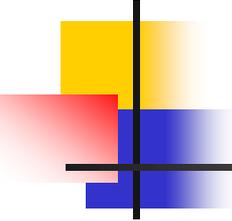


Whither IS? A Scientific Realist Viewpoint

Deepak Khazanchi

University of Nebraska at Omaha

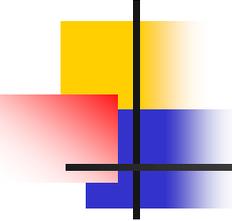




Fundamental Questions?

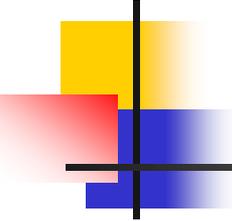
“To say that truth is no part of the aim of science is on a par with saying that cure is no part of the aim of medicine or that profit is no part of the aim of commerce”... John N. Watkins

- How does science (and scientific inquiry) progress?
 - Is IS a science? How does (or should) IS progress?
 - Is observation in any sense foundational in science?
 - Are theories generated from or determined by evidence?
 - Is rational justification of knowledge claims possible?
 - Is justification necessarily relative to a framework?
 - What is the role of objectivity and truth in scientific progress?



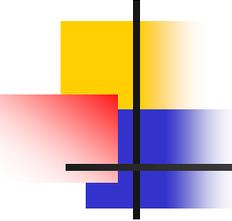
Modern Realism

- Modern Realism
 - Stems from the classical realism of Bertland Russell and others
 - The world exists independently of its being perceived and there is a difference between the world and our view of it
 - Rejects Hegelian idealism as self-refuting, sophist rather than genuine belief, confuses the act of perceiving an object with the object so perceived, violating the fundamental principles of intellectual discourse
 - Modern realism or “Scientific Realism” is associated with authors such as Maxwell, McMullin, Bhaskar, Levin, and others.



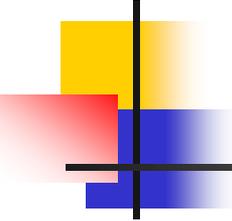
Scientific Realism

- Fundamental Thesis:
 - *The long-term success of a theory gives reason to believe that something like the entities and structure postulated by the theory actually exists*
 - “Objects” in the broadest sense exist independent of our beliefs and theories about them
 - SR is a potential middle ground among various philosophical tenets and is somewhere between “naive realism” (absolutism) and “relativism/intepretivism/constructivism”
 - Distinguishes between discovery of theories (“context of discovery”) and their justification (“context of justification”)
 - There is no single logic of discovery
 - There does exist a single logic of justification which is common to all science
 - However, a variety of tools and techniques could be used for justification.



Characteristics of SR...

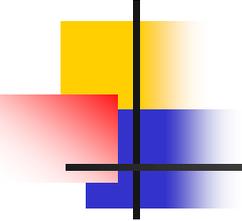
- Scientific inquiry is objective and rational
 - SR recognizes that science has been enormously successful over the last 400+ years.
 - Science does make progress (more on this later) and scientific knowledge is cumulative
- Our theories of reality are “fallible” and need to be revised
 - The belief that “something like” the entities and structure postulated by a scientific theory exists (“approximation of the truth”)
 - Scientific theories do not determine reality (as in relativist philosophies), rather make genuine discoveries about them



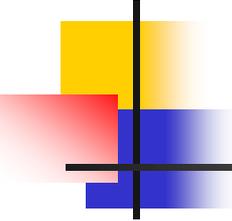
Characteristics of SR...

- Context of Justification (Epistemology)
 - The *pragmatic* success (failure) involved in the use of the theory warrants the belief (disbelief) in the truth of the theory.
 - Objective “warranties” for knowledge claims are obtainable through critical evaluation and “empirically testing” of theories
 - “Intersubjective certifiability”
 - Supports the scientific method for justification of knowledge claims but admits
 - that our tools, techniques and measurements are also “fallible”

How does science progress?...

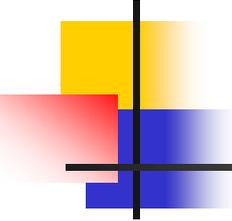


- In general, SR holds that science does progress by means of four key procedures:
 - The development of new theories
 - The falsification of existing theories
 - The expansion of the scope of theories and
 - The reduction of specific theories into more general theories



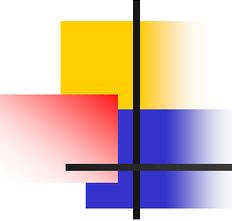
How does science progress?...

- In particular, SR maintains that science progresses by:
 - Discovering new entities
 - “If one does not have ‘good reason’ to believe that the entities in one’s theory exist, why engage in a search for them?”
 - Generating better descriptions of the attributes and characteristics of entities postulated in theories
 - Measuring entities better
 - One has to believe that “something like” the entities actually exists, otherwise measures of nonexisting entities would be irrational
 - Measures of constructs are reflective in nature vs. formative (“operational definitions”) as in logical positivism and logical empiricism e.g., measuring behavioral intention, IQ reflect the “unobservable” entity and not “define” it.
 - Discovering the *structure* of the relationship among entities, particularly causal relationships.



Implications for IS?

- What are the implications of SR in IS?
- What is the alternative? Compare SR with
 - A relativist, antirealist ideal (as in Interpretivism) whose axioms include:
 - Realities are multiple, constructed, and holistic
 - Knower and known are interactive, inseparable
 - Only ideographic (time and context-bound) hypothesis are possible
 - It is impossible to distinguish cause from effects
 - Inquiry is value-bound
 - Knowledge-claims of theories are relative to their respective philosophical frameworks, thus
 - One cannot evaluate knowledge claims from competing theories objectively, impartially because we lack “supracriterion” for such comparisons.



Discussion/Ideas?



- Thanks!!

“Science has not the monopoly of truth but only the monopoly of the means for checking truth and enhancing it.”