

THEORIES VS. METHODS IN MANAGEMENT SCIENCE

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Questions about systems science

- Is knowledge in systems science different from knowledge in other scientific fields?
- If it is different, how is it different?
- Is systems science a revolution in one or more sciences, a new domain of inquiry, or a new type of inquiry, lying perhaps between mathematics and the sciences?

Two conceptions of how to structure knowledge

- Most philosophers of science
- Cause and effect
- If A, then B
- Analysis
- Reductionism
- Theory
- E.A. Singer, Jr., Churchman, Ackoff
- Producer - product
- What is needed
- Synthesis
- Expansionism
- Method

Science one vs. science two

- Observation
- Description
- Test knowledge
- Extrapolate/ forecast
- Accuracy/ precision
- Participation
- Prescription
- Achieve agreement
- Create/ design
- Usefulness

Science One vs. Science Two

- Cause and effect
- Theories
- Observer is outside the system observed
- If-then
- Reductionism
- Analysis
- Producer-product
- Methods
- Observer is part of the system observed
- Necessary conditions
- Expansionism
- Synthesis

Science One vs. Science Two

- Observation
- Description
- Reliability of knowledge
- Forecast
- Reproducibility
- Participation
- Prescription
- Agreement or acceptance
- Create or design
- Usefulness

Two strategies for building knowledge

- Accumulation
- More theories
- More abstract theories
- Separate disciplinary languages
- Administrative barriers between fields
- Disciplines remain separate
- Integration
- Add a dimension (CP)
- Revise the philosophy of science
- A common language
- Show similarities among fields
- Work together

Why methods tend to lead to integration

- Unlike academics managers are more likely to be generalists than specialists
- Managers focus on getting things done rather than developing ideas
- Ideas used in management need to be shared with subordinates

Three types of knowledge

- Law
- Science
- Management

Law

- Lawyers and legislators generally have a legal background
- Experience is codified in laws and court judgments
- Laws and precedents result from elections, legislation, and court appeals
- Purpose is to achieve political stability and
- Protect human rights

Law (continued)

- People are expected to obey laws. Laws are enforced by the police and courts
- A body of laws, procedures, and judicial interpretations assure political stability
- Laws are changed through the political process
- Laws are obeyed partly out of desire for a stable society and partly fear of punishment

Science

- Scientists are highly educated. They have special training
- Knowledge is codified in the form of theories
- The purpose is to describe how the world works
- Knowledge is preserved in scientific literature and taught in science courses

Science (continued)

- Theories are steps in an endless search for truth
- Theories change through testing, experimentation, and invention
- Theories are accepted tentatively as the best available explanation of observations

Management

- Managers sometimes have education in management. They need leadership skills
- Knowledge is embodied in the form of methods
- Knowledge is developed through experience and consulting practice
- The purpose is to help people work together to achieve common goals

Management (continued)

- Methods are learned and passed on by using them
- Methods aid coordination, production of goods, and conflict resolution
- Methods change through imitation, experimentation, and innovation
- Methods are accepted as a means to improve group performance