

# Lecture XIII

Sandy Berkovski

Department of Philosophy  
Bilkent University

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# Intelligent design: definition

- Individual intervention: each observable event is a direct result of God's intervention.
- Single intervention: God decrees laws that 'produce' individual processes.
- The difference can be paraphrased in terms of explanation.
- Intelligent design: each complex adaptation is a direct result of God's intervention.
- Theistic evolutionism: God decrees sets in motion evolutionary processes that are responsible for complex adaptations.
- Theistic evolutionism is a thesis about the origin of the universe, and is consistent with the atheist evolutionary theory.

## Background: Aquinas

- Darwinism does not dismiss the functionalist way of speech.
- So from the point of view of evolutionary biology, adaptations have certain functions.
- This is unlike natural science where teleology was dismissed.
- But we must distinguish, as Aquinas did not, between necessity and probability:
  - ① If a mindless system appears teleological, it must have been made by an intelligent designer. [Rejected]
  - ② If a mindless system appears teleological, it probably was made by an intelligent designer.

# Birth ratio

- Empirical evidence suggests that there are more boys than girls born every year.
- Chance: the probability that either a boy or a girl is born is  $1/2$ .
- $P(B > G|\text{Chance}) = P(G > B|\text{Chance}) \gg P(B = G|\text{Chance})$ .
- But  $P(B = G|\text{Chance})$  is very small.
- So  $P(B > G|\text{Chance}) \approx 1/2$  in every given year.
- So  $P(B > G|\text{Chance}) < (1/2)^n$  in  $n$  years.
- Therefore: it is by design that  $B > G$ .
- Therefore, also, polygamy is wrong.
- Fischer's explanation based on natural selection: boys tend to die sooner...

## Paley: watches, heath, eyes

- Suppose we I find a stone on the ground. Then one might well say it was there by accident (by chance).
- Suppose now I find a watch. Then it makes no sense to say it was there by chance. But why?
- Paley argues that we can perceive and understand the purposeful nature of the watch.
- Similarly, eyes have purposeful nature.
- Just like watches, eyes were planted by an intelligent designer.
- Sober: we must understand this argument probabilistically.

# Probability and likelihood

- $P(H|E)$ : posterior probability of  $H$ . That is, the probability of the hypothesis  $H$  given the evidence  $E$ .
- $P(E|H)$ : likelihood of  $H$ . That is, the probability of the evidence  $E$  given the hypothesis  $H$ .
- Bayes's Theorem:  $P(H|E) = \frac{P(H)P(E|H)}{P(E)}$ .
- We must formulate the claim that one hypothesis is probabilistically better than another.
- One way to do this:  $P(\text{ID}|O) \gg P(\text{Chance}|O)$ .
- But this involves assessing  $P(\text{ID})$  and  $P(\text{Chance})$ .
- Likelihood principle: Observation favours Intelligent Design over Chance if and only if  $P(O|\text{ID}) \gg P(O|\text{Chance})$ .

# Reactions

- 1 Modern science:  $P(O|\text{Darwin}) \gg P(O|\text{ID})$ .
- 2 Hume, Sober, Hoyle etc.: one conclusion is that there is *some* designer, another conclusion is that there is the *perfect* designer. Paley can only establish the first conclusion.
- 3 Creationism:  $P(O|\text{ID}) \gg P(O|\text{Darwin})$ .