Cognitive science as three methodological cultures

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Models of Cognitive Science

- Traditional: Six disciplines
- Alternative: Three dimensions
  - Content/domain
  - Levels
  - Methods

Three kinds of cog sci research
- Three kinds of methods
  - Empirical
  - Model building (sciences of the artificial)
  - Formal

Methods are not only about methods

- Explicit and implicit assumptions on what constitutes “good research”
- Different priorities
  - Correspondence
  - Coherence

Why important to cognitive scientists?

- Work in team with people with a “monocultural” education
  - Engineers
  - Psychologists
- No real understanding of other “cultures” without having lived or practiced them

Requirements on Cognitive Scientists

Two goals:
- Be able to communicate with people with different scientific backgrounds
- Must be a legitimate practitioner in (at least) one science
Questions

• True also for applied cognitive science?
• Two or three “cultures”?
• Other important categories?
  – In general?
  – For Cognitive Science?

Hypothetico-deductive vs inductive research: an additional important dimension

• Hypothetic-deuctive studies:
  – Hypothesis driven
  – From theory to empirical predictions to test
  – Example: Traditional experimental cognitive psychology

• Inductive studies:
  – Problem driven
  – From observations to generalization
  – Example: Cognitive ethnography; initial user studies when developing new software

• Not only different research approaches but also different kinds of research reports