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