

# What Is Information and Where Does It Come From?

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# Objectives of This Talk

- ▶ To assess the claims of “information apologetics”
- ▶ To seek clues to the origin of life

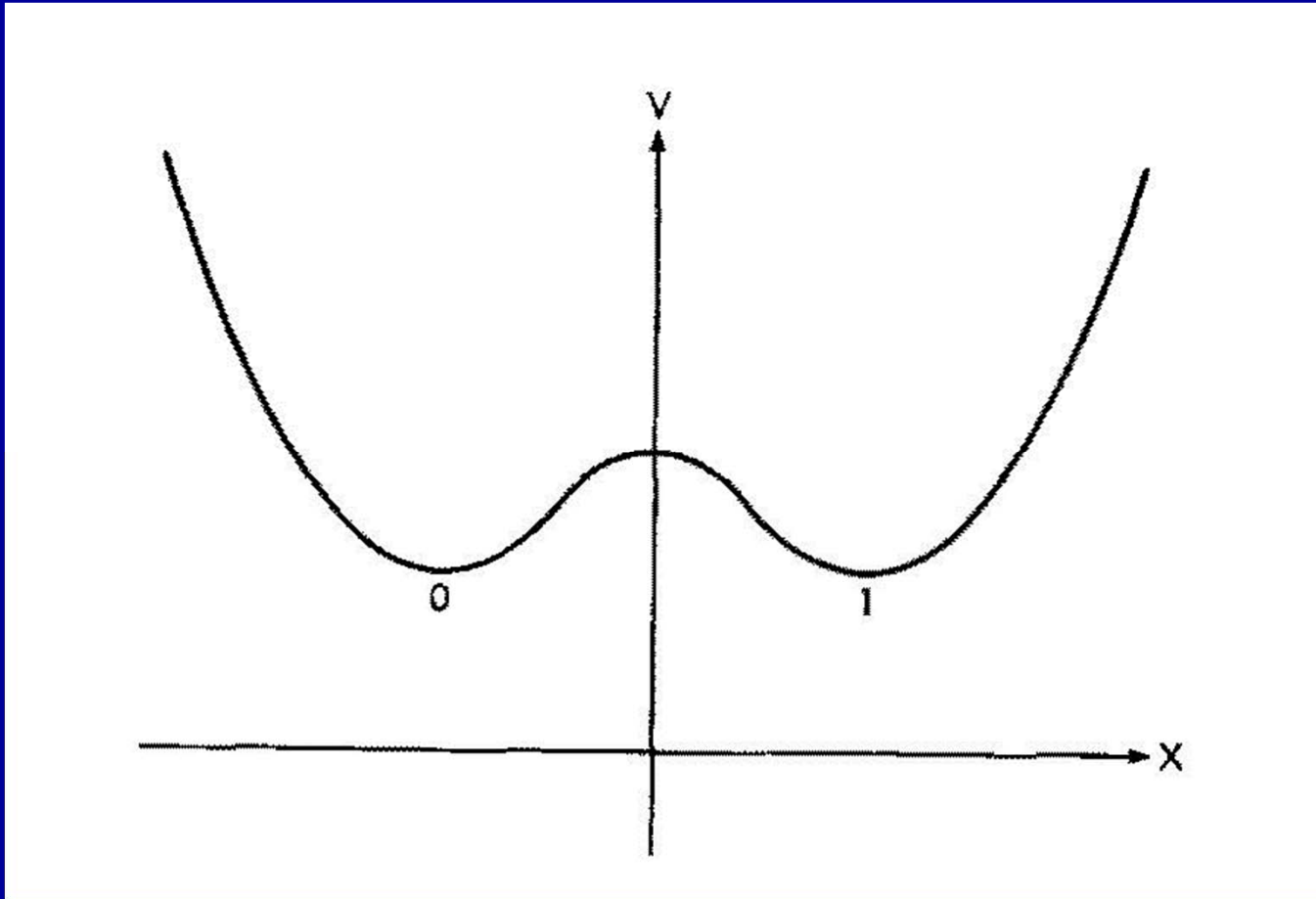
# What Is Information Apologetics?

- ▶ An argument based on information for the role of an intelligent agent in the origin of life
- ▶ Syllogism in simplest form:
  - ▶ Information must come from a mind
  - ▶ DNA is information
  - ▶ Therefore, DNA comes from a mind

# INFORMATION THEORY

- ▶ What is information?
  - ▶ Anything that could be different
  - ▶ “... whatever is capable of a competent Difference, perceptible to any Sense, may be a sufficient Means whereby to express the Cogitations.” John Wilkins, 1641

# BISTABLE POTENTIAL WELL

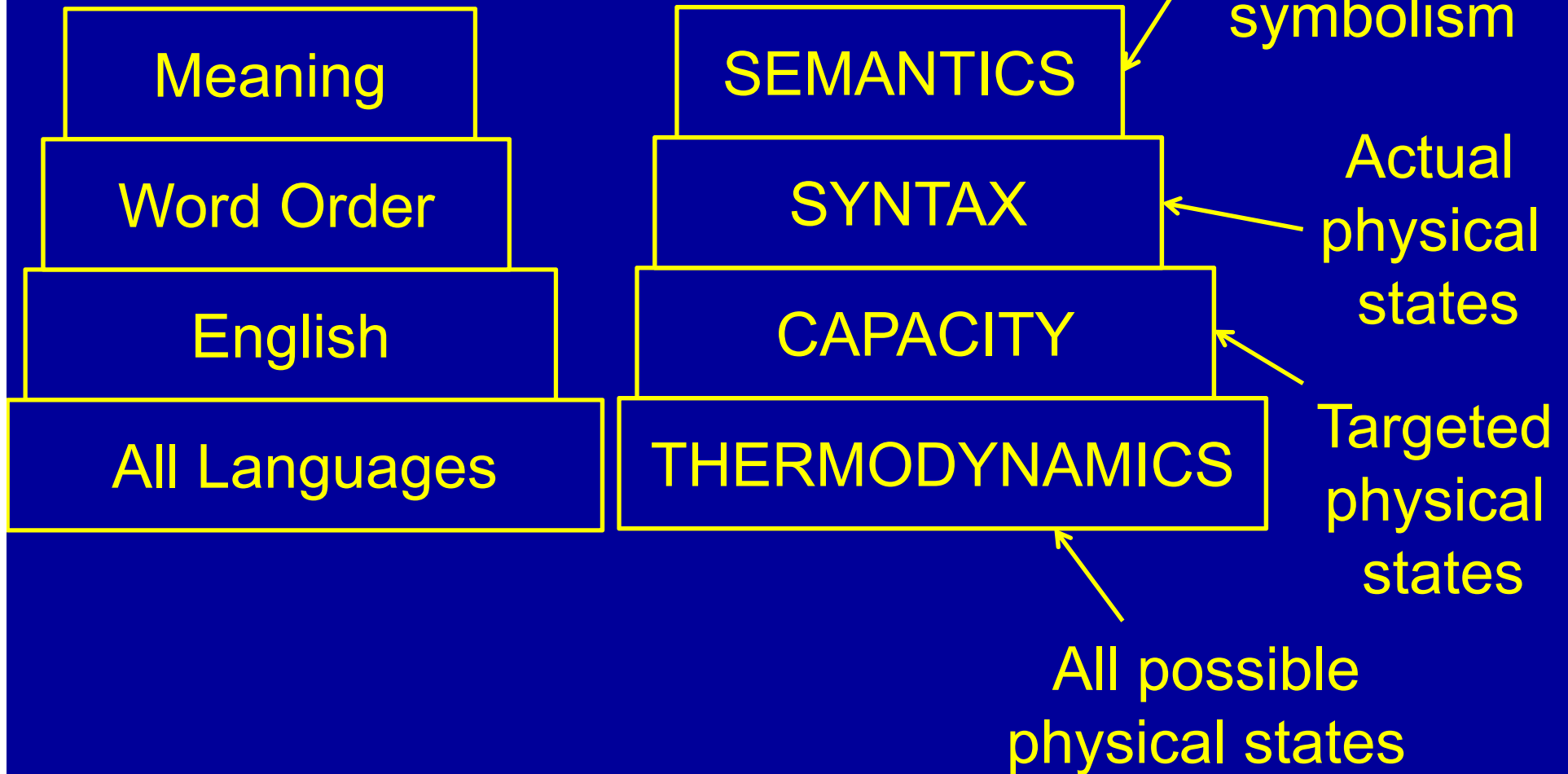


$x$  is a generalized coordinate representing quantity which is switched

From Landauer with permission (Landauer 1961)

# CATEGORIES OF INFORMATION

## Linguistic example



# ORIGIN OF INFORMATION

- ▶ Thermodynamics/Cosmology
  - ▶ Quantum fluctuations
  - ▶ Information is conserved like energy/entropy
- ▶ Capacity
  - ▶ Selection of Information-Bearing Degrees of Freedom (IBDOF)
  - ▶ Selected by intelligent beings or by nature
- ▶ Syntax
  - ▶ Individual bits set by intelligent beings or by nature
  - ▶ **What or who determines the sequence of bits?**
- ▶ Semantics
  - ▶ **What or who determines the meaning of the bits?**

# WHAT IS THE ROLE OF THE MIND?

- ▶ **Intelligence:** ...aptitude in grasping truths, relationships, facts, meanings, etc. (World Dictionary)
  - ▶ In other words, capable of establishing and perceiving abstract relationships
- ▶ Abstract relationships require a mind
- ▶ Physical properties/chemical reactions do not require a mind



# EXAMPLES OF INFORMATION

English Language

GGGGGQ

MKARRE

REMARK



# CHARACTERISTICS OF DNA INFORMATION

- ▶ DNA functionality is physical/chemical
  - ▶ Reproductive success depends on biochemical function based on the DNA information and the environment
  - ▶ A mind is not necessary to determine proper sequence
- ▶ DNA functionality is highly complex
  - ▶ Depends on the environment which may not be known at the time of formation
  - ▶ A mind may not be adequate to determine the proper DNA sequence
- ▶ **Diversity** around a probable solution is necessary
  - ▶ Most probable solution is an exact copy of the DNA

# Is Information Apologetics Valid?

- ▶ Must DNA information come from a mind?
  - ▶ Not necessarily
    - ▶ Most information in the universe does not require a mind
    - ▶ Inductive arguments from human-designed information systems do not provide a compelling link to DNA
  - ▶ Analogy between human-designed information systems and DNA information is inadequate to support a common origin
    - ▶ DNA functionality is physical/chemical and not abstract
    - ▶ DNA functionality is far more complex

# Clues From Information to The Origin of Life

- ▶ Observations show that DNA information is generated by replication with variation
- ▶ Basic mechanisms of replication with variation occur in both biological and nonbiological systems
- ▶ Inference to the best place to search for the origin of life is a network of self-replicating, mutually catalytic molecules

# God Created And Sustains All Things

- ▶ The entire universe displays the glory of God and his creation
- ▶ God's creation is far greater than we can comprehend
- ▶ The inference to the best explanation is that God created and sustains nature to design all things