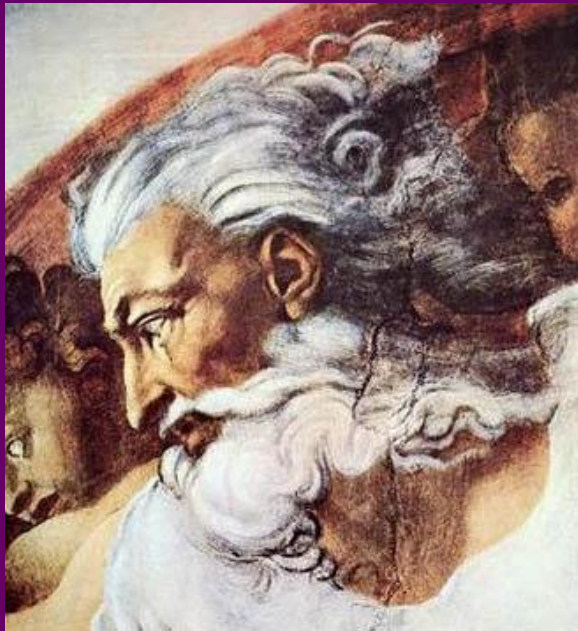




PHIL 101

Winter 2007



Self, World,

& God

Self, World, & God

The “Pretty Picture” of Science

- Insights and mischaracterized insights
- Logical positivism
- Contemporary philosophy of science
- The pretty picture
 - Observe the world
 - Ask questions
 - Formulate an hypothesis
 - Make an experimental prediction
 - Conduct the experiment
 - See what happens
 - Let the results decide the fate of the theory

Initial Data

- e₁. Childbed fever death rates in the First Division were significantly greater than in the Second Division.**
- e₂. Women who experienced "street birth" on the way to the First Division had lower death rate.**
- e₃. Priests had direct access to sick room in the Second Division.**
- e₄. Second Division was more overcrowded than the First.**
- e₅. The two divisions were virtually identical in terms of general care and diet.**
- e₆. Midwives in Second Division used same examination techniques as medical students in the First.**
- e₇. First Division deliveries were in the supine position, Second Division deliveries were lateral.**
- e₈. General care, diet, etc., were the same in both divisions.**

Preliminary Hypotheses

- t₁. Airborne transmission is the cause of childbed fever.**
- t₂. Overcrowding is the cause of childbed fever.**
- t₃. The "terrifying and deliberating effect" of the priest passing through the First Division was the cause of the disease.**
- t₄. Delivery in the supine position was the cause of the childbed fever epidemic in the First Division.**

New Data

Reconsider the old data – explanatory hurdles

New data (mini-experiments):

e₈. First Division deaths did not decrease by the change in the priest's behavior.

e₉. The change to lateral position delivery had no effect on death rate.

New Developments

Some accidental new data:

e_{10} . Circumstances and symptoms of colleague's death.

And a new hypothesis:

t_5 . The cause of the disease was the introduction of "cadaveric matter" into the bloodstream.

Experimental Design

- Pure research
- Control groups
- An immoral experiment
- The ethical problems
- The practical problems of the clinician
- Semmelweis's procedure

Putting the Theory to the Test

A compassionate order – wash your hands!

The “experiment”

The prediction

The results:

e_{11} . Following the order of washing in chlorinated lime after autopsies, the death rate fell dramatically.

More New Data, and a “New” Theory

The new data:

e_{12} . Details concerning cancerous examination.

And the new theory:

t_6 . Childbed fever was caused by "cadaveric matter" as well as "putrid matter derived from living organisms."

Some Morals

- **New data is always possible**
- **Sometimes the new data will hurt what used to be the “best” explanation**
- **Sometimes it will help what used to be the best explanation**
- **Good science, and well-designed experiments can be seen as systematic ways of uncovering new data**