tasks

*Documents the tasks we have completed on a weekly basis.*

# Week 7

* Paper submission for 1st half term
  + ~~Abstract~~
  + Introduction
  + Background
  + Data description
* Individual contributions survey

# Week 6

* Paper draft
  + ~~Abstract (Dakota)~~
  + Introduction (Uyen)
  + Background (Gloria & Samy)
  + Data description (Bao)

# Week 5

* ~~Meeting with Dr. Bybee~~

# Week 4

* ~~Annotated bibliography (at least 3 per person)~~
  + ~~Samy~~
  + ~~Gloria~~
    - [~~Rate of language evolution is affected by population size~~](https://doi.org/10.1073/pnas.1419704112)
    - [~~Evolutionary dynamics of language systems~~](https://doi.org/10.1073/pnas.1700388114)
    - [~~Language Anxiety : Conflict and Change in the History of English~~](https://ebookcentral.proquest.com/lib/uncc-ebooks/reader.action?docID=415479&ppg=1)
  + ~~Bao~~
    - [~~Quantitative analysis of culture using millions of digitized books~~](https://pmc.ncbi.nlm.nih.gov/articles/PMC3279742/)
    - [~~Characterizing the Google Books Corpus: Strong Limits to Inferences of Socio-Cultural and Linguistic Evolution~~](https://pmc.ncbi.nlm.nih.gov/articles/PMC4596490/)
    - [~~The impact of lacking metadata for the measurement of cultural and linguistic change using the Google Ngram data sets—Reconstructing the composition of the German corpus in times of WWII~~](https://doi.org/10.1093/llc/fqv037)
  + ~~Dakota~~
  + ~~Uyen~~
    - [~~How and Why Language Changes~~](https://humanitiescenter.byu.edu/how-and-why-language-changes/)
    - [~~The Language of Economic Growth: A New Measure of Linguistic Heterogeneity~~](https://www.cambridge.org/core/journals/british-journal-of-political-science/article/language-of-economic-growth-a-new-measure-of-linguistic-heterogeneity/A558FB3D3EBE6E2936CB4C7B72D69293)
    - [~~LANGUAGE DIVERSITY AND ECONOMIC DEVELOPMENT~~](https://www.researchgate.net/publication/253480616_LANGUAGE_DIVERSITY_AND_ECONOMIC_DEVELOPMENT)
* ~~Google Books Ngram data (Bao)~~
  + ~~Chinese (simplified)~~
  + ~~English~~
  + ~~French (remaining:~~ **~~1-00005-of-00006.gz~~**~~)~~
  + ~~German (remaining:~~ **~~1-00006-of-00008.gz~~**~~,~~ **~~1-00007-of-00008.gz~~**~~)~~
  + ~~Hebrew~~
  + ~~Italian (remaining:~~ **~~1-00001-of-00002.gz~~**~~)~~
  + ~~Russian (remaining:~~ **~~1-00001-of-00002.gz~~**~~)~~
  + ~~Spanish (remaining:~~ **~~1-00001-of-00003.gz~~**~~,~~ **~~1-00002-of-00003.gz~~**~~)~~
* ~~Email professors~~
  + ~~Dr. Damien Williams (Dakota)~~
  + ~~Dr. Joan Bybee (Samy)~~
  + ~~Dr. Alexia Galati (Dakota)~~
  + ~~Dr. Min Jiang (Dakota)~~

# Week 3

* ~~Project proposal: first draft title and abstract~~

# Week 2

* ~~Presentations: project topics~~

research-topics

*Gives an overview of the research questions we need to answer as part of our research. Write brief notes about how we’ve answered the questions.*

# Pièce de Résistance

[Hans Rosling's 200 Countries, 200 Years, 4 Minutes - The Joy of Stats - BBC](https://www.youtube.com/watch?v=jbkSRLYSojo)

# Managerial Questions

1. ~~What is the rate of language change over the years? (e.g. past 100 years)?~~
2. How can defining a core working lexicon and its educational application enhance language learning effectiveness? ~updated by 2/18/2025

**Research Questions**

1. Defining the Core Working Lexicon
2. Corpus Analysis: Utilize large linguistic datasets, such as the British National Corpus (BNC), to identify high-frequency words and phrases. http://www.natcorp.ox.ac.uk/corpus/
3. Data-Driven Learning (DDL): Implement DDL approaches where learners engage directly with real language data.

https://onlinelibrary.wiley.com/doi/full/10.1111/j.1467-9922.2010.00566.x?casa\_token=3\_-fql82-A0AAAAA%3ARiC7wn30wF9NW8WBS1XAKpKhGsnnKlzolyb7m-muGeJ4O6RmFHCBIwjHayBjJx2NiWDlUNPiNQBirw

1. Educational Applications
2. Personalized Learning Pathways
3. Integration with Technology
4. Measuring Effectiveness
5. Pre- and Post-Testing
6. Longitudinal Studies
7. Data Collection and Analysis
8. Learner Interaction Data
9. Feedback Mechanisms
10. What is the solution? What is our end result?
11. How can we quantify the change in a language? (e.g. change in English lexicon)
    1. What is the rate of change?
       1. Has the rate become more dynamic?
       2. Has the rate been constant?
    2. How do we measure the rate of change?
       1. How many new words are added each year? How many words fall out of common use?
       2. Use outlier removal techniques to determine threshold for when a word falls out of common use.
       3. How many new foreign words are added each year? (e.g. OED country of origin)
       4. Statistical divergence?
          1. Kullback-Leibler divergence?
          2. Jensen-Shannon divergence?
12. What language are we investigating? (e.g. English)
    1. What is a spoken, cultural language?
    2. How is a language created?
    3. Are we comparing languages?
       1. What is the overlap between languages?
13. Can we relate the change to historical events (e.g. industrial revolution, TV, Internet)
    1. Create a baseline of changes in lexicon, then establish a line graph (example)
    2. Create line graph for different metrics that may influence language and compare to baseline to find correlations
14. What is the relationship between the change in languages and GDP (e.g. global GDP)?
    1. How has GDP grown overtime?
    2. Who is the dominant GDP contributor?
15. Why is a data-driven approach necessary in linguistic analysis?
    1. Its big data
16. How has the rate of language change compared to GDP growth across major continents since 1945?
    1. We need global economic databases.
    2. Language change data.
    3. Our research explores the relationship between **language evolution** and **economic growth (GDP)** across major continents since 1945. This is valuable because:
       1. It reveals the impact of globalization on economic growth; language evolves due to trade, migration, and technological advancements.
       2. It helps predict future language & economic trends (e.g., China’s rise). We can identify these trends that can assist in education, AI language modeling, and international trade.
       3. It bridges linguistics & economics.
       4. It provides practical insights into AI & language technology.
    4. Major continents:

1. Asia: China, Mandarin

2. Africa: Nigeria, Nigeria

3. North America: USA, English

4. South America: Brazil, Spanish

5. Europe: Germany, German

6. Australia: Australia, English

* 1. GDP DATA: <https://www.rug.nl/ggdc/historicaldevelopment/maddison/releases/maddison-project-database-2023>

contacts

*Records our interactions with professors and subject matter experts.*

# Dr. Joan Bybee

* ~~UPDATE: Waiting for response, emailed on 2025/02/06~~
* ~~ACTION: Set up time to talk~~
* ~~ACTION: Talk with Dr. Bybee (2025/02/14)~~
* ACTION: Update Dr. Bybee about project progression

# Dr. Batia Laufer

* ~~UPDATE: Waiting for response, emailed on 2025/02/22~~
* ACTION: Set up time to talk

# ~~Dr. Damien Williams~~

* ~~UPDATE: Waiting for response, emailed on 2025/02/06~~
* ~~UPDATE: No response~~

# ~~Dr. Alexia Galati~~

* ~~UPDATE: Waiting for response, emailed on 2025/02/10~~
* ~~UPDATE: Not available for semester, currently on sabbatical~~

# ~~Dr. Min Jiang~~

* ~~UPDATE: Waiting for response, emailed on 2025/02/10~~
* ~~UPDATE: Not their field of study~~

Dr. Joan Bybee

Meeting Notes

Friday, 14 February 2025

Get clarity on next steps for our research with [Dr. Joan Bybee](https://www.unm.edu/~jbybee/)

1. Estimating Working Vocabulary:
   * Traditional methods involved randomly sampling dictionary words and identifying known ones, but this approach has many limitations.
   * Modern research might be able to improve this method with data-driven approaches.
2. Lexicon Growth and Loss Over Time:
   * Most research focuses on new words entering the lexicon rather than words falling out of use.
   * Studying language change should consider both aspects.
3. Lemma-Based Word Counting:
   * Inflectionally related words (e.g., "write," "writing," "wrote") should be grouped together as lemmas.
   * High-frequency words sometimes behave differently (e.g., "child" vs. "children" vs. "kids").
4. Globalization and Language Change:
   * The Industrial Revolution and the Internet age have accelerated vocabulary shifts.
   * Communication is now less bound by geography, possibly affecting the rate of language change.
5. Factors Influencing Language Change:
   * Languages at cultural and trade crossroads tend to change faster (e.g., English vs. Icelandic).
   * Borrowing often happens for new objects or technologies that don’t already have native words.
6. Economic Development and Borrowing:
   * Technologically advanced countries create new terms that other languages may borrow.
   * Economic strength (e.g., GDP growth) may correlate with a higher influx of borrowed words.
7. Resistance to Borrowing:
   * Some languages, like German and French, prefer creating native words rather than borrowing foreign ones.
8. Written vs. Spoken Language:
   * Written language has a larger vocabulary, but spoken language includes slang and informal expressions.
   * Some corpora (e.g., COCA) provide transcribed spoken language, which could be valuable for analysis.

Step-by-Step Vocabulary Teaching:

* Teaching English as a second language follows a structured progression of vocabulary.
* Researchers in word recognition and speech studies focus on practical vocabulary.

Limitations of Google Books Ngram Corpus:

* It consists mostly of books from universities, including scientific and educational texts.
* Important to assess how books were chosen and whether there are gaps (e.g., missing informal or spoken language).
* Expanding to other corpora like COCA (spoken language), SOAP (conversational speech), and movie subtitle databases can improve the study.

Differences Between Written and Spoken Corpora:

* COCA contains spoken data but includes many interviews, which differ from casual conversations.
* SOAP and movie subtitle corpora may better represent everyday spoken language.

Estimating a Person’s Working Lexicon:

* A corpus reflects a population’s vocabulary, not an individual’s.
* However, individuals are embedded in a linguistic community, so studying common core vocabulary can still be insightful.
* The central limit theorem can help estimate a population’s typical lexicon size.

Applying Lexicon Statistics:

* Lexicon statistics is a valuable field for this research.
* Identifying a stable "core vocabulary" over time could provide insights into necessary words for understanding texts.

Dr. Batia Laufer

[Dr. Batia Laufer](https://english.haifa.ac.il/2021/10/18/prof-batia-laufer/?lang=en)

potential-sources

*Documents all of the potential sources (for literature and data sources) — categorized by their relevant subject matter. Annotate the source in the* [*[sources] Google Sheets*](https://docs.google.com/spreadsheets/d/1DQNQx-eSpiNr_gGgxtp6E92eCA5Nli8-2aBS0JwlQ9A/edit?gid=0#gid=0)*. DO NOT WRITE YOUR LITERATURE REVIEW HERE.*

archive

*Documents archived sources (for literature and data sources) — categorized by their relevant subject matter. Potential sources are moved to the archive when they are no longer relevant to our research. Sources are archived to reflect our current research and are documented in case we need them in the future.*

# Literature

## Understanding Language

[The language instinct: How the mind creates language](https://danielwharris.com/teaching/268/readings/Pinker.pdf)

[Language Change and Historical Reconstruction](https://www.ling.upenn.edu/courses/Fall_2003/ling001/language_change.html)

[Bilingualism: The good, the bad, and the indifferent](https://www.cambridge.org/core/journals/bilingualism-language-and-cognition/article/bilingualism-the-good-the-bad-and-the-indifferent/36BAEB01D08C92D992254A6B89C22BB0)

[The Globalization of Language](https://denizo.opia.dk/la.trezorejo/alilingve/hjarvard.The.Globalization.of.Language.pdf)

[Internal and external forces in language change](https://doi.org/10.1017/S0954394500123014)

[How Many Is Enough?—Statistical Principles for Lexicostatistics - PMC](https://pmc.ncbi.nlm.nih.gov/articles/PMC5149542/)

## Dr. Joan Bybee

[Word frequency and context of use in the lexical diffusion of phonetically conditioned sound change](https://www.unm.edu/~jbybee/downloads/Bybee2002WordFreq.pdf)

[How plausible is the hypothesis that population size and dispersal are related to phoneme inventory size? Introducing and commenting on a debate](https://doi.org/10.1515/lity.2011.009)

[Language universals and usage-based theory](https://www.unm.edu/~jbybee/downloads/Bybee2009LangUniv.pdf)

[Language change and universals](https://www.unm.edu/~jbybee/downloads/Bybee2006LangChange.pdf)

## Google Books Corpus

[Quantitative analysis of culture using millions of digitized books](https://pmc.ncbi.nlm.nih.gov/articles/PMC3279742/)

[Syntactic Annotations for the Google Books NGram Corpus](https://aclanthology.org/P12-3029/)

[Characterizing the Google Books Corpus: Strong Limits to Inferences of Socio-Cultural and Linguistic Evolution](https://pmc.ncbi.nlm.nih.gov/articles/PMC4596490/)

[Using the Google N-Gram corpus to measure cultural complexity](https://academic.oup.com/dsh/article/28/4/668/1075348)

[The impact of lacking metadata for the measurement of cultural and linguistic change using the Google Ngram data sets—Reconstructing the composition of the German corpus in times of WWII](https://doi.org/10.1093/llc/fqv037)

## Diachronic Corpus Linguistics

[Why the quantitative analysis of diachronic corpora that does not consider the temporal aspect of time-series can lead to wrong conclusions](https://doi.org/10.1093/llc/fqv030)

[Using the parameters of the Zipf–Mandelbrot law to measure diachronic lexical, syntactical and stylistic changes – a large-scale corpus analysis](https://ids-pub.bsz-bw.de/frontdoor/deliver/index/docId/4223/file/Koplenig_Using_the_parameters_of_the_Zipf_Mandelbrot_2015.pdf)

[Reflecting on the quantitative turn in linguistics](https://www.degruyter.com/document/doi/10.1515/ling-2019-0046/html)

[25 years of English Language and Linguistics: a celebration and analysis](https://www.cambridge.org/core/journals/english-language-and-linguistics/article/25-years-of-english-language-and-linguistics-a-celebration-and-analysis/2B9E057E9A3D054C3D7C3D94A910BD79)

## Comparison Techniques

[Quantitative approaches to diachronic corpus linguistics](https://doi.org/10.1017/CBO9781139600231.003)

[Evolution of Semantic Similarity—A Survey](https://doi.org/10.1145/3440755)

[Quantifying Semantic Alignment Across Languages](https://research-information.bris.ac.uk/ws/portalfiles/portal/208272739/Thompson_Roberts_Lupyan_2018.pdf)

[Similarity in languages and programs](https://www.sciencedirect.com/science/article/pii/S0304397513004520)

[Similarities and differences](https://d1wqtxts1xzle7.cloudfront.net/108135295/sci2000-libre.pdf?1701465254=&response-content-disposition=inline%3B+filename%3DSimilarities_and_Differences.pdf&Expires=1738017902&Signature=TgjK~Kr6FKhtGJHPnTE60fMv763xh~G-hkDah-Bv6aTLQscej911pw23IwLuIa3tMpI5TVoWbnWV2Oo6lrPczLr4Ikwn-gZ~hAYvPdOUgGTXKC0GPQVor7o72LjlGMzzs41othO7RKULbO8PbhtC9mG8lEJRMiWwXY91LXnTlG8JPrSjt9WXwmehjxbKlHeNXA16QDo8Fauw3ZoRgRZqjSzi-W9H~Jo2g5NOF4STDhGiUup1EmHTJyviHiVq0TALJqzk0L1aeg2nO2ho9YYuGx0gu~PjsBtUXiTBhDqUcUdz3N6h1LkYQFfIxcQqzQOR3-HEBxTLx5KMOvLRL8a6oQ__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA)

[Measuring the Semantic Similarity of Texts](https://aclanthology.org/W05-1203.pdf)

[A Model for Matching Semantic Maps between Languages (French/English, English/French)](https://aclanthology.org/J03-2001.pdf)

[Divergence measures based on the Shannon entropy](https://doi.org/10.1109/18.61115)

## Social Networks

[Social network analysis: An overview](https://wires.onlinelibrary.wiley.com/doi/full/10.1002/widm.1256)

[Tell me who your friends are and I might be able to tell you what language(s) you speak: Social network analysis, multilingualism, and identity](https://journals.sagepub.com/doi/abs/10.1177/13670069070110030201)

literature-review

*Aggregates our independent literature reviews. The final literature review for submission will be on a separate document.*

*WRITE YOUR RESPECTIVE LITERATURE REVIEWS WITHIN YOUR ASSOCIATED SUBTAB (Click the hamburger menu on the left for the [Document Tabs] > Click the dropdown arrow for the [literature-review] tab > Click on your respective subtab)*

Outline:

1. Synthesize across sources/authors/methods (i.e., thematic organization around variables, methods, etc.)
2. Summarize the state of the literature in terms of consensus (or: conventional wisdom), disagreement, and omissions or gaps
3. Share empirical findings
4. Evaluate the overall state of knowledge
5. Discuss any problems or flaws in existing research that your research could improve upon (e.g., critique current literature)
6. Highlight the importance of conclusions your research might draw (e.g., normative implications)

# Data

Google Books Ngram is a corpus of digitized texts that encompasses around 4% of all books ever printed. It is a frequency dataset that provides a count of how many times a single text appeared in published texts over time. The creation of Google’s Ngram allowed for the extraction of many data driven insights such as estimating the size of the English lexicon, revealing trends in the evolution of grammar, or detecting periods of censorship and suppression (Michel et al., 2011). In contrast, the Ngram has inherent limitations when generalizing insights about language. For example, the large proportion of scientific texts can lead to an overrepresentation of specialized terms that are less common in everyday usage (Pechenick et al., 2015).

# Active Vocabulary Definition

An individual’s vocabulary can be broken down into 2 types. An active (productive) vocabulary, which is compromised of the words that an individual uses when speaking or writing. They are words we understand and actively use in a language. The other type is passive (receptive) vocabulary, which are the words that we can interpret or understand as they surface when reading or listening. (“Active and Passive Vocabulary Knowledge” 31)

# Study on Learning Vocabulary

Several studies were conducted in different settings, such as regular classrooms examinations, and controlled university evaluations, surrounding the development of student’s lexicon. The studies revealed that passive vocabulary can improve by 1,600 words in 1 year, however it took students 6 years to learn 1,900 words. Similarly, active vocabulary can improve by 850 words in 850 words in 1 year, yet again it students 6 years to learn 1,700 words. The study highlights the need for classroom instruction to optimize the setting inwhich students can expand their lexicon (Laufer 1995) (Laufer 1998). Another study adds that for the lexical development of english as second language (ESL) learners, it is crucial practice writing with already acquired vocabulary (Goya, Cai, Ding, Fecher, 2011) .

The development of vocabulary takes a different direction for passive and active vocabulary after a certain threshold. Where it is believed that the development of active vocabulary becomes dependent on the “need for use” of the word after a certain point (Laufer 1991) (Gu 2010).

Research Q: How can defining a core working lexicon and its educational application enhance language learning effectiveness?

Well, its specific. We could potentially go with it.

Samy Bakikerali

THE CLIPPED LANGUAGE REVOLUTION: EXPLORING CLIPPING IN CONTEMPORARY SOCIAL MEDIA ENGLISH.

Link to the source

https://ibn.idsi.md/sites/default/files/imag\_file/32-44\_14.pdf

The lead author(s)

Dragusin, Elena Denisa

Research question the researchers aimed to address

What are the types of clipped language? How significant are they in the new era of Social Media English?

Relevant quotes

* Users frequently engage in linguistic creativity by coining new words, adapting existing ones, and employing various forms of wordplay, proving the plasticity and the dynamic nature of language reflected on social media in response to digital communication needs.
* The limited character counts and rapid pace of interaction on platforms like Facebook, Instagram, WhatsApp, Twitter and Snapchat have led to the widespread adoption of clipped language forms such as acronyms, contractions, and abbreviations. Words and phrases are often shortened for efficiency and convenience, giving rise to new lexical innovations and linguistic shortcuts
* Furthermore, the rise of social media has facilitated the global spread of English as a **lingua franca**, with SME serving as a common ground for communication among speakers from diverse linguistic backgrounds.
* We may affirm undoubtfully that clipped language is likely to continue evolving in response to changes in technology, communication platforms, and linguistic trends

Gradual Modifications and Abrupt Replacements: Two Stochastic Lexical Ingredients of Language Evolution.

Link to the source

https://direct.mit.edu/coli/article/49/2/301/114514/Gradual-Modifications-and-Abrupt-Replacements-Two

The lead author(s)

Michele Pasquini, Maurizio Serva, Davide Vergni

Research question the researchers aimed to address

Creation of a new automated cognate detection to discriminate gradual lexical modification and abrupt lexical replacement; to prove that these 2 are random processes that separately drive the evolution of languages

Relevant quotes

* Applying statistics to determine the degree of similarity between two languages is the founding idea of lexicostatistics
* Glottochronology, the application of lexicostatistical methods with the goal of establishing when a language separated into derived languages

Diachronic changes in lexical density of research article abstracts: A corpus-based study.

Link to the source

https://www.sciencedirect.com/science/article/pii/S0024384124001682

The lead author(s)

Zhu Haoran, Wang Teng, Pang Nana

Research question the researchers aimed to address

Does hard science research exhibit higher lexical density than soft science papers? Study to investigate both the temporal dynamics of and disciplinary variations in lexical density using extensive multidisciplinary text data.

Relevant quotes

* Lexical density refers to the ratio of content words and measures the information density of academic texts
* Using a large-scale corpus of research article abstracts from 16 academic disciplines, the present study reveals that the rise in lexical density could be a common trend across all fields.
* several avenues that future research could take. First, the present study employed RA abstracts as data. Although the abstract is an important part of a research article, it may be an overgeneralization to extend the conclusions of this study to RA full texts. Thus, it would be interesting to validate the findings of the present study with RA full texts, should the challenge of data availability be successfully addressed.

[How to Trace the Growth in Learners Active Vocabulary? A Corpus-based Study in: Teaching and Learning by Doing Corpus Analysis](https://brill.com/display/book/edcoll/9789004334236/B9789004334236-s019.xml)

Gloria Chen

Language acquisition is a dynamic process influenced by vocabulary structure, cognitive mechanisms, and educational methodologies. One crucial factor in learning a language is mastering a core working lexicon, a set of high-frequency words that serve as building blocks for fluency. Researchers have long argued about the connection between learning new words and learning new grammar rules. More recent longitudinal studies (Xi & Geva, 2023) have shown that vocabulary and grammar rules affect each other in English Language Learners (ELLs) and students who speak only one language.

Some crucial ways that language develops are lexical bootstrapping (using vocabulary to learn grammar) and syntactic bootstrapping (using syntax to figure out meaning) (Gleitman & Gleitman, 1992; Xi & Geva, 2023) in many studies. Longitudinal data suggest that early syntax proficiency predicts later vocabulary growth and vice versa. However, ELLs tend to rely more on vocabulary to develop syntax, whereas monolingual peers exhibit a more balanced syntax-to-vocabulary relationship (Xi & Geva, 2023).

Studies on passive vs. active vocabulary acquisition (Laufer, 1995; 1998) indicate that learners can expand passive vocabulary by 1,600 words per year, but active vocabulary growth remains slower (~850 words per year). This highlights the need for structured lexical instruction to facilitate efficient language learning.

Corpus-based research, such as Google Books Ngram Viewer, has provided insights into historical word frequency trends, helping researchers determine which words form the core lexicon of a language. However, there are still worries that academic datasets contain too much specialized language, which can cause problems in real-life language use (Pechenick et al., 2015).

# 

### **Summary of**

**A 4-Year Longitudinal Study Examining Lexical and Syntactic Bootstrapping in English Language Learners (ELLs) and Their Monolingual Peers  
Authors:** Yueming Xi & Esther Geva (2023)  
**Published in:** *Developmental Psychology***DOI:** 10.1037/dev0001417

# Managerial Questions

1. How can defining a core working lexicon and its educational application enhance language learning effectiveness? ~updated by 2/18/2025

**Research Questions**

1. Defining the Core Working Lexicon
2. Corpus Analysis: Utilize large linguistic datasets, such as the British National Corpus (BNC), to identify high-frequency words and phrases. http://www.natcorp.ox.ac.uk/corpus/
3. Data-Driven Learning (DDL): Implement DDL approaches where learners engage directly with real language data.

https://onlinelibrary.wiley.com/doi/full/10.1111/j.1467-9922.2010.00566.x?casa\_token=3\_-fql82-A0AAAAA%3ARiC7wn30wF9NW8WBS1XAKpKhGsnnKlzolyb7m-muGeJ4O6RmFHCBIwjHayBjJx2NiWDlUNPiNQBirw

1. Educational Applications
2. Personalized Learning Pathways
3. Integration with Technology
4. Measuring Effectiveness
5. Pre- and Post-Testing
6. Longitudinal Studies
7. Data Collection and Analysis
8. Learner Interaction Data
9. Feedback Mechanisms

[Language Change and Historical Reconstruction](https://www.ling.upenn.edu/courses/Fall_2003/ling001/language_change.html)

Summary:

The article begins by exploring the history of language change, making it a valuable resource for establishing the historical context of linguistic evolution in our research. It provides insights into the mechanisms and factors driving language change over time, which can help us frame a compelling narrative in our research background.

Relevance to our Research:

This article provides foundational insights into the mechanisms and causes of language change, which are crucial for understanding how languages evolve over time. For our research, focusing on the interplay between language change and socio-economic factors, the following points are particularly pertinent:

Language Learning and Transmission: Investigating how economic development influences language acquisition and the introduction of new linguistic elements.

Language Contact: Exploring how trade and economic interactions lead to the borrowing and integration of new terms, especially in rapidly developing economies.

Social Differentiation: Analyzing how different socio-economic groups adopt distinct linguistic features, potentially leading to dialectal variations.

By understanding these mechanisms, we can get a better picture of how changes in socioeconomic conditions affect the development of languages.

Print book at our library (not sure it is useful or not):

Title

Corpus analysis : language structure and language use

Author/Creator

[North American Symposium on Corpus Linguistics and Language Teaching (3rd : 2001 : Boston, Mass.)](https://charlotte.primo.exlibrisgroup.com/discovery/search?query=creator%2Cexact%2CNorth%20American%20Symposium%20on%20Corpus%20Linguistics%20and%20Language%20Teaching%2CAND&tab=Everything&search_scope=MyInst_and_CI&sortby=rank&vid=01UNCC_INST%3A01UNCC_INST&facet=creator%2Cexact%2CNorth%20American%20Symposium%20on%20Corpus%20Linguistics%20and%20Language%20Teaching&mfacet=tlevel%2Cinclude%2Cpeer_reviewed%2C1&mfacet=rtype%2Cinclude%2Cprintbooks%2C1&mfacet=rtype%2Cinclude%2Celectronicbooks%2C1&mfacet=rtype%2Cinclude%2Carticles%2C1&mfacet=rtype%2Cinclude%2Cbook_chapters%2C1&mfacet=tlevel%2Cinclude%2Cavailable_p%2C1&lang=en&mode=advanced&offset=0)

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data

*Documents all of the potential data sources— categorized by their relevant subject matter. Write brief notes about each datasource and how it can be applied to our research.*

[*https://datasetsearch.research.google.com/*](https://datasetsearch.research.google.com/)

[Open Language Archives Community](http://www.language-archives.org/index.html)

[Google Books NGrams](https://storage.googleapis.com/books/ngrams/books/datasetsv3.html) ([Instructions](https://stressosaurus.github.io/raw-data-google-ngram/))

# Linguistic Corpora

[English Corpora](http://english-corpora.org/)

[Non-English, Parallel & Multilingual Corpora](https://martinweisser.org/corpora_site/corpora2.html)

[Leipzig Corpora Collection](https://wortschatz.uni-leipzig.de/en/download)

# Software

[SIL Language Technology - Cog](https://software.sil.org/cog/)

[SIL Language Technology - Software Products](https://software.sil.org/software-products/)

research-paper

**Estimating Active Vocabulary**

# Abstract

The vocabulary available for use within a language, referred to as a lexicon, does not possess a uniform distribution of implementation. This paper proposes a quantitative method that drops words of low frequency to establish a working lexicon, or a subset of the lexicon that contains only statistically significant words over a specific timeframe. The working lexicon for each year can be used in a variety of applications including: determining rates of change of the language, training machine-learning models, and providing an optimized list of vocabulary words for English education.

**Introduction**

# Background

Language acquisition is a dynamic process influenced by vocabulary structure, cognitive mechanisms, and educational methodologies. One crucial factor in learning a language is mastering a core working lexicon, a set of high-frequency words that serve as building blocks for fluency. Researchers have long argued about the connection between learning new words and learning new grammar rules. More recent longitudinal studies (Xi & Geva, 2023) have shown that vocabulary and grammar rules affect each other in English Language Learners (ELLs) and students who speak only one language.

Some crucial ways that language develops are lexical bootstrapping (using vocabulary to learn grammar) and syntactic bootstrapping (using syntax to figure out meaning) (Gleitman & Gleitman, 1992; Xi & Geva, 2023) in many studies. Longitudinal data suggest that early syntax proficiency predicts later vocabulary growth and vice versa. However, ELLs tend to rely more on vocabulary to develop syntax, whereas monolingual peers exhibit a more balanced syntax-to-vocabulary relationship (Xi & Geva, 2023).

Studies on passive vs. active vocabulary acquisition (Laufer, 1995; 1998) indicate that learners can expand passive vocabulary by 1,600 words per year, but active vocabulary growth remains slower (~850 words per year). This highlights the need for structured lexical instruction to facilitate efficient language learning.

Corpus-based research, such as Google Books Ngram Viewer, has provided insights into historical word frequency trends, helping researchers determine which words form the core lexicon of a language. However, there are still worries that academic datasets contain too much specialized language, which can cause problems in real-life language use (Pechenick et al., 2015).

# Methodology

## Data Description