

Demarcation:  
The Unity of Science

PHL 311  
Spring 2006

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Is there a common element  
for all science?

- What counts as science?
- The assumption might be that there is a common element
- Consider
  - Physics
  - Biology
  - Psychology
  - Economics
  - Administrative science
  - Library science

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Biology

- There are some distinctive things about biology
- Consider
  - Laboratory and field work
  - Evolution
  - Biochemistry
  - Genetics

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## Psychology

- There are some distinctive things about psychology
- Consider
  - Mental states
  - Experimental limitations
  - Learning
  - Species

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## Common elements

- Some common elements might include
  - Testing
  - Causal connections
  - Statistical analysis
  - Observations
  - Experiments
  - Falsifiability and corroboration
  - Theory construction
  - Mathematical formalism

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## Different Elements

- However there are a variety of other elements to consider
  - Historical explanation
  - Relation of the observable to unobservable
  - Functional analysis
  - Manipulation of variables

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## Unity of Science?

- Possible ways to look at unity or the lack of unity
  - Demarcation criterion
  - Reduction
  - Method
  - Epistemology

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## Science and History

- Suppose the notion of history is added to the attempt to understand science
- Has science changed over time?
- Can the non-scientific become scientific?
- Can the scientific become non-scientific?
- Bureaucratic epistemology
- Social and political concerns

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