

Psycholinguistics

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SS 2026

Requirements

- Attendance and participation: The success of this course relies on your participation. Whether you are working in group activities, individual workshops, or class discussions (on- and offline), you must be present and active.
- Groups of students will conduct small-scale psycholinguistic projects/ experiments and present them at the end of the semester.
- A project report is to be submitted by the end of the semester.

GRADING

- Attendance, active participation = 20%
- Assignments (homework) = 30%
- Project presentation = 30%
- Final project report = 20%

Project class

- Conceptualize psycholinguistic/ lexical project
 - Formulate hypothesis
 - Gather data (corpus, record or download data...)
 - Analyze data
 - Write up project report
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- **Class Moodle**

Language...

- Is an integral part of our waking lives
 - Most of us take its use for granted
 - Effortless, automatic, high accuracy (most of the time)
 - Unconscious (we are not aware of language use)
- Is a highly complex cognition
 - Make sense of speech stream
 - Create meaning in speech production
 - Decipher printed words
 - Write language
 - Sign language

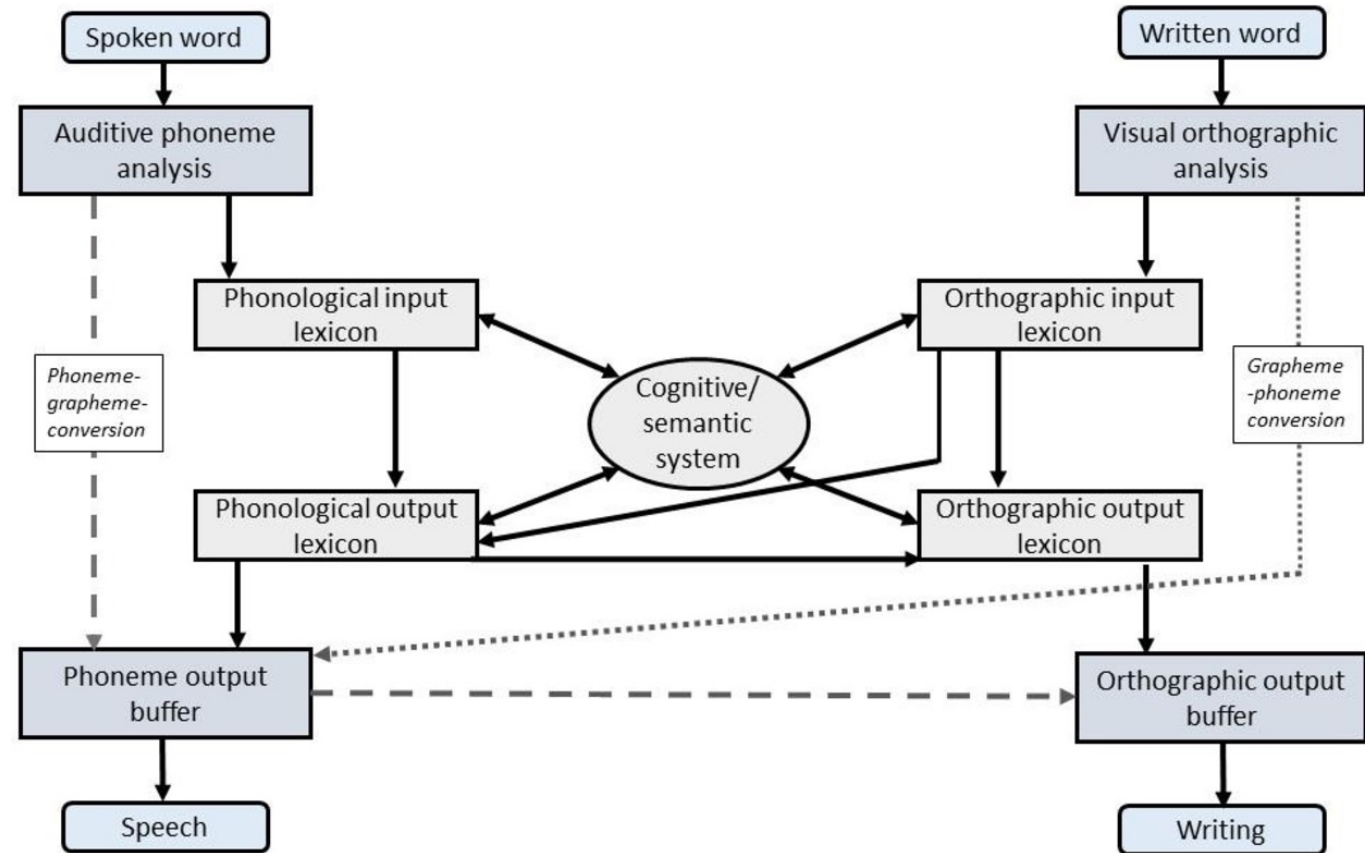
Human mind

- “Psycholinguistics [or the psychology of language] explores the relationship between the human mind and language” (Field, 2003)
- The study of language processing mechanisms
- “Study how word meaning, sentence meaning, and discourse meaning are computed in the mind”
- “The study of the relationships between linguistic behaviour and psychological processes, including the process of language acquisition”
- “Psycholinguistics is the discipline that investigates and describes the psychological processes that make it possible for humans to master and use language. Psycholinguists conduct research on speech development and language development and how individuals of all ages comprehend and produce language” (Ratner & Gleason, 2004)

Focus of psycholinguistics

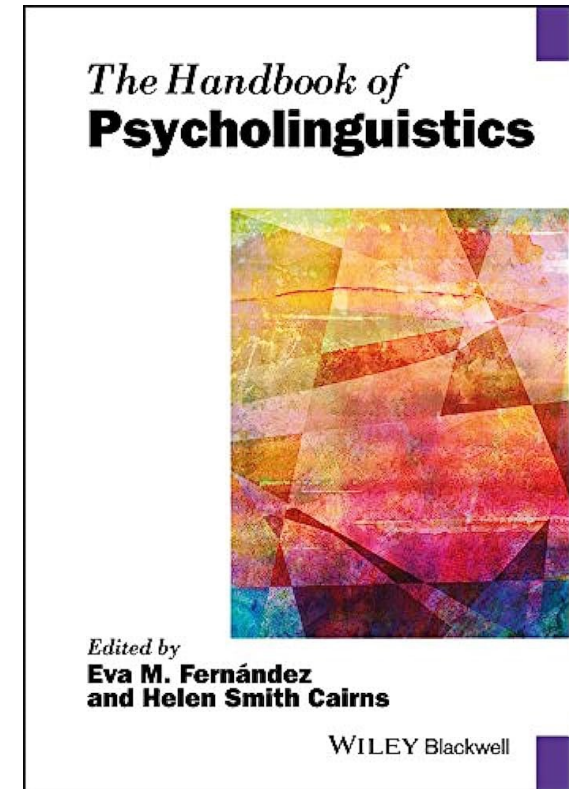
- Individual language user
- Patterns of linguistic behaviors across language users
- Psychological processes underlying language
- Language as a window into the human mind

→ Interdisciplinary nature



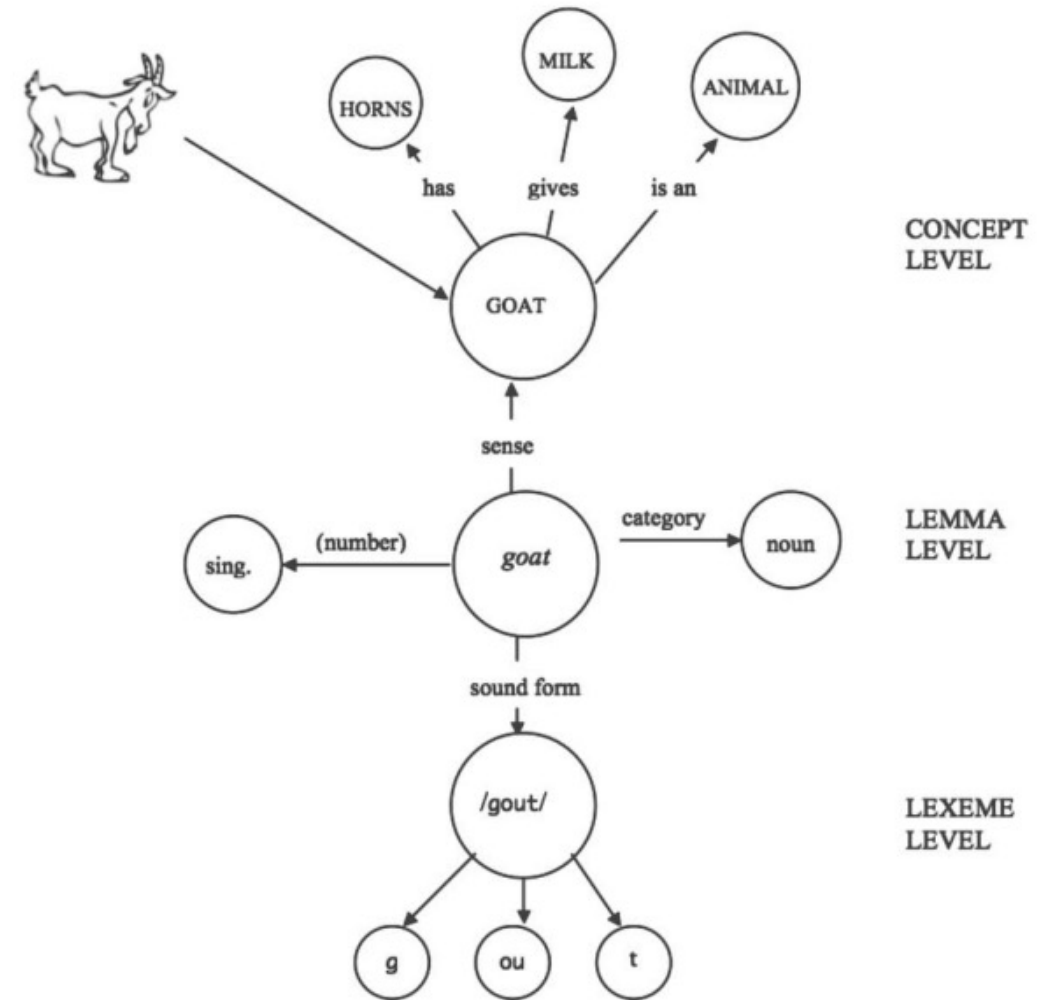
Six areas of psycholinguistics

- 1. Language processing
- 2. Language storage and access
- 3. Language comprehension and production
- 4. Neurological basis of language
- 5. Language acquisition and development
- 6. Language in exceptional/ focused populations



Language processing

- Modalities of language use
 - Auditory: speaking and listening
 - Visual: reading and writing
 - Signed languages
- Stages of language processing when speaking
 - Create message → activate concept/lemma, syntactic frame, word form



Define “word”

How many words does a person know?

- In the first language
- In second and other languages (L3, L4...)
- Question important for various disciplines related to language processing, development, acquisition, and education
- Vocabulary size estimates depend on how words are defined
 - For L1: range between less than 10.000 to over 200.000 words (Brysbaert et al., 2016)

What is a word?

- Oxford Dictionary
- “a single distinct meaningful element of speech or writing, used with others (or sometimes alone) to form a sentence and typically shown with a space on either side when written or printed”
- Wikipedia
- “despite the fact that language speakers often have an intuitive grasp of what a word is, there is no consensus among linguistics on its definition and numerous attempts to find specific criteria of the concept remain controversial”

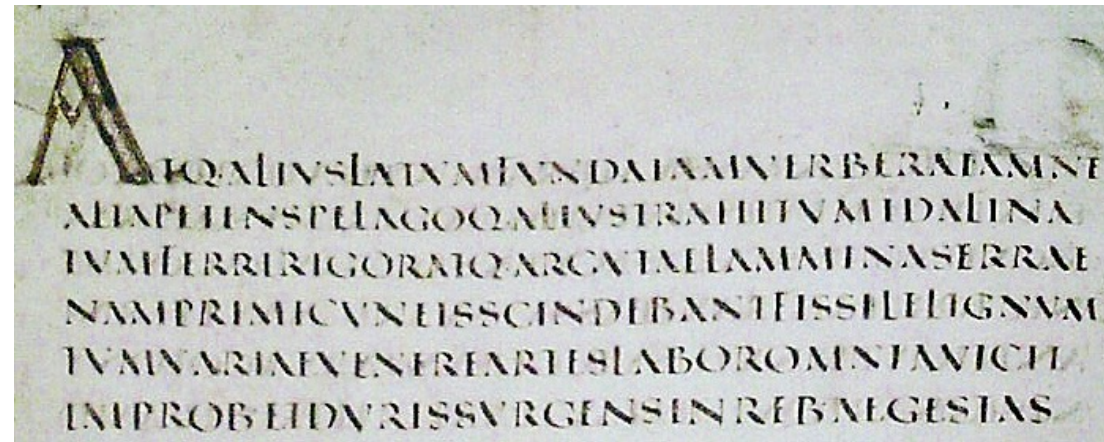
The morphosyntax of words

- General assumption that morphosyntactic word is a fundamental and universal category of language structure
- Morphology and syntax both defined in terms of words
 - Morphology deals with composition of words
 - Syntax deals with combination of words
- Haspelmath (2011): “words cannot readily be identified”
- How do we tell a word from an affix or a syntactic phrase?
 - Separation issue: pauses in speech (*but* liaison, connected speech), blank spaces in written language

Evidence for wordhood

- words are real but we haven't found good definition yet
- speakers have clear intuitions about what is and what isn't a word (Langacker, 1972)
 - Education, literacy has taught us what a word is
- the idea of **universality of words** is due to the bias towards written language and the strong influence of the habit of word separation by spaces in Western languages that has been with us for about a thousand years

Orthography



- Orthographies of languages based on Greek, Cyrillic, and Latin alphabets use spaces between words
 - Other languages may not: Chinese, Standard Japanese writing, modern Thai
- Until around 1000, European languages used *scriptio continua* (“continuous writing”, see Saenger, 1997)
 - Spaces probably facilitated readability
- Modern use of spaces is certainly guided by language structure, but in many languages there are obvious inconsistencies in the spelling rules
 - British *healthcare* vs. American *health care*
 - Web site → website
 - German infinitive marker “to”: ... *zu gehen*....., *wegzugehen*

Phonology

- Phonological features can discriminate words
 - Phonetic/ phonological features that indicate word beginnings
 - German glottal stop “arm” [ʔa:m] vs. “warm” [wa:m]
 - And word endings
 - Final devoicing
 - E.g., German *Tag* ['ta:k]
 - Segmental prolongation at the end of words: [s] longer in “ice” [aɪs:] than in “sun” [sʌn]
- Phonological word = a string of sounds that behaves as a unit for certain kinds of phonological processes, especially stress or accent
 - Phonological words are domains of syllabification → “they hate us” syllabified as “ha-tus” [heɪ-tʌs]
 - Last syllables [tʌs] on lexical boundary between verb and pronoun
- “the phonological word does not always coincide with the morphological word” (Bresnan & Mchombo, 1995)
- Clearly, phonological criteria alone cannot define words (Bloomfield, 1933; Hockett, 1958)

Semantic non-compositionality

- Sapir, 1921: words are “the smallest, completely satisfying bits of isolated meaning into which the sentence resolves itself”
 - essentially a morph
 - Smallest meaningful unit
- Dixon & Aikhenvald, 2002: “words have a conventionalised coherence and meaning”
- However, many complex words are semantically compositional, and many phrases are non-compositional (“fat cat” wealthy, privileged person, “spill the beans” reveal secret)
 - Meaning alone is difficult to use as definitional criterion

Morphosyntax

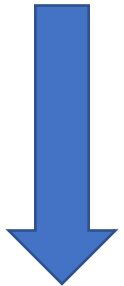
- Some morphosyntactic criteria and problematic cases
 - *Free occurrence*
 - Free morphemes, bound morphemes
 - But: transitive verbs, articles, etc. cannot occur on their own
 - * “We discussed in the video” → requires object: “different topics”
 - If an element can occur independently it must be minimally a morphosyntactic word, not an affix
 - *Mobility*
 - Affixes are bound, but words can occur in different position
 - Most words have fixed position with respect to other words
 - Few languages have truly free word order

Non-universal definition

- Best solution may be to define words language-specific
 - “what we call ‘words’ in one language may be units of a different kind from the ‘words’ in another language “ (Lyons, 1968)
 - E.g., English “to” vs. German “zu”
 - “there may be clear criteria for wordhood in individual languages, but we have no clear-cut set of criteria that can be applied to the totality of the world’s languages” (Spencer, 2006)
- Words are fuzzy concepts
 - Notion of half-words (or semi-words, e.g., articles)
- But talking about words is deeply entrenched in linguists’ habits

What is word knowledge?

- What does it mean to *know* a word?
- Continuum of word knowledge



- No knowledge; don't even know it exists
 - Awareness that such a word exists, but don't know what it means
 - Vague notion of what the word means, in a particular context
 - Rich understanding; know the word well and can use it
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- Passive vs. active vocabulary
 - Guessing: “*roundhouse*”
 - Instances of never having seen the word but ‘knowing’ it instantly
 - morphological compounding

Collections of words

- Mental lexicon
 - dictionary-like structure
 - contains the knowledge about words acquired over a lifetime
 - and in various languages
- Human repository of lexical knowledge (Oldfield, 1966)
 - can be seen as a dynamical memory system supporting linguistic processing that is continuously adapting
- A typical educated American adult knows the meaning of about 40,000 words (de Deyne et al., 2017)
- At age 5, children know about 3000 words (Aitchison, 2012)

The mental lexicon

- organizes words according to their various properties
 - semantic properties (meaning)
 - syntactic properties (e.g. part-of-speech)
 - perceptual characteristics (e.g. pronunciation)
 - pragmatic ones (e.g. appropriate usage)
- Representation and processing of words in the mental lexicon holds information crucial for
 - theories on language acquisition and development
 - cognitive principles underlying human lexical storage
- Abstract concept
 - best conceptualized as an ideal, abstract notion, rather than a concrete list of word knowledge (Aitchison, 2012)

Memory and search

- ML is unlike a real dictionary
- rather than provide explicit definition for words, ML represents meanings in terms of patterns of word use and the connections between words (Elman, 2009)
- “lexical processing” refers to retrieving words from the mental storage in perception or production
 - Production and perception processes different
- lexical processing experiments can give insights into how the ML is organized and structured and what factors play a role for perception or production retrieval

Which words do you associate
with the word
platypus?

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