


A set of ideas and beliefs: generally referring to political or social theory



# Science and Ideology

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Feyerabend's  
anarchistic view of  
science

Creationism debate

Literature:

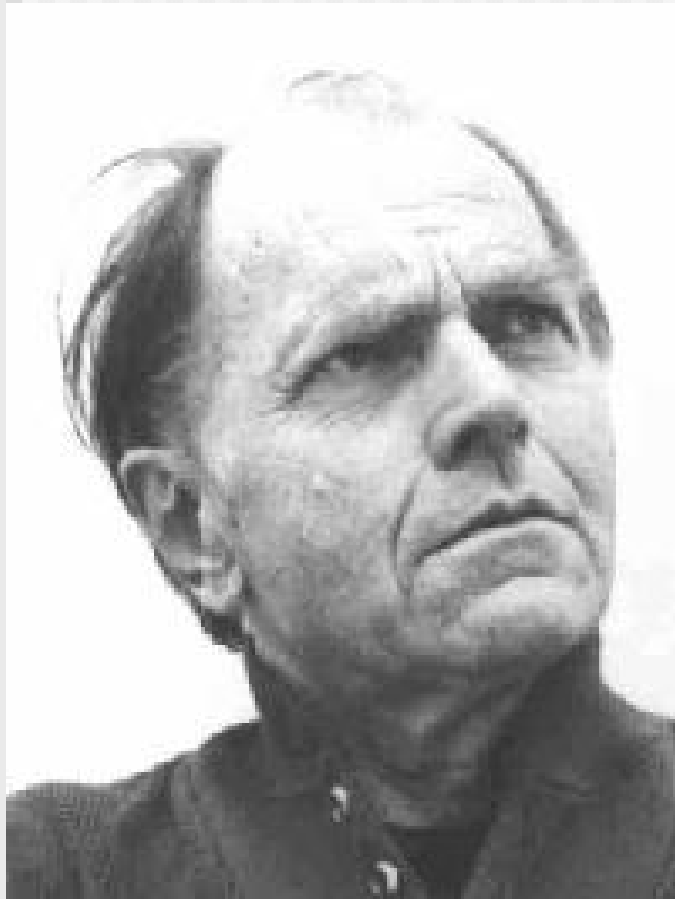
Feyerabend; *"How to defend society against science"*

Kitchner, *"Believing where we cannot prove"*

Chalmers

# Paul Feyerabend

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*"Against Method:  
Outline of an  
Anarchistic Theory of  
Knowledge"* London  
New Left Books,  
1975

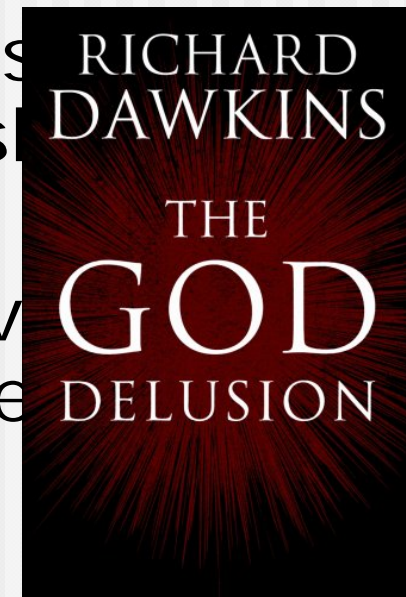
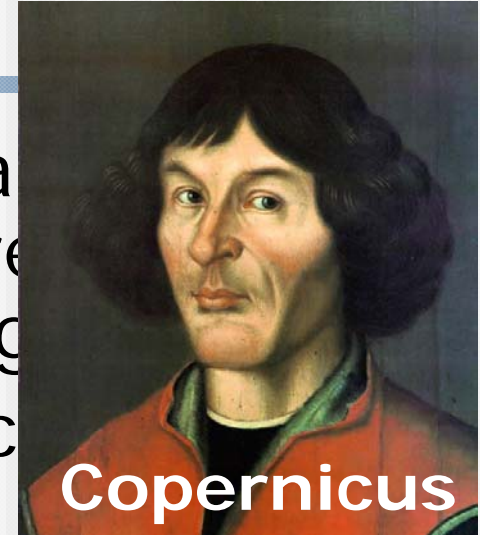
# Against Method (1975)

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- Wants to defend society against ideologies
- Suggests that 17<sup>th</sup> and 18<sup>th</sup> century science was an instrument of liberation (breaks hold the comprehensive system of thought) and enlightenment (made man question inherited beliefs)
- Claims that modern science has deteriorated into a «stupid religion»  
«*Science, with all its reductionism and materialism, has deprived man of his special status—only an idea of culture that excludes science can restore man's dignity*» (Nietzsche)

# Feyerabend on Science and Religion

- Scientific «facts» are taught at an early age and in the same way religious «facts» were taught a century ago
- Science doesn't receive the critical scrutiny that society gets even at elementary school
- The judgement of the scientists is given in much the same way as the bishop or cardinal was accepted.
- Science has become as oppressive as the ideologies it once had to fight. Heresies and unorthodox science are sanctioned



# Feyerabend's Argument

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Two common arguments to defend the exceptionalist position that science has in society today:

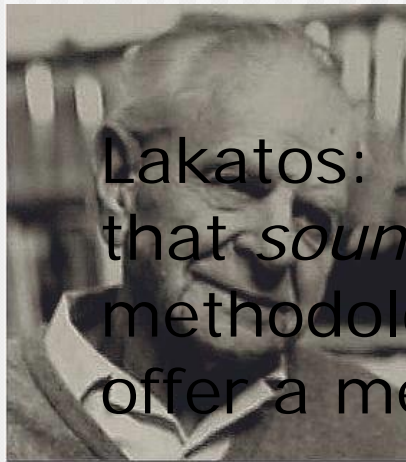
- 1) That science has found the correct *method* for achieving results
- 2) That there are many *results* to prove the excellence of the method



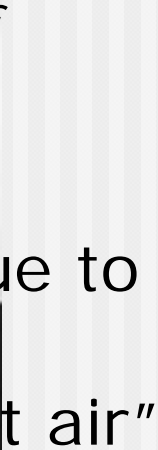
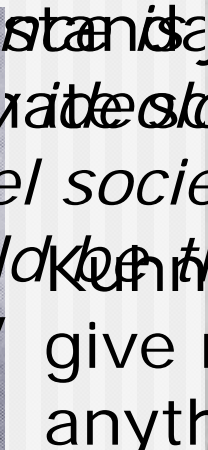
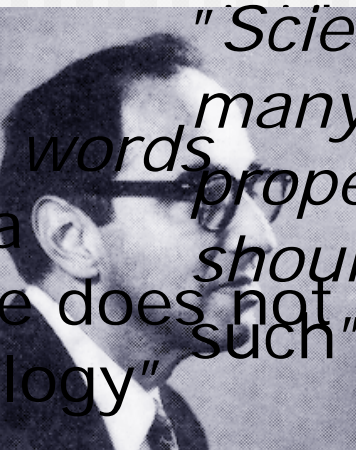
# Feyerabend's Argument

Feyerabend:

- 1) There is no such method
- 2) Only holds if it can be taken for granted that nothing else has produced results



Sir Karl Popper (1902-1994)



Lakatos: "offers words that sound like a methodology: he does not offer a methodology"

Popper

"Scientists are just one of many ideologies that propel society and it should be treated as such" Kuhn: "too vague to give rise to anything but hot air"

Chinese astronomy

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# "Anything Goes"

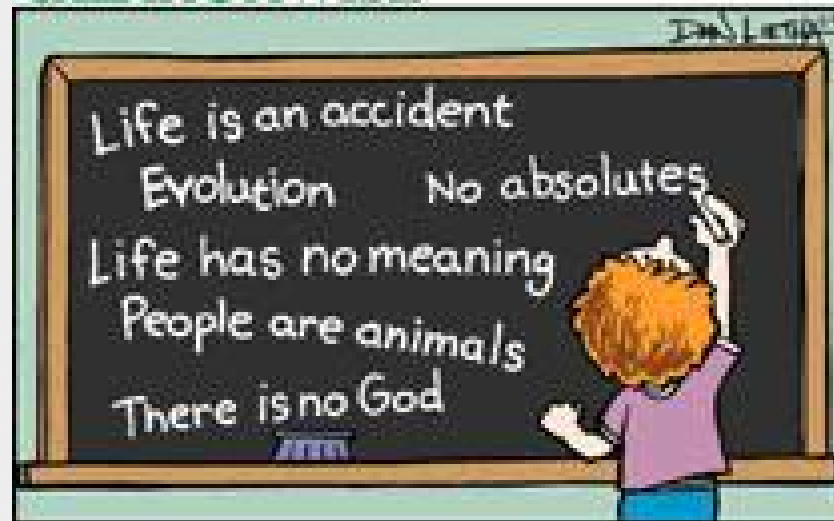
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- " A truth that reigns without checks and balances is a tyrant who must be overthrown, and any falsehood that can help us in the overthrow of this tyrant is to be welcomed"*
- "Three cheers to the fundamentalists of California who succeeded in having a dogmatic formulation of evolution removed from the textbooks and an account of Genesis included"*

# Science and Religion: Creationists

- deny that evolutionary theory is a science
- state that evolution is just a statement of faith
- suggest that evolution theory is less well supported by evidence as compared to other scientific theories

## CREATIONWISE



If THIS is what Johnny can read and write...



then this news shows that Johnny really understands his lessons!



# Darwin's theory of Evolution

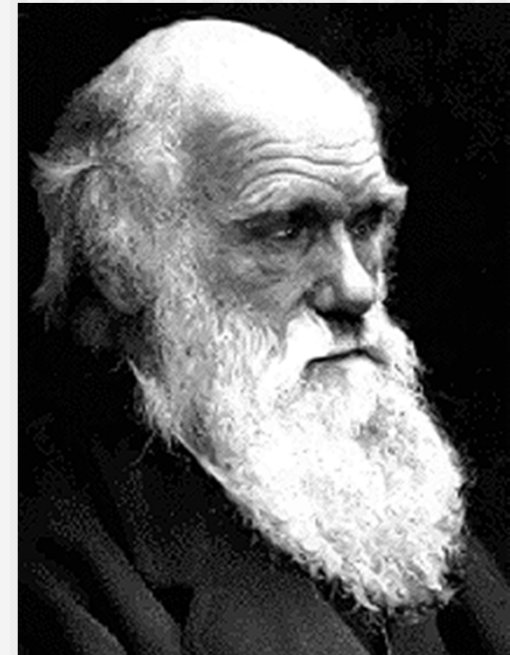
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Started his arguments from lawlike statements

- For any given species of organisms they will be found to have a tendency to increase their numbers at a geometrically high rate
- In each generation there is a differential reproduction of organisms
- The survival of the successful organisms is in part a function of the characteristics that they, unlike unsuccessful organisms, possess.

Then deduced that:

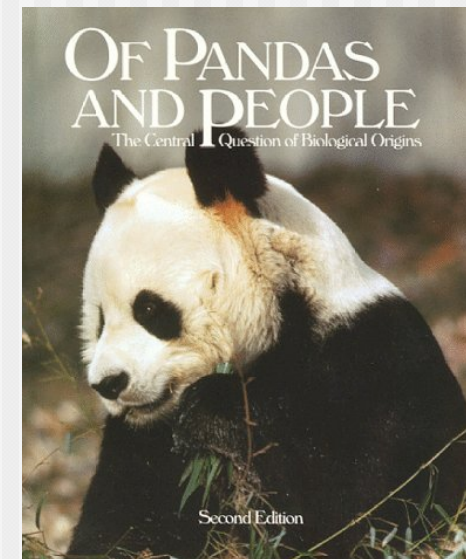
The different chances of survival of differently endowed offspring accounts for the natural evolution of species. Nature "selects" those members of a species best adapted to the environment in which they find themselves.



# Other cases

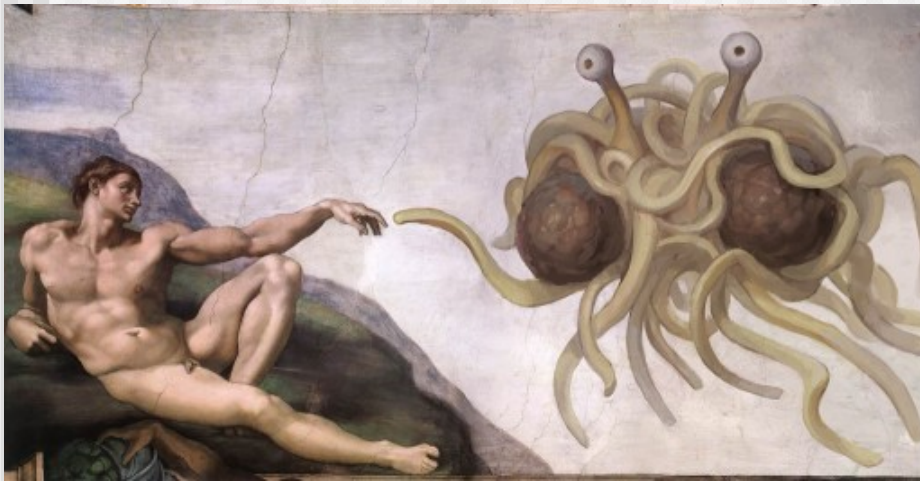
- *Kitzmiller and Dover* (2006). Judge Jones ruled that Dover school board's decisions to mention ID to ninth-grade biology students as an alternative to the Darwinian theory of evolution, and to refer students to the book *Of Pandas and People* as a reference source, was unconstitutional.
- In Georgia, 2005 a judge ordered a school district to remove stickers on textbooks that warned:

**"This textbook contains material on evolution. Evolution is a theory not a fact, regarding the origin of living things."**



# Intelligent Design

- Proponents assert that the workings of this planet are too complex to be ascribed to evolution. There must have been a designer working to a plan – that is, a creator



*Touched by His Noodly Appendage*  
Niklas Jansson (2005)  
Church of the Flying Spaghetti Monster



# Creationist Museums

**CREATION  
MUSEUM**  
Prepare to believe.



<http://creationmuseum.org>

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MNSES9100



## THE SCIENTIFIC METHOD

HERE ARE THE FACTS. WHAT CONCLUSIONS CAN WE DRAW FROM THEM?



## THE CREATIONIST METHOD

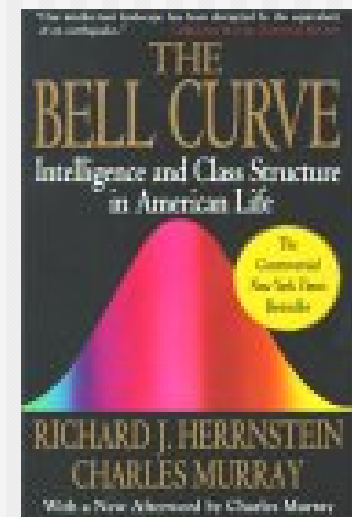
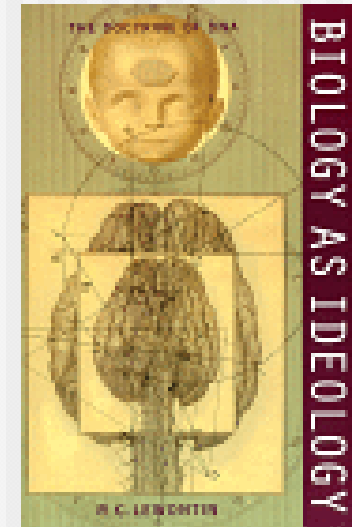
HERE'S THE CONCLUSION. WHAT FACTS CAN WE FIND TO SUPPORT IT?



# Other examples of ideologies?

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- Genetics and eugenics
- Genetic determinism:  
"nature vs nurture"
- Alternative medicine



Potential threats to scientific objectivity?

# Objectivity

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- Complicated by many definitions/antonyms
  - Ontological: Objective v. Subjective (existing independently of the scientist)
  - Epistemological: Objective v. False (truth, universality)
  - Methodological: Objective v. Biased/Value-laden (unbiased, without presupposition, non-ideological)

# Descriptive and Normative Statements

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- Descriptive ("is" statements): Describe states of affairs (As, Bs, Cs), explain how they are linked.
- Normative ("ought" statements): Some form of claim as to which state of affairs is "best" A, B or C; what the "goal" is. Advice on how one ought to go about getting to A, B or C. Most commonly, and controversially, taken to relate to morality or ideology.



# Descriptive and Normative Sciences

- Physiology and medicine
- Ecology and conservation biology
- Anthropology and sociology
- Nuclear physics and nuclear power development

