Methodology in Linguistic Research

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PART I: DEFINING "LINGUISTICS"

1. Linguistics is an *empirical science*, i.e. empirical and science.

2. The criteria for linguistic theory include:

   - Observational adequacy: data collection is complete and sorted.
     - Linguistic research primarily deals with data.
   - Descriptive adequacy: a set of rules that can describe the distribution of data.
     - Linguistic research aims to give formal rules to generate data.
   - Explanatory adequacy: underlying structure that constraints the rules on the surface.
     - Linguistic research discovers universal features of human language [singular].

3. The underlying structure is rooted in human cognition. Thus linguistics is also part of the interdisciplinary field called cognitive science, which in addition to linguistics also includes disciplines such as psychology, philosophy, anthropology, computer science, and neuroscience.
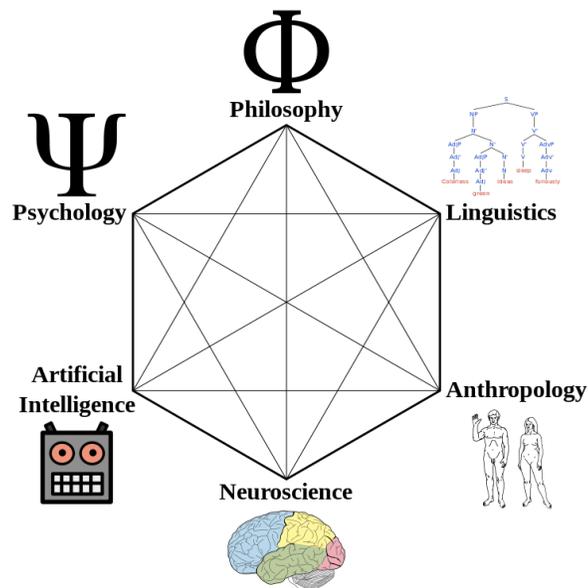

Figure 1 The field of cognitive science
Source https://en.wikipedia.org/wiki/Cognitive_science

4. Linguistics gets at the cognitive properties of the human mind [the internal] by studying the externalizations [the external] in language.
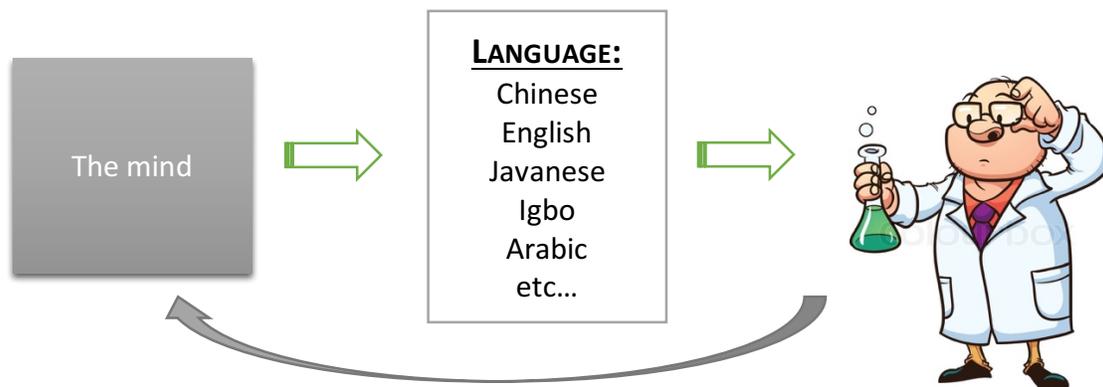

Figure 2 The deductive nature of linguistic methodology

5. Linguistics can be classified as humanities, social sciences, and physical/formal sciences.

  - Linguistics in Humanities: the traditional style of linguistics, e.g. grammar, aiming at observational adequacy on individual languages.
  - Linguistics in Social Sciences: the most common subfields of linguistics can all be considered social sciences, e.g. syntax, phonology, sociolinguistics, psycholinguistics.
  - Linguistics in Sciences (physical, formal): phonetics, computational linguistics, neurolinguistics, the formalisms used in linguistics, historical linguistics (especially related to biology and genetics)

PART II: METHODOLOGICAL TOOLS

1. Data collection and analyses [the basis for any research, corpus linguistics]
2. Inductive generalization [use evidence to generalize, test w/ more data, revise & repeat]
3. Experimental and statistical methods [syntax/semantics linguistic judgment tests; neurolinguistics experiments with brain imaging technology; phonology/phonetics experiments with acoustic analyses; psycholinguistic hypothesis testing; sociolinguistics survey etc.]
4. Formalisms, e.g. syntactic trees, semantics formulas & phonological representations.

    Why formalism?

    - Object language vs. meta language;
    - computability;
    - knowledge representation.

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