

Warm-Up, September 3rd, 2024 (INTD262)

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1 Chapter 1 of *The Scientific Attitude*

1. Chapter 1 of *The Scientific Attitude*:

In 1981, the state of Arkansas passed Act 590, which required that public school teachers give “balanced treatment” to “creation science” and “evolution science” in the biology classroom ... [T]he curriculum was expected to concentrate only on the “scientific evidence” for creation science. But was there any? And, how precisely was creation science different from creationism?

Explain the arguments used in court to thwart Act 590 the following year.

2. Define the term *logical positivism* and give an example of how it is used in science.
3. Define the term *modus tollens* and give an example of how it is used in science.
4. Explain how *modus tollens* is used in the following logic: “If someone was born between 1945 and 1991, then they have Strontium-90 in their bones. Gabriel does not have Strontium-90 in his bones. Therefore, Gabriel was not born between 1945 and 1991.”
5. Thomas Kuhn wrote a famous book entitled *The Structure of Scientific Revolutions* (1962). Rather than describing science as a global accumulation of progress, he argues that, sociologically, scientists move between periods of “puzzle-solving” within an accepted framework and revolution triggered by unavoidable experimental anomalies. (a) Give one example of a scientific revolution, and note the anomaly. (b) Do you think that the colonization of Nueva España triggered a scientific revolution?