

# **Domains of Inquiry (An Instrumental Model) and the Theory of Evolution**

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# Why?

- What is science?
- How certain can we be of scientific theories?
- Why do so many academic areas claim to use the scientific method?
- Can life be studied strictly scientifically?
- Is a person more defined by mass than metaphysics?

# Objectives

- ① Introduce an Instrumental Model, **Domains of Inquiry**, a tool to understand how we come to our beliefs
- ② Explain some similarities and differences among the **Domains of Inquiry**
- ③ Argue that the **Theories of Evolution** and of **Climate Change** are not primarily scientific theories but historical theories
- ③ Assist in understanding personal beliefs

# Domains of Inquiry

## Definitions for Manipulating Activities

**Technology** -- Attempts to manipulate the natural (that which has mass)

**Religion** -- Attempts to manipulate the non-natural (that which does not have mass)

**Politics** -- Attempts to manipulate “what happens”

# Domains of Inquiry

## Definitions of Understanding Activities

**Science** -- Attempts to know and understand the natural (that which has mass)

**Metaphysics** -- Attempts to know and understand the non-natural (that which does not have mass)

**History** – Attempts to know and understand “what happened”

# Summary on Domains of Inquiry

<b>Technology – the attempt to manipulate the Natural</b>	<b>Religion – the attempt to manipulate the non-natural / Supernatural</b>	<b>Politics – the attempt to manipulate what happens</b>
<b>Manipulation Activities (above) are related to Understanding Activities (below)</b>		
<b>Science – the attempt to know and understand the Natural</b>	<b>Metaphysics – the attempt to know and understand the non-natural / Supernatural</b>	<b>History – the attempt to know and understand what happened</b>

# Inquiry Process

Common to all of the Domains of Inquiry

- **Personal Objectives /  
Domain Objectives**
- **Data Generation and Collection**
- **Analysis**
- **Prognostication**

# Data Acquisition

## Technology and Science

- Full-disclosure experiment (experimental data)
- Observation (forensic data)
- Replicable by someone who has the wherewithal and the expertise



# Data Acquisition

## Metaphysics, Religion, and Politics

- **Revered texts**
- **Tradition**
- **Experience**

# Data Acquisition

## History

- Primary Sources: Relics and documents from the time
- Secondary Sources: Identified (writer and date) reporting or analysis
- Tertiary Sources: Unidentified (writer and/or date) relic, reporting or analysis

# Data Acquisition

## Summary

- Technology and Science data are preferably collected by the replicable controlled experiment
- Religious, Metaphysical, and Political data are collected by personal experience (forensic data)
- History data are from personal experience or artifacts (forensic data)

**We respect Technology and Science data more because they can be repeated and are less influenced by the inquirer's objectives, and we can much more often predict what will happen**

# Analysis

**Abduction** – Infers the assumed from the observation  
Infers *a* (*assumption*), as an explanation of *b* (*observed*)

**Deduction** – Derives the conclusion from the  
**accepted** -- Derives *b* (*result*) from *a* (*accepted definition*)

**Induction** – Infers the conclusion from multiple  
**observations** -- Infers *a* (*result*), as an explanation of  
multiple *b*'s (*observed*)

**Statistics** -- Infers or discounts the assumed from  
multiple empirical observations analyzed with tested  
mathematical models

# Analysis Summary

**All Domains of Inquiry use all of the analytical tools**

**Induction is not the exclusive domain of science/technology**

**Classical Inductive Logic** was the act of moving from particulars to universals. **Deductive logic** was the act of moving from universals to particulars. **This did not change with the scientific revolution.**

# Prediction

## Science / Technology

- From established laws/observations – prediction has been quite effective
- From Hypotheses / Theories, prediction as a testing mechanism has been useful

Prediction is **usually** not part of metaphysics and history except on a superficial level

# Prediction

## Summary

**Science:** Often predictable – the data is usually consistent, the systems are simpler

**Metaphysics:** Unpredictable because data varies, the systems are complicated

**History:** Rarely predictable because the systems are complicated – too many variables, the individual players are not predictable, and the data is in question

## Domains of Inquiry and the Disciplines

- Astronomy, Chemistry, and Physics
- Meteorology
- Biology
- Social Studies
- Music, Philosophy and Theology
- Anthropology



# Chemistry, Physics, Astronomy

- Repeatable experiments
- Relatively simple systems
- Good record of prediction

Some historical data in astronomy

# Meteorology

- Developed methods for predicting the tides
- Weather prediction is a somewhat successful

## Climate Change is a different matter

- The evidence is forensic – there are no replicable experiments
- The reality is more complex than the model -- unpredictable events affect the outcome
- Issues have become politicized

**Climate Change Theory is primarily historical, and predicting Climate Change is prophesying**

# Evolution

## Complexity

- Complex because it encompasses many ideas
- Different people select different sets of the ideas of Evolution
- The data supporting the Theories of Evolution are forensic
- The Theories of Evolution are not primarily Scientific theories, they are **Historical theories**

# Biology

Originally, biology was focused upon the discovery, classification, and structure of living things

- The discovery and description of organisms provided us with an enormous catalogue of forensic data
- The development of systems for classification is both metaphysical and scientific
- Cell Biology has become more scientific as replicable experimentation expands
- Behavioral biology – the data is not replicable

# Social Studies

With sociology and psychology we discover problems that arise when we study people

- People have different tendencies that derive from both inheritance and environment
- People have histories – both the person(s) collecting the data and the collectee

# Music, Philosophy and Theology

The metaphysical domain dominates:

- All of these disciplines are primarily abstract, they deal with ideas (e.g. Theory of Forms) or abstract expressions (e.g. Beethoven's Fifth)
- Those who participate in these abstractions come away with different responses
- Lots of data, but multiple and competing perceptions

# Anthropology

- Anthropology encompasses all the domains
- How does one analyze and understand a 2000 year old culture?
- How to understand an ancient civilization from our 21<sup>st</sup> Century perspective?

# So what are we?

- Are we made in the image of God?
- What does that mean?
- We, too are creators -- the history and metaphysics are ours
- Yes we have mass, we do get energy from chemical reactions
- But our ideas and metaphysical constructs are powerful.