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Figures and refutations.

Two types of "empiricness" in cognitive linguistics

(talk delivered on Sep 24, 2015 at Polish Cognitive Linguistics Association Conference in Lublin, Poland)

"Empirical" in linguistics

- Many linguists use the term describe their research as "empirical" when it involves the use of quantitative methods (cf. Geerarts 1999, Lewandowska-Tomaszczyk 2006).

- This suggests that they consider the use of quantitative methods as the criterion of empiricness.

qualitative methods   quantitative methods

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Testability criterion

- In *The Logic of Scientific Discovery* (2002 [1934]), Karl Popper proposes the criterion of **testability** instead. An empirical hypothesis is **universal** and **falsifiable**.

	Falsifiable?	Universal?	Empirical?
"All ravens are black."	✅	✅	✅
"Some ravens are black."	❌	❌	❌
"Edgar Allan is black."	✅	❌	❌

Quantitativity for Popper

- Popper writes about quantitative methods in Chapter 8 ("Probability"), where he denies that certain types of quantitative research is empirical:

  People with inductivist leanings (...) may confuse a hypothetical [probability] estimate (...) with one of its empirical 'sources' (...) The claim is often made that we 'derive' estimates of probabilities (...) from past occurrences (...) But from a logical point of view there is no justification for this claim. We have made no logical derivation at all. What we may have done is to advance a *non-verifiable* hypothesis which nothing can ever justify logically: the conjecture that frequencies will remain constant, and so permit of extrapolation. (158; my emphasis)

  Only an infinite sequence of events (...) could contradict a probability estimate. But this means that probability hypotheses are unfalsifiable (...) We should therefore really describe them as *empirically uninformative*, as *void of empirical content*. (182; my emphasis)

Idiographic vs. nomothetic

Roughly speaking, testability divides sciences into **idiographic** (unempirical, dealing with idiosyncratic descriptions, like history) and **nomothetic** (empirical, dealing with laws and lawlike statements, like physics; terminology borrowed from Windelband (1980 [1894])).

idiosyncratic descriptions
(idiographic sciences)
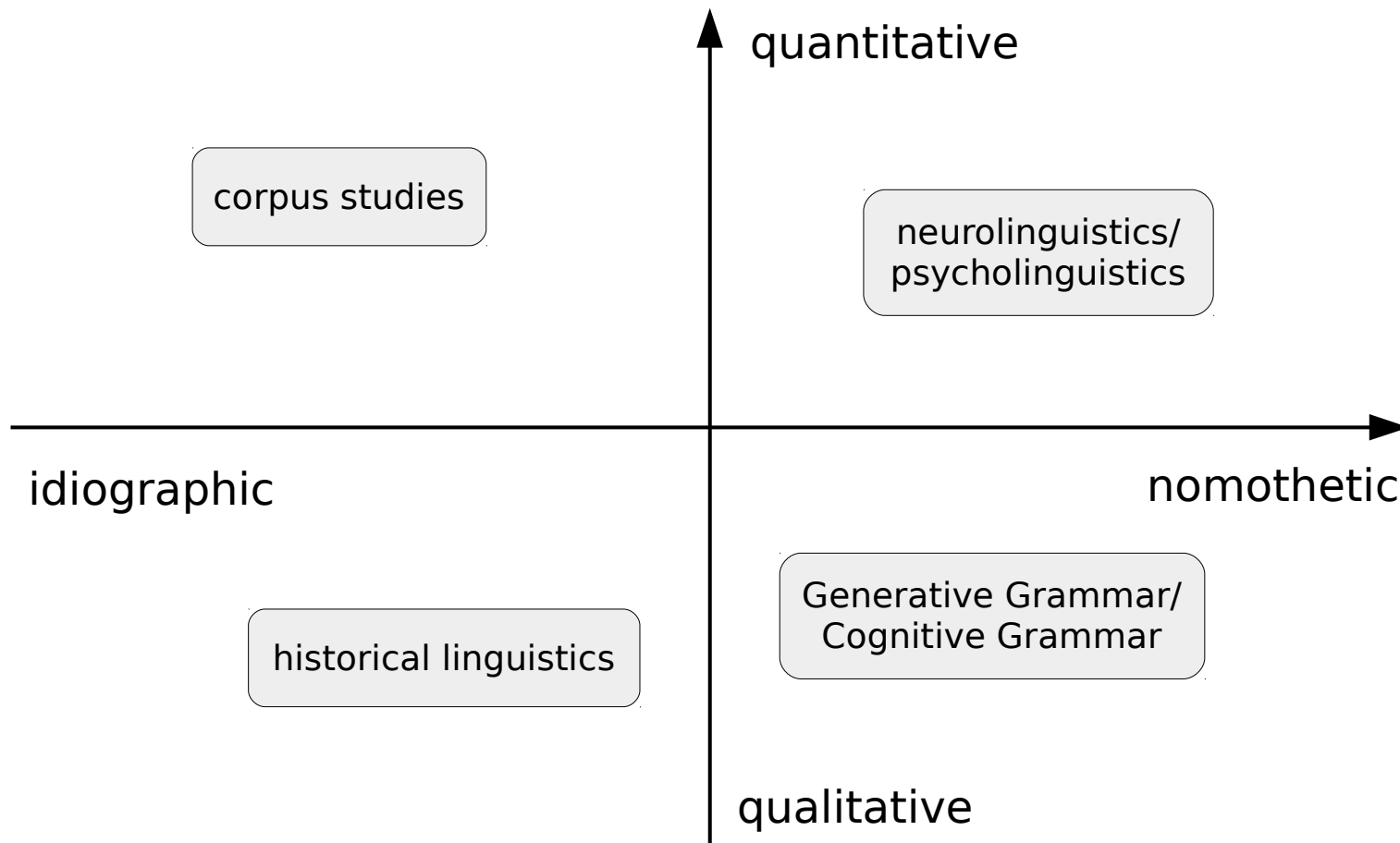
testable "laws"
(nomothetic sciences)
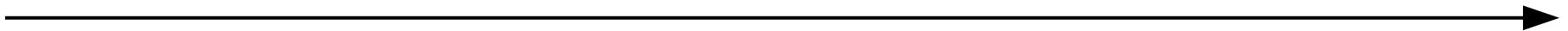
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A bigger picture

- Superimposing the axes produces a plane that provides some orientation in different "styles" of research in cognitive linguistics (and linguistics in general; see Slide 7).

- Roughly speaking, the horizontal axis represents goals of research and the vertical axis represents methods used to achieve these goals.

- Different styles of linguistic research populate all quarters of the plane.

Methodological landscape

quantitative

corpus studies

neurolinguistics/
psycholinguistics

idiographic

nomothetic

Generative Grammar/
Cognitive Grammar

historical linguistics

qualitative

Methodological landscape

- Depending on the criterion taken into account, different parts of the plane count as empirical (see Slides 9 and 10).

- For instance, according to the testability criterion, corpus studies may be seen as unempirical, while Langacker's Cognitive Grammar may be seen as strictly empirical (see Slide 10). This seems to run against a popular intuition among cognitive linguists.

Empirical – quantitativity criterion
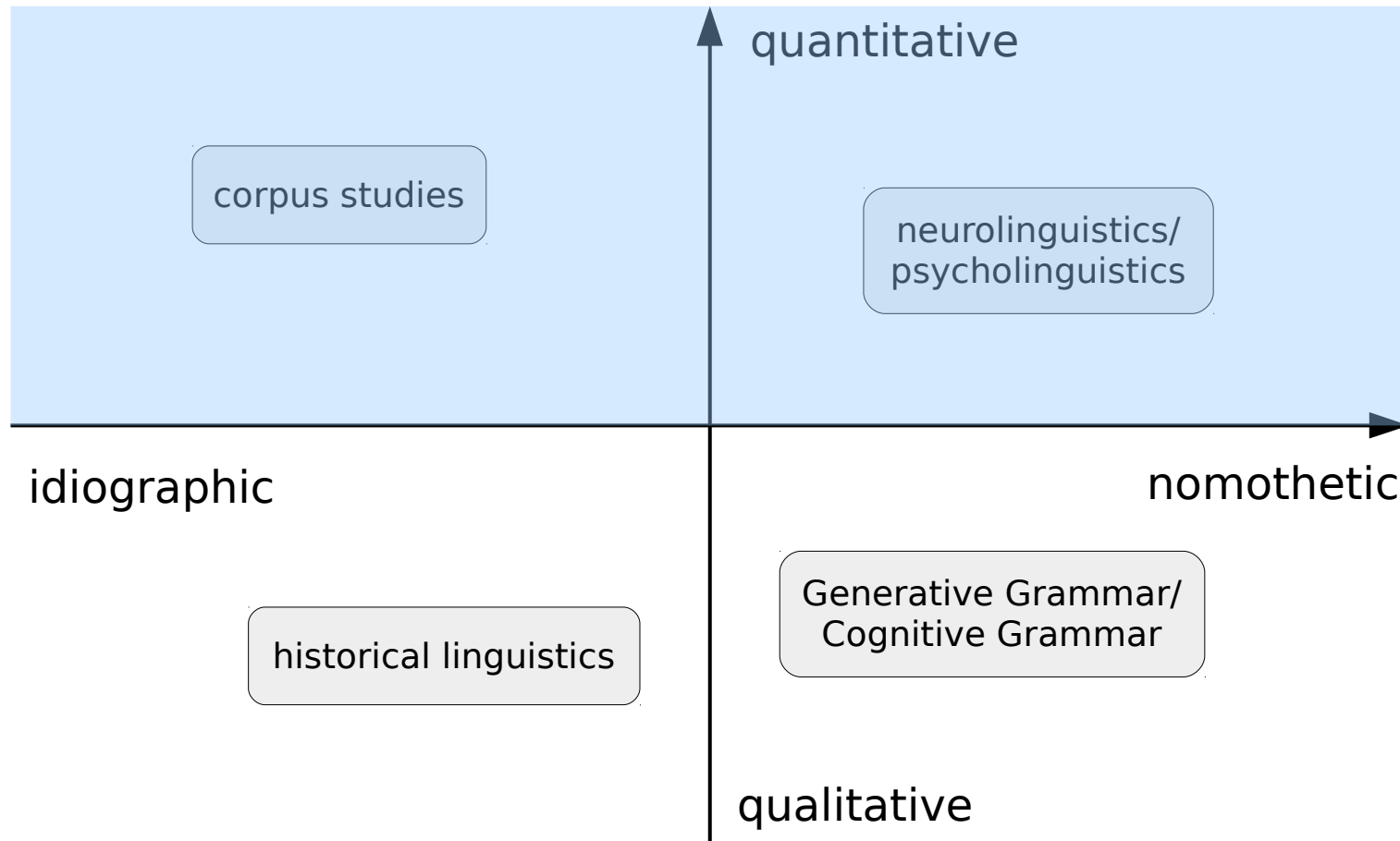
Empirical – testability criterion
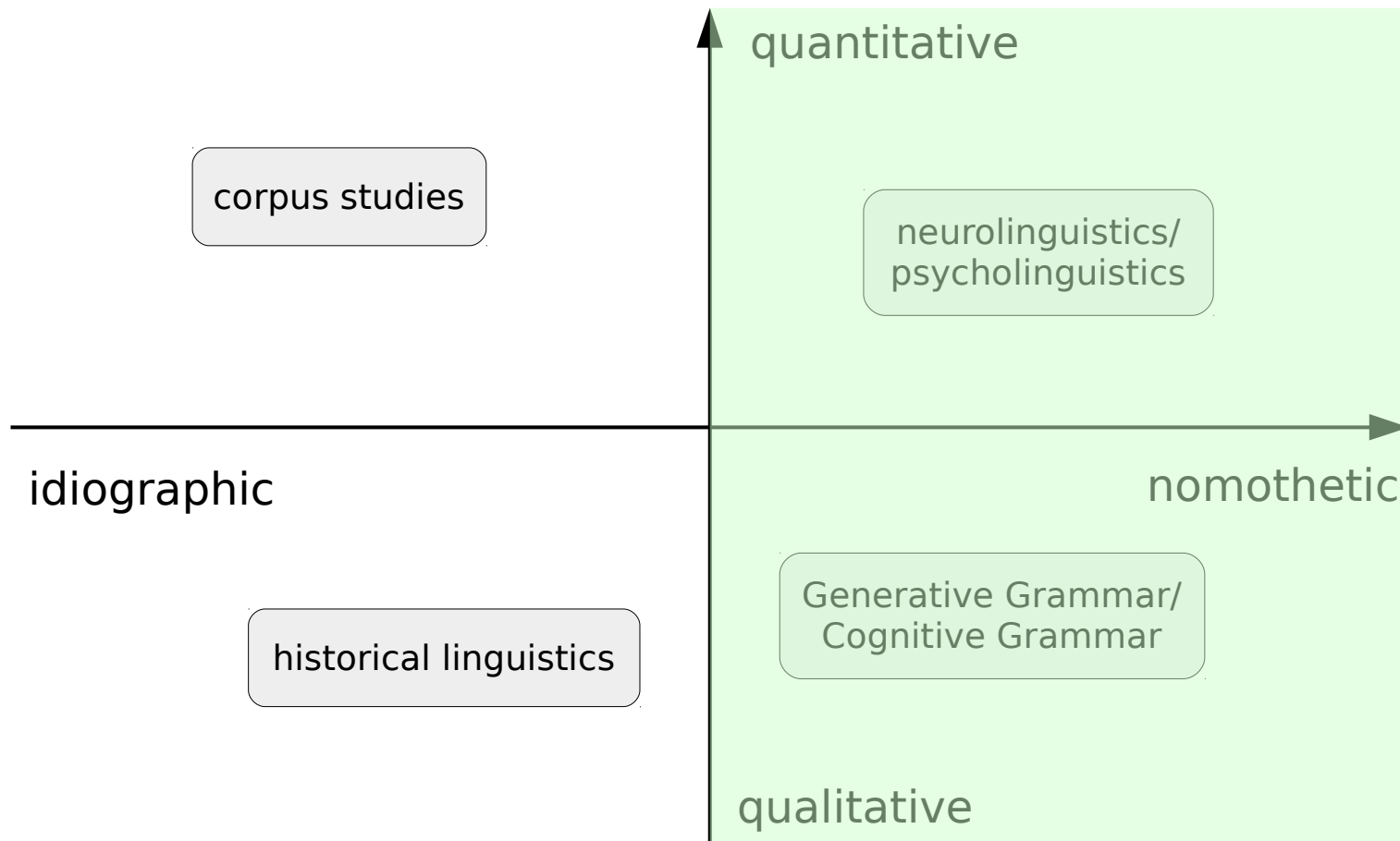
Disclaimers

I do not:

- prescribe the use of the word *empirical*;
- prescribe the use of one particular style of research;
  - believe that all research has to be empirical according to any of the criteria;
- subscribe to a strictly Popperian vision of empiricness;
- try to solve the "demarcation problem" (provide criteria of "scientificness" in linguistics or in general philosophy of science).

Take-away messages

- There are several ways of understanding the word *empirical*.
- "Mindful anarchism": "Anything goes!" (Feyerabend 2010 [1975]), but we should know where it goes to.
  - One should define the goals of a study clearly (idiographic vs. nomothetic style) and select means appropriate for the goal (e.g. qualitative vs. quantitative research).
  - It should be also born in mind that all methods have inherent limitations (e.g. Hume's and Goodman's problems of induction, confirmational holism).
- Theory evaluation relative to the goals of the theory.
  - Theories with different goals (like idiographic vs. nomothetic theories) cannot be adequately compared; they are incommensurable in Kuhn's sense (cf. Kuhn 1970).

References

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