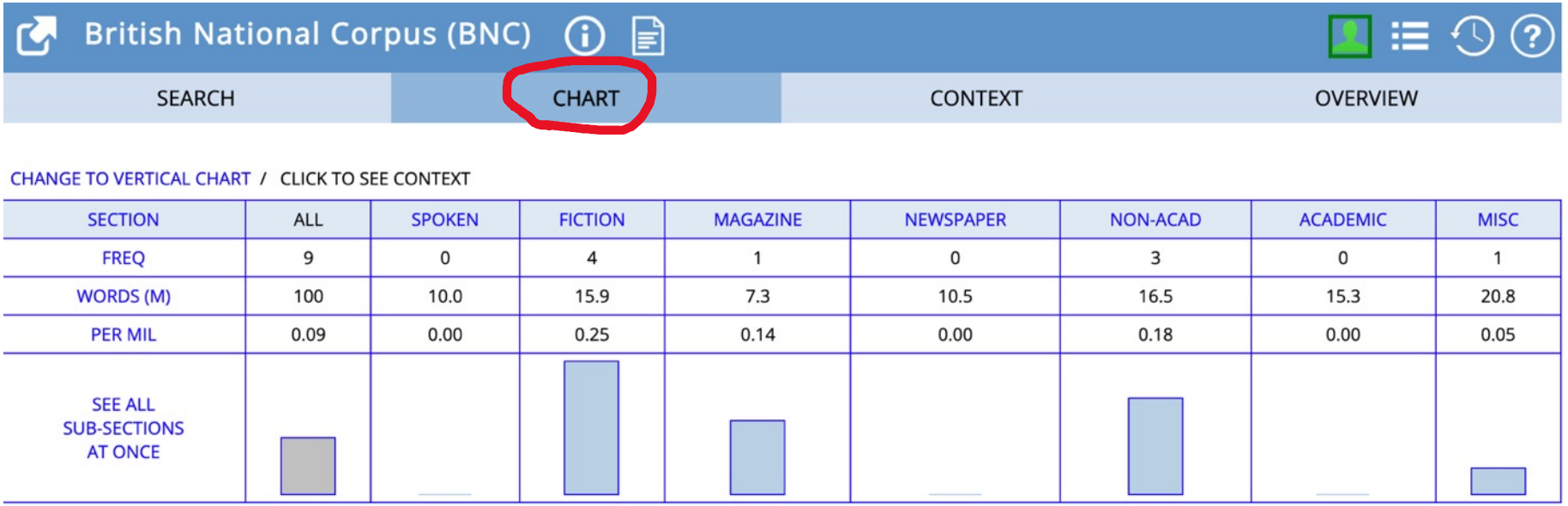


Lines of texts which demonstrate how the word is used in context: concordances

CLICK FOR MORE CONTEXT | EXPLORE NEW FEATURES | SAVE | TRANSLATE | ANALYZE

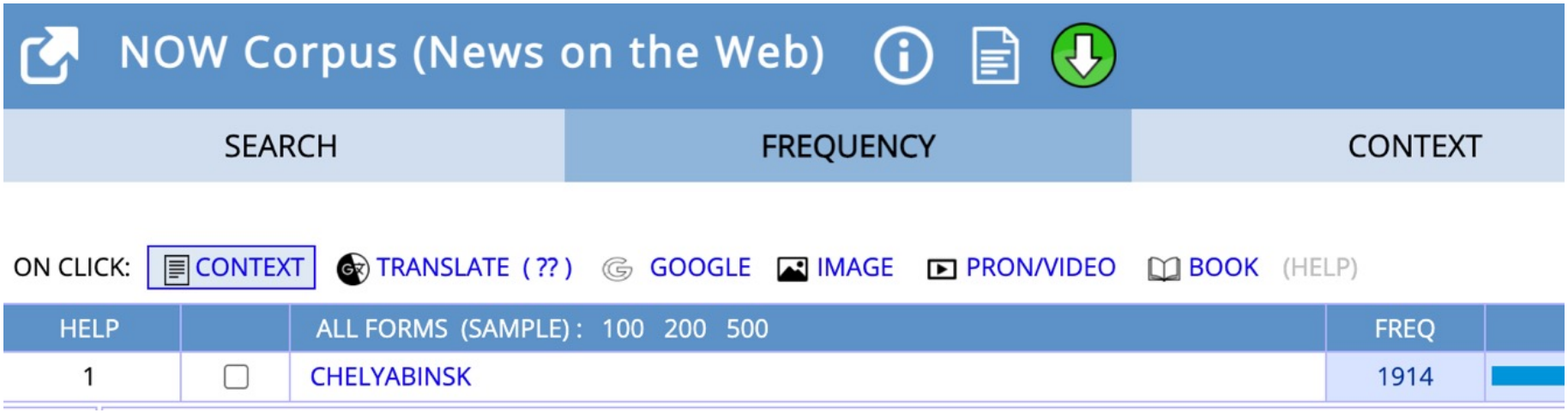
1	CLD	W_fict_prose				There are the Institutes and Design Laboratories of the Ministry of Medium Machine-Building in the Chelyabinsk region of the Ural mountains. In France, there are the
2	CLD	W_fict_prose				.' The envelope was marked Personal and Confidential. As at Los Alamos and Chelyabinsk and Ripault and Lanzhou, the Atomic Weapons Establishment at Aldermasto
3	CLD	W_fict_prose				work done here would be known to the scientists and engineers at Los Alamos and Chelyabinsk and Ripault and Lanzhou. But Los Alamos and Chelyabinsk and Ripaul
4	CLD	W_fict_prose				engineers at Los Alamos and Chelyabinsk and Ripault and Lanzhou. But Los Alamos and Chelyabinsk and Ripault and Lanzhou and Aldermaston form the club with th
5	CR8	W_pop_lore				In Russia itself, the nuclear industry that once supported whole cities, such as Chelyabinsk east of the Urals, and Tomsk and Krasnoyarsk in Siberia, is facing a
6	HKT	W_non_ac_polit_law_edu				p. 36401 for such discoveries in January 1989were discovered during 1989 near the towns of Chelyabinsk (80,000 corpses) and Donetsk and in Karelia and Byelorussia
7	HKT	W_non_ac_polit_law_edu				of an accident in September 1957 at the top-secret Kyshtym nuclear weapons research facility near Chelyabinsk in the Ural mountains. On July 17 an account of the ac
8	CP4	W_non_ac_tech_engin				service; the company also aims to set up new nodes in the cities of Chelyabinsk, Salavat and Sterlitomak in the near future. # AUTODESK RUSSIA STARTS AUTOCAD DI
9	J3D	W_misc				people are estimated to have been exposed to radioactive emissions from the Mayak plant near Chelyabinsk (which still produces plutonium and reprocesses waste) i

All frequency values for the word ‘Chelyabinsk’ across the different portions of the corpus (Chart option)



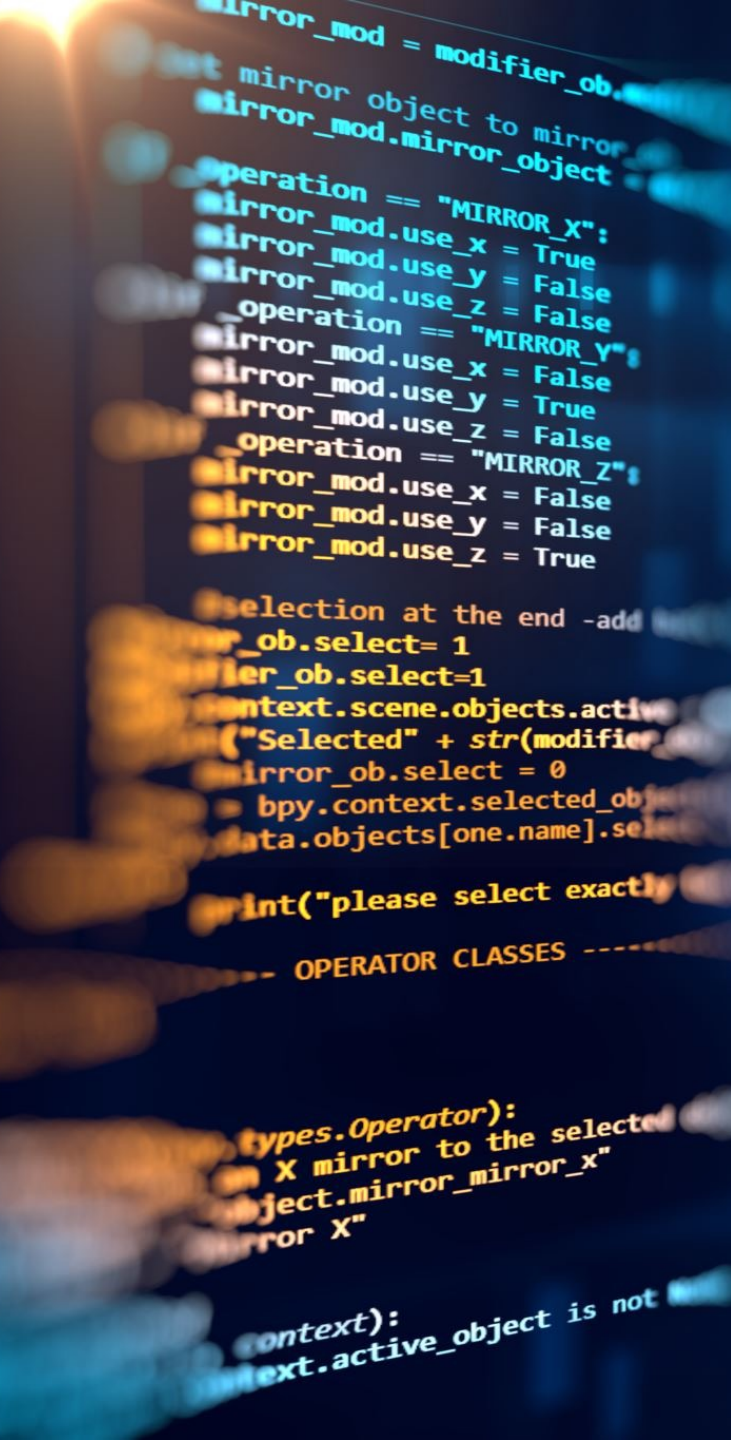
Choose a different subcorpus

News on the Web



Examples of concordances for the word ‘Chelyabinsk’

CLICK FOR MORE CONTEXT						EXPLORE NEW FEATURES	SAVE	TRANSLATE	ANALYZE
1	21-10-23 GB	Space.com				major city, but the blast occurred over a broad area outside the city of Chelyabinsk, resulting in damage and injuries but no fatalities). # To
2	21-10-23 GB	Space.com				# " An impactor the size of the 20-meter-wide space rock that broke up over Chelyabinsk, Russia... could be intercepted a mere 100 seconds
3	21-10-23 GB	Space.com				large asteroid, like the 62-foot wide (19 m) meteor that exploded over Chelyabinsk, Russia in February 2013 with roughly the strength of 30
4	21-10-23 GB	Space.com				objects can still pack a huge punch. # Part of the reason that the Chelyabinsk meteor was so destructive is that astronomers didn't see it co
5	21-10-23 GB	Space.com				's success also hinges on scientists' ability to detect small near-Earth asteroids like the Chelyabinsk impactor before they enter the atmosph
6	21-10-23 GB	Space.com				with diameters greater than 460 feet (140 m). However, as the Chelyabinsk incident showed, smaller objects can still pack a huge punch. #
7	21-10-21 US	Bulletin of the Atomic Scientists				# A remarkable Soviet-era monument lies on the outskirts of the formerly secret city of Chelyabinsk. It features a larger-than-life statue of Ig
8	21-10-21 US	Bulletin of the Atomic Scientists				imagined. Receive Email Updates Monument to the Splitting of the Atom # Chelyabinsk City, Russia May 18, 1992 # A remarkable Soviet-era
9	21-10-21 US	Bulletin of the Atomic Scientists				such as Alvin Weinberg's experimental molten salt reactor. Maids of Muslyumovo # Chelyabinsk Oblast, Southern Urals Region, Russia May
10	21-10-17 US	New York Post				had he accepted his AHL assignment. Instead, the 21-year-old is back home in Chelyabinsk, Russia, The Post can confirm. # It appears the R
11	21-10-15 US	YAHOO!Finance				gas pipeline project is seen on a pipe at the Chelyabinsk pipe rolling plant in Chelyabinsk, Russia # In this article: # Oops! # Something went
12	21-10-15 US	YAHOO!Finance				of the Nord Stream 2 gas pipeline project is seen on a pipe at the Chelyabinsk pipe rolling plant in Chelyabinsk, Russia # In this article: # Oo
13	21-10-15 AU	The Conversation				Earth. The impact hazard of asteroids is relatively well publicised, particularly after the Chelyabinsk meteor which exploded over a Russian t
14	21-10-06 GB	Space.com				, " he said. " About 100,000 times more than the energy of the Chelyabinsk meteor and a million times more energy than the bombs droppe
15	21-10-03 NG	gistmania.com				major cities in Russia's Urals region -- Chelyabinsk, Yekaterinburg and Tyumen. In Chelyabinsk, witnesses said the # Actress Foluke Daramol
16	21-10-03 NG	gistmania.com				The meteor shower sparked panic in three major cities in Russia's Urals region -- Chelyabinsk, Yekaterinburg and Tyumen. In Chelyabinsk, w
17	21-09-29 US	CNN				, 2021, aboard a helicopter surveying damage from wildfires in some areas of the Chelyabinsk region, Russia. # Moscow (CNN) Russian Eme



a standard format for displaying corpus data

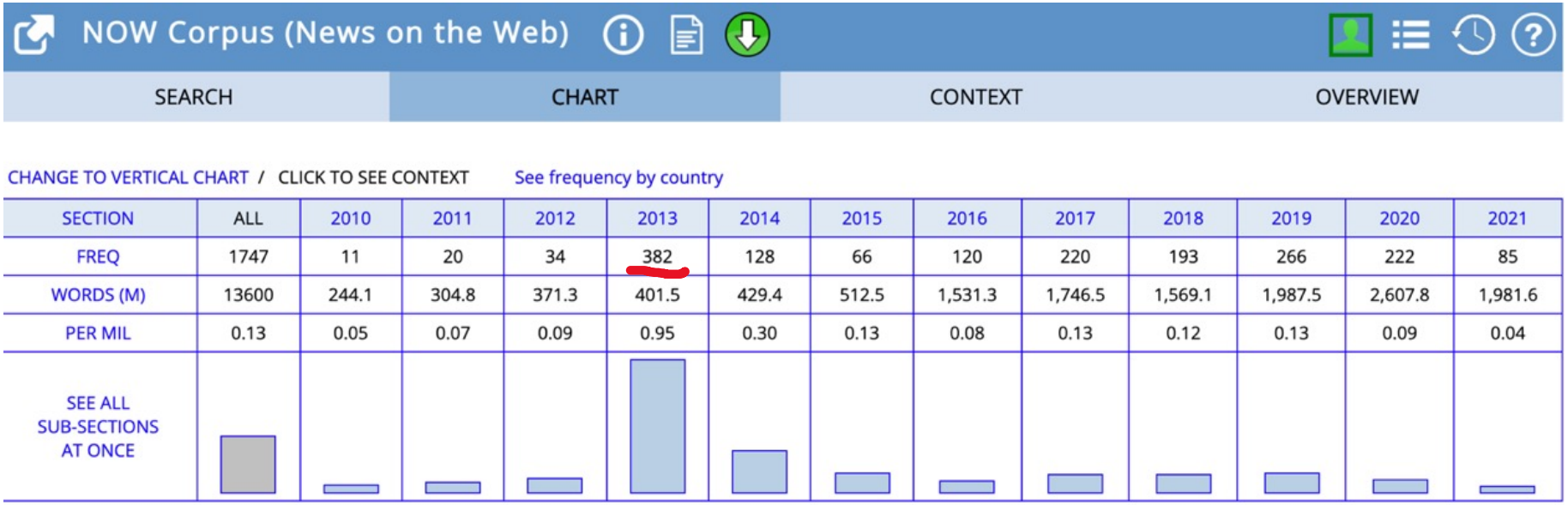
Key Word In Context (KWIC)

one can easily analyze the co-text of the node – all the words that precede and follow it

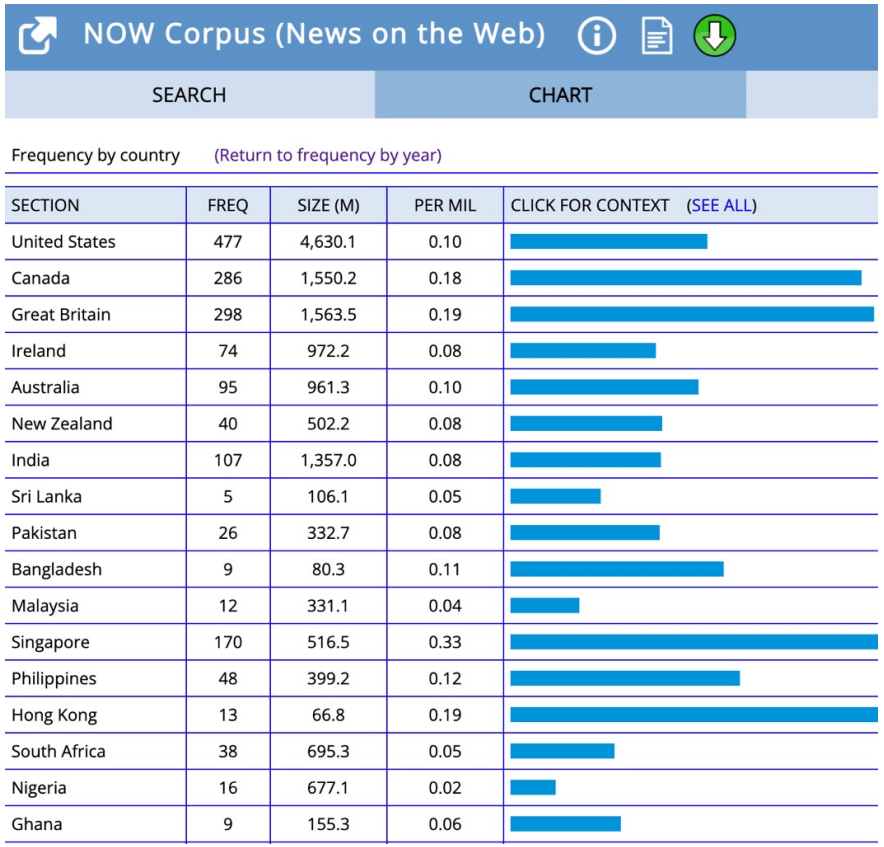
- By analyzing the immediate company of words, one can explore ***patterns of co-occurrence*** between words and study how words tend to form various kinds of

lexical, grammatical, lexico-grammatical combinations

Frequency of words across different sections



Frequency of the word ‘Chelyabinsk’ *by country*



NOW Corpus (News on the Web)

SEARCH | CHART

Frequency by country (Return to frequency by year)

SECTION	FREQ	SIZE (M)	PER MIL	CLICK FOR CONTEXT (SEE ALL)
United States	477	4,630.1	0.10	
Canada	286	1,550.2	0.18	
Great Britain	298	1,563.5	0.19	
Ireland	74	972.2	0.08	
Australia	95	961.3	0.10	
New Zealand	40	502.2	0.08	
India	107	1,357.0	0.08	
Sri Lanka	5	106.1	0.05	
Pakistan	26	332.7	0.08	
Bangladesh	9	80.3	0.11	
Malaysia	12	331.1	0.04	
Singapore	170	516.5	0.33	
Philippines	48	399.2	0.12	
Hong Kong	13	66.8	0.19	
South Africa	38	695.3	0.05	
Nigeria	16	677.1	0.02	
Ghana	9	155.3	0.06	

7.2. Wordlists

lists of words or phrases ranked according to their frequency or the number of their occurrences in a given corpus

wordlists are a powerful tool for making comparisons between corpora that represent different language uses

if we assume that the most frequent words are also the most useful ones, language teachers can use this information to decide which words should be addressed first where English is taught as a second/foreign language

COCA

Corpus of Contemporary American English

search for words by meaning '*industrial*'

Meaning	industrial + ☑ DEFINITION ☐ SYNONYM ☐ SPECIFIC ☑ GENERAL
	You can now search for words by meaning. For example, words with the following words in the definition: sugar, molecul*, magic*. You can also add a second word [-] for the dictionary entry, e.g. herb OR herbs (herb* would include the perhaps unwanted *herbivore* as well), computer AND device, cloud* NOT network. You can also search by synonym (noun: festival, disaster; adjective: harsh, kind; verb: groan, laugh), find more specific words (noun: machine, toy; verb: cry, walk) or more general words (frisbee, tequila; shriek, sashay) (both for just nouns/verbs), or combine these (e.g. walk, scare, screen, crystal).
Part of speech	☑ NOUN ☑ VERB ☑ ADJ ☑ ADV ☐ OTHER ☐ ALL
Range	-
Pronunciation	Rhymes with Type EXACT
Syllables / stress	○ ○ ○ ○ ○ ○ ○ ○ ○ ✖

	FREQ	Word	PoS	Audio	Video	In
	373744	business	NOUN			

trial enterprise and the people who constitute it 2 . the activity of providing goods and services involving financial
iness concerns collectively 4 . the volume of business activity 5 . a rightful concern or responsibility

	118323	plant	NOUN			

n industrial labor 2 . a living organism lacking the power of locomotion 3 . something planted secretly for discover
hose acting is rehearsed but seems spontaneous to the audience

	110976	concern	NOUN			

ts you because it is important or affects you 2 . an anxious feeling 3 . a commercial or industrial enterprise and th
ne that causes anxiety 5 . a feeling of sympathy for someone or something

	49867	works	NOUN			

n industrial labor 2 . performance of moral or religious acts 3 . everything available 4 . the internal mechanism of

	35394	tech	NOUN			

anical and industrial arts and the applied sciences

	27047	plant	VERB			

edlings) into the ground 2 . fix or set securely or deeply 3 . set up or lay the groundwork for 4 . put firmly in the mir
tion in order to secretly observe or deceive

	19955	concern	VERB			

mind of

	15934	technological	ADJ			

7.3. Word combinations and *n-gram analysis / cluster analysis*

chunks | **n-grams** | **lexical bundles**

Words tend to co-occur and form collocations, colligations and other examples of word combinations

N-gram is a technical term used to denote word combinations which consist of two or more words that repeatedly occur consecutively in a corpus

Corpus software AntConc

https://www.laurenceanthony.net/software/antconc/

AntConc

A freeware corpus analysis toolkit for concordancing and text analysis.

[AntConc Homepage] [Screenshots] [Help] [License]

Downloads:

- Windows (3.5.8)
- Windows 64-bit (3.5.9)
- Macintosh OS X (3.5.9)
- Linux 64-bit (3.5.9)
- Older versions
- Win 10 (4.0.0 RC 2.0)
- MacOS 10 Catalina (4.0.0 RC 2.0)
- MacOS 11 Big Sur (Intel+Silicon) (4.0.0 RC 2.0)

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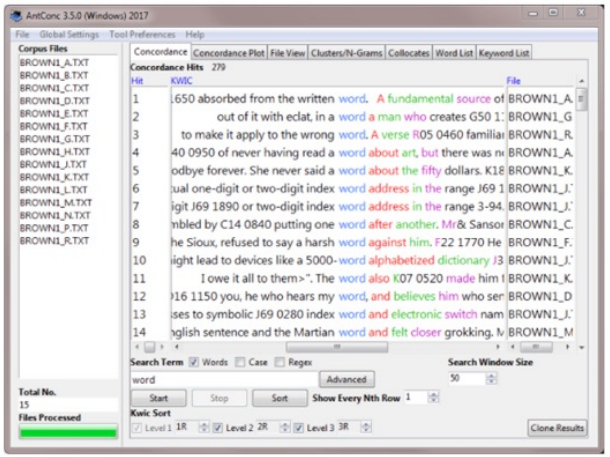
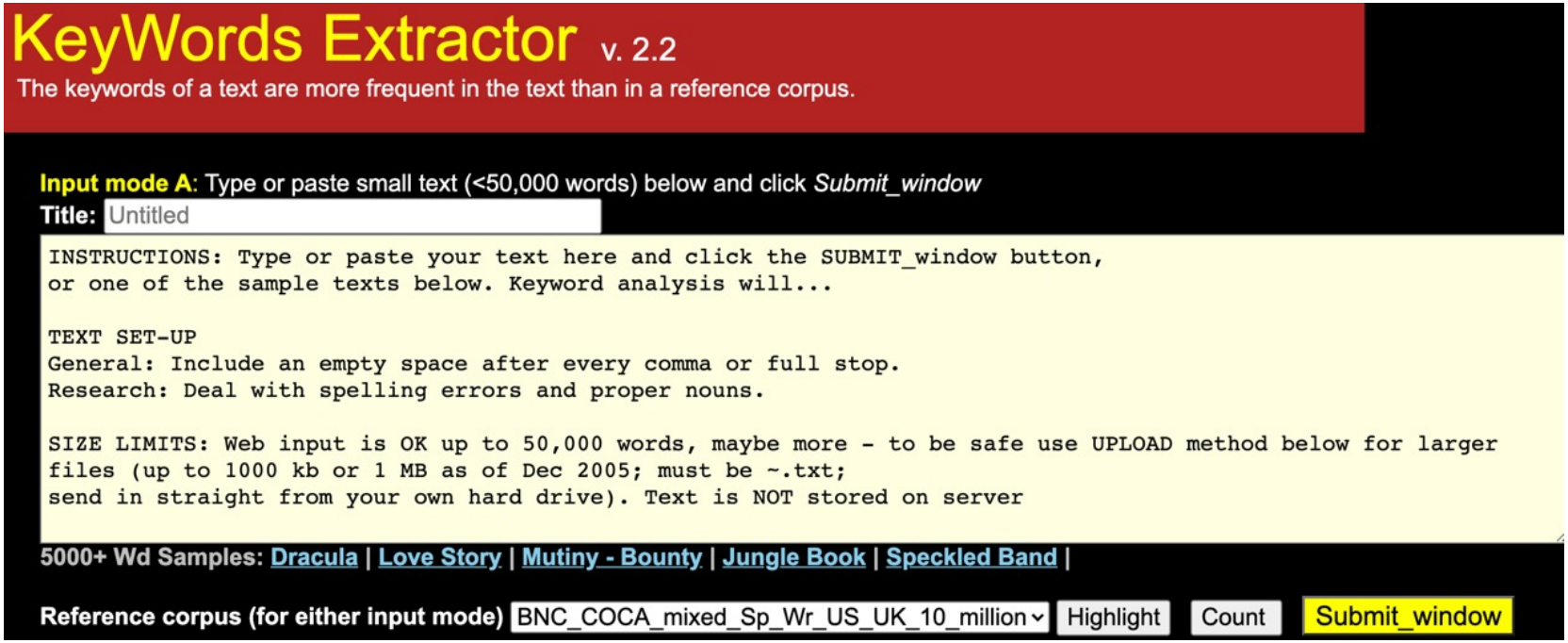


7.4. Keyness analysis and keywords

- **Keyword** – a word which occurs with unusual frequency in a given text.
- Such words are useful because they provide information about the **keyness** or specificity of a given corpus in terms of what it is about.

Keywords tool on Lextutor

http://www.lextutor.ca/key/



Example *.txt* format files

Trump inaugural address

Home > **Keywords Input** (or **Back** to preserve input) > **Keywords Output** - POTENTIAL KEYWORDS IN trump_inaugural_address.txt (1,458 words)

Keywords are the words that are far more frequent in your text, as a proprtion of its size, than they are in a reference corpus (here, the 10-million word mixed written-spoken, US-UK, developed by Paul Nation as basis for the first 2k of the BNC-Coca lists - see it -> bnc_coca_fams_speechwrite_US_UK_per10mill).

The number preceeding each word in the output below is the number of times more frequent this word is in **your text** than it is in the corpus **bnc_coca_fams_speechwrite_US_UK_per10mill**. For example, the first item in the output **20576.00 politic** means that **politic** has **1** natural occurrences in 10,000,000 words, but **3** occurrences in your 1,458-word text. This would work out to (3/1458) x 10,000,000 = **20,576** occurrences if your text were the same size as the corpus. The word is thus 20,576 / 1 = **20576.00 times** more frequent in your text than it is in the reference corpus. This probably means the word plays an important (or 'key') role in your text. Read more...

The keyword list below contains all the words in your text that are at least **25 times** more numerous in your text than in the reference corpus (the "keyness factor."). The greater the keyness factor, the more *'key'* a word is likely to be to your input text.

Paste raw (numberless, unsorted) output to other routines for comparison or alternative takes on output (Freq, VP, Tex_Lex_Compare) Get Raw List

(1) 20576.00 politic
(2) 160.57 america
(3) 91.04 prosper
(4) 65.95 wealth
(5) 61.79 factory
(6) 56.37 border
(7) 40.83 bless
(8) 34.58 celebrate
(9) 33.62 dream
(10) 32.16 citizen
(11) 29.29 protect

At keyness cut-off of 25, there are 11 keywords from a total of 1,458 words, for a keyword ratio of 7.54 per 1,000 words

WARNING: Short texts (<5,000 words) are not suitable for keyword analysis. This text is only 1,458 words

lists of keywords might be a ***starting point for a qualitative analysis***

concordance lines from the **inaugural address** Corpus ➪

investigate how the words ‘america’

and ‘prosper’ are used in specific contexts