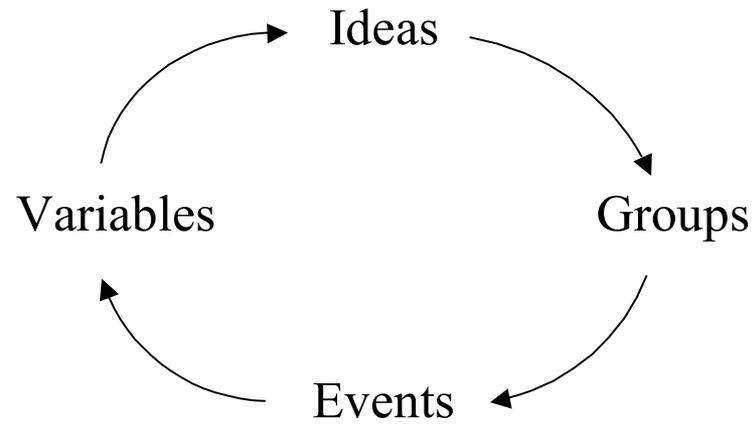


Quadrant Diagrams, Levels of
Conceptualization and
Requisite Variety

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A model of social change using four methods for describing systems

Designing conceptual systems

- Architecture students are taught to “think with your pencil”
- If one wants to design theories, philosophies, or social movements, how does one “think with one’s pencil”?
- Quadrant diagrams are one possibility

The purposes of quadrant diagrams

- Bring order to a variety of points of view
- Compare personalities, fields of study, cultures, policies, strategies
- Show how organizations or countries or fields of study change
- Add a new dimension to a previous analysis

Rules for making quadrant diagrams

- To conform with common time series graphs, put earlier positions in the lower left quadrant and later positions in the upper right quadrant
- To conform with an optimistic outlook, put less desirable conditions in the lower left quadrant and more desirable conditions in the upper right quadrant

Quadrant diagrams as a way of
clarifying a variety of positions

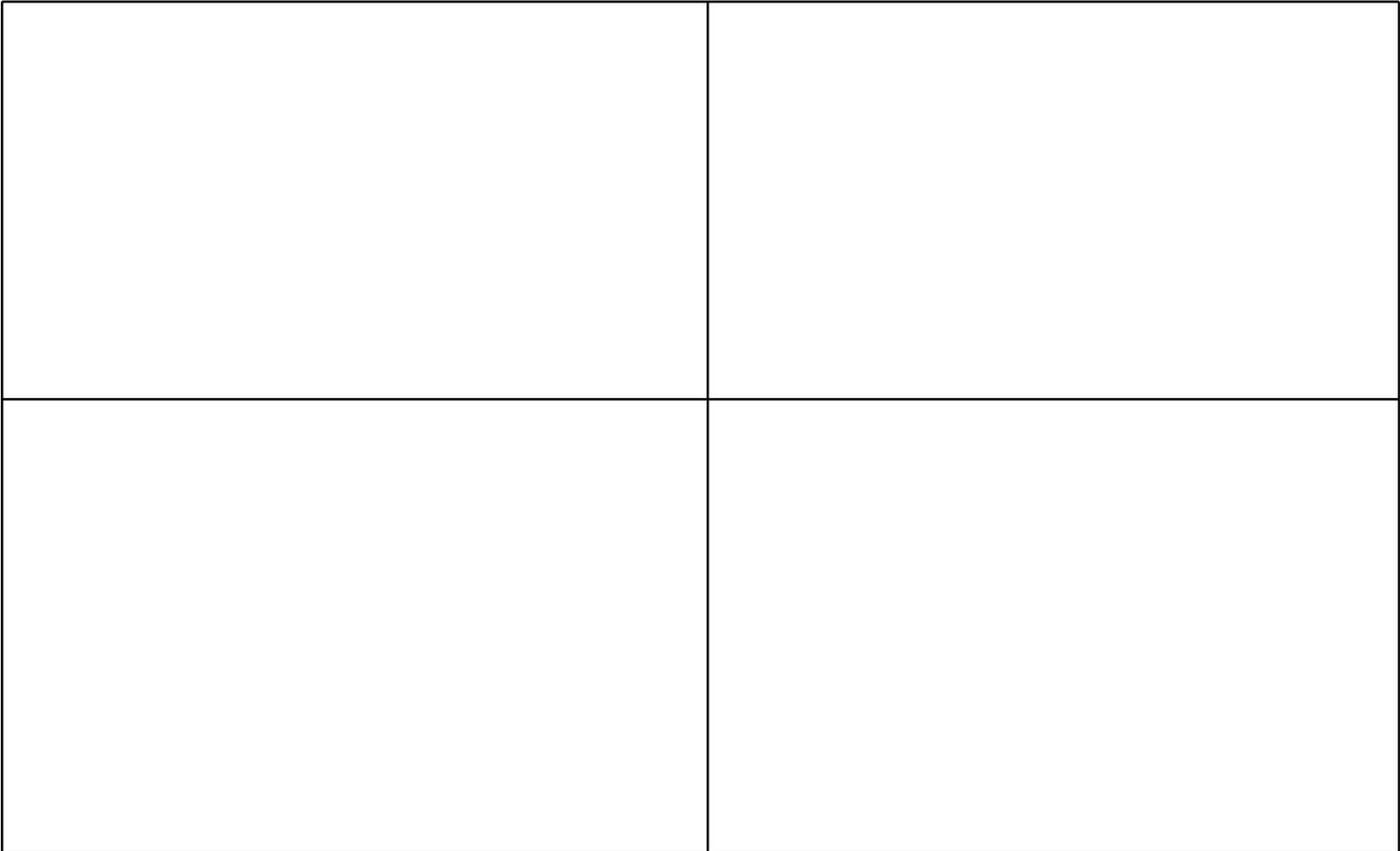
Technology is good	engineers	advocates of planning via networked computers
Technology is bad	political scientists	left wing campus activists

Participation is bad

Participation is good

Attitudes toward participation in planning

Quadrant diagrams in the field of management and business



Low people orientation

High people orientation

The “managerial grid”

Independent activities	Competition	Cooperation
Interdependent activities	Conflict	Collaboration

Negative sum

Positive sum

Working relationship taxonomy, Turner

Task
oriented

guided missile

Eiffel Tower

Growth
oriented

incubator

family

Heterarchy

Hierarchy

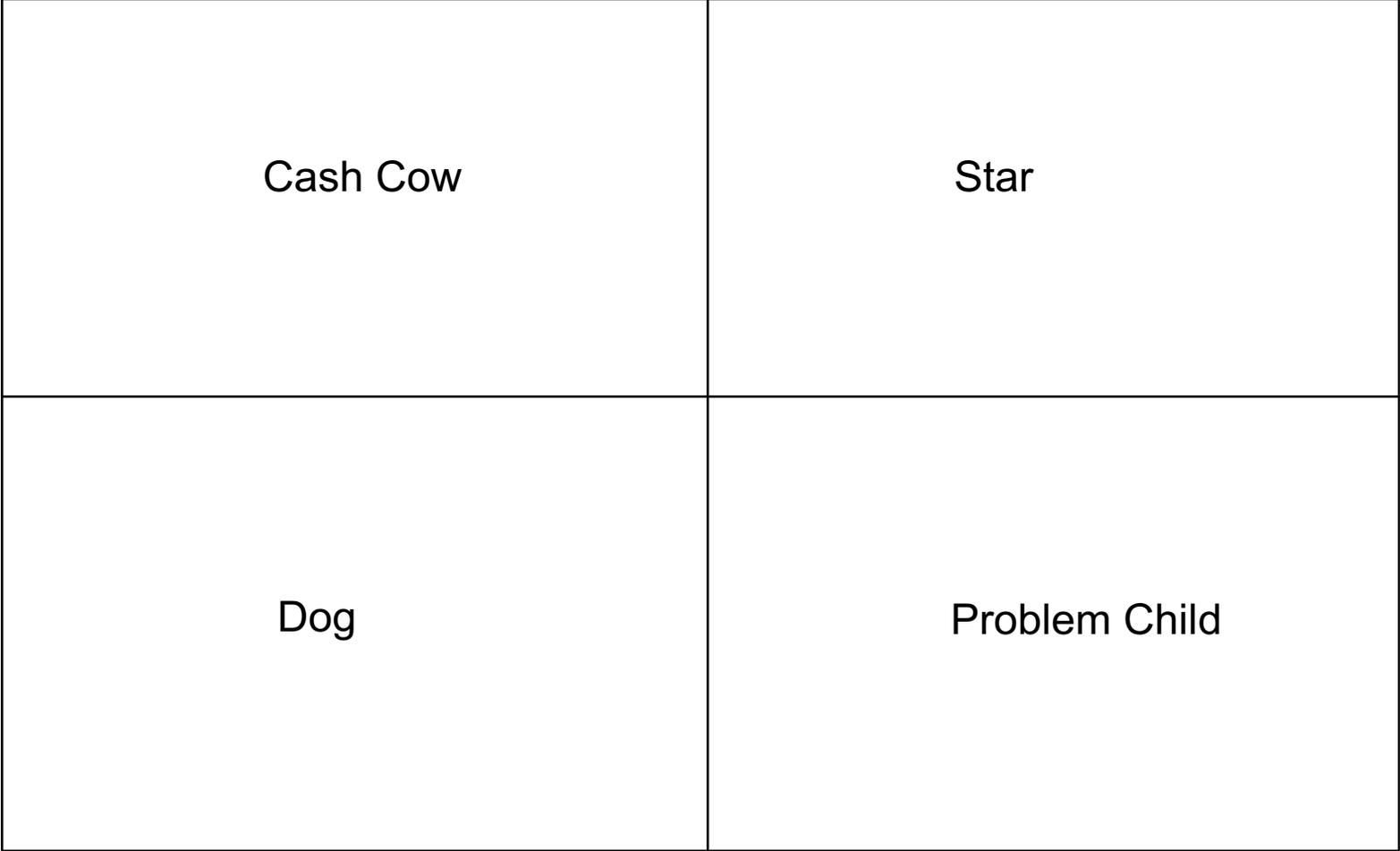
A taxonomy of corporate cultures

Distributed facilities	Transnational firms	Multinational firms
One, central location	Global firms	International firms

Single market

Multiple markets

Approaches to international management, Miroshnik



Low Growth

High Growth

Boston Consulting Group portfolio management

Growth
companies

Value
companies

Low capitalization

High capitalization

Financial portfolio management

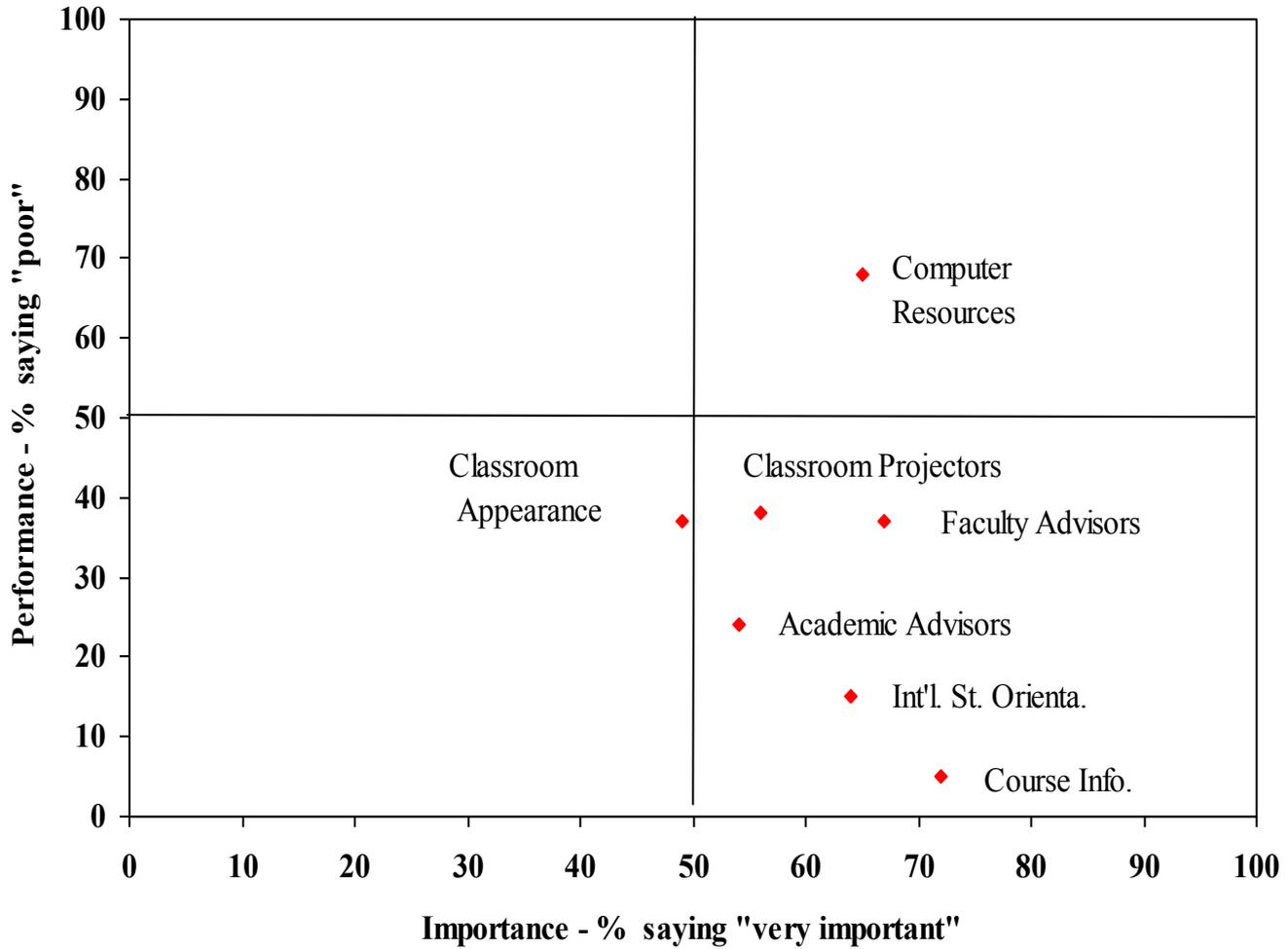
High complexity	Normal accidents
Low complexity	

Few connections

Many connections

The causes of “normal accidents”

Quality Improvement Priority Matrix



Quadrant diagrams in the field of futures research and forecasting

Low y2k impact	Let the long boom roll	From out of the ball park
High y2k impact	Y2k whammy	Double whammy

No major economic calamity or terrorist event

Major economic calamity or terrorist event

Possible y2k outcomes, Marien

Isolated Failure	Don't worry, be happy	Egg-on-face false alarm
Widespread Multiple Failures	Big blame game begins	We did our best

Intense but isolated efforts of
business and government

Major, globally
coordinated mobilization

Possible Y2K actions and outcomes, Marien

Isolated failures	Fire in the theater	Official future
Interdependent failures	Millennial collapse	Community and human spirit

Social chaos

Social cohesion

Social response to y2k outcomes, Carmichael

Nature of possible understanding of system

Stand outside system Through Interactions of agents

Emergence

Design

**MATHEMATICAL
COMPLEXITY**

Agent Modeling

Interactive Scenarios

Structural Analysis

Field Anomaly Relaxation

Decision Modeling

**SOCIAL
COMPLEXITY**

Causal Layered Analysis

**ENGINEERING
APPROACHES**

Relevance Trees

Cross-Impact Analysis

Technology Sequence Analysis

Statistical Modeling

Strategic Analysis Tools

Text Mining

Environmental Scanning Normative Forecasting

**SYSTEMS
THINKING**

Trend Impact Analysis

Multiple Perspectives Concept

Simulation and Games

Rules

Remove ambiguity

Heuristics

Allow ambiguity

Means of controlling or directing system

Organizing Futures Research Methods

Quadrant diagrams in sociology and political science

Sociology of radical change

Radical humanist

Radical structuralist

Sociology of regulation

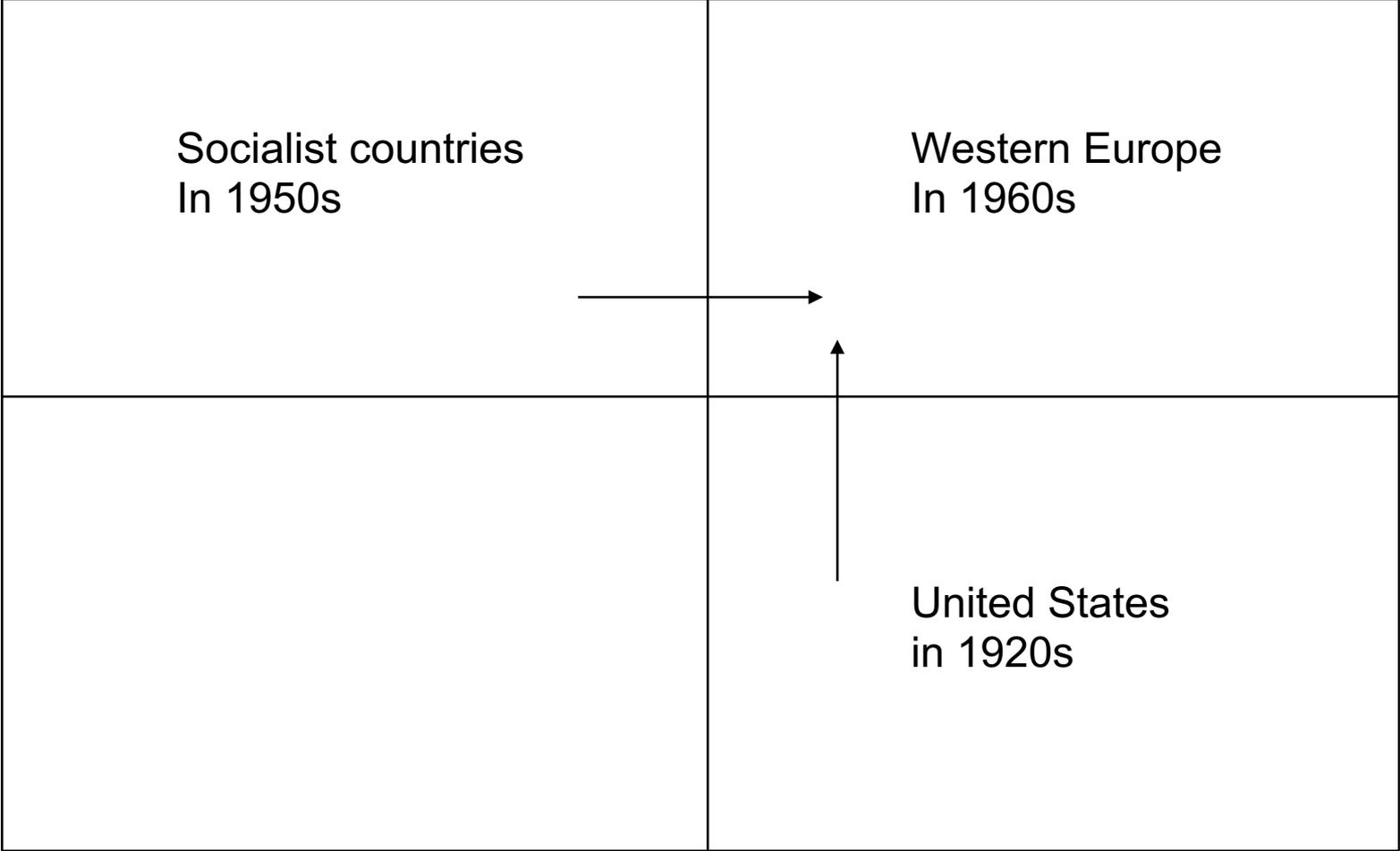
Interpretive

Functionalist

Subjective

Objective

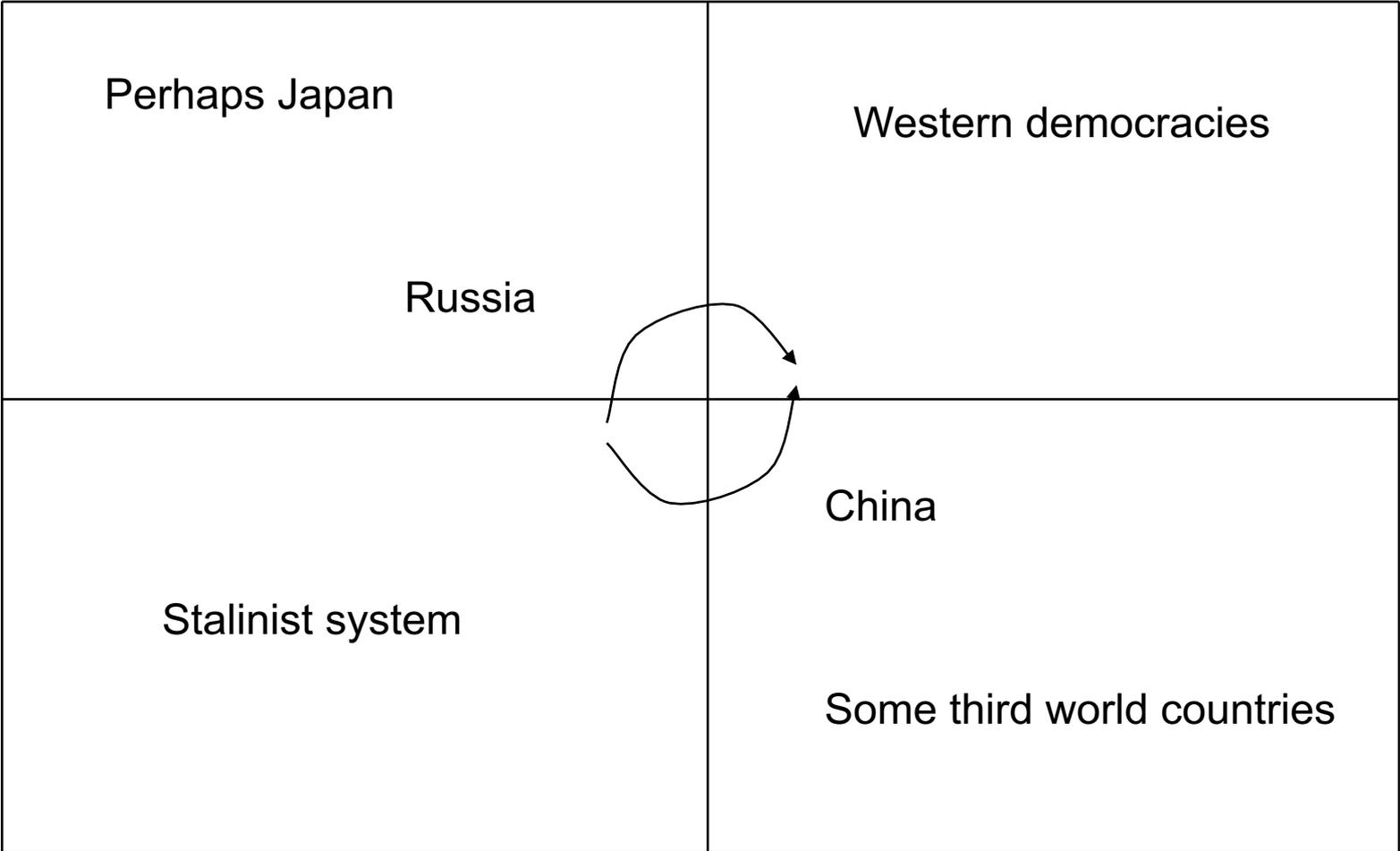
Four paradigms of social theory, Burrell and Morgan



Central planning

Free markets

Convergence of capitalist and socialist societies



Perhaps Japan

Western democracies

Democracy

Russia

China

Totalitarianism

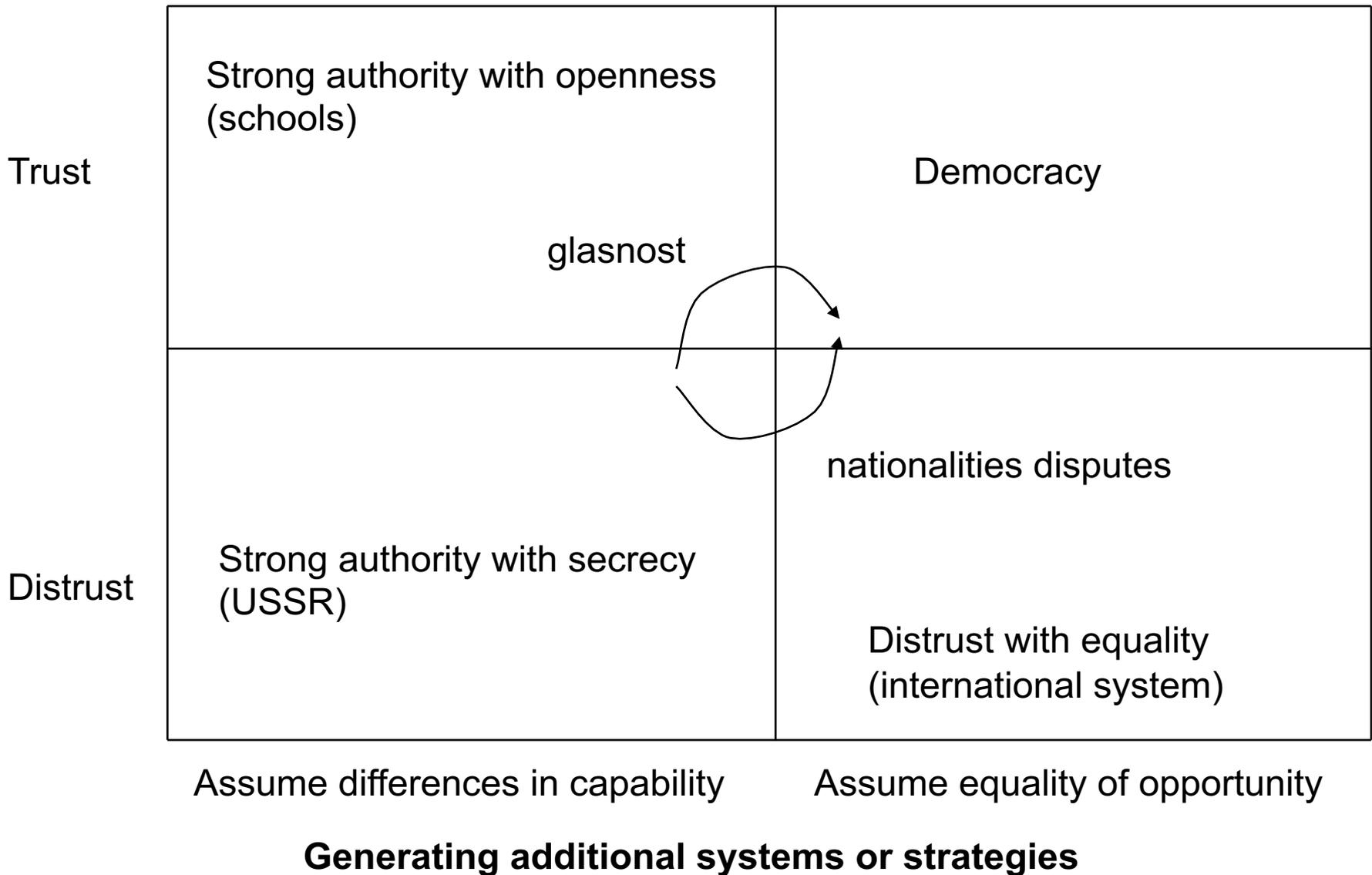
Stalinist system

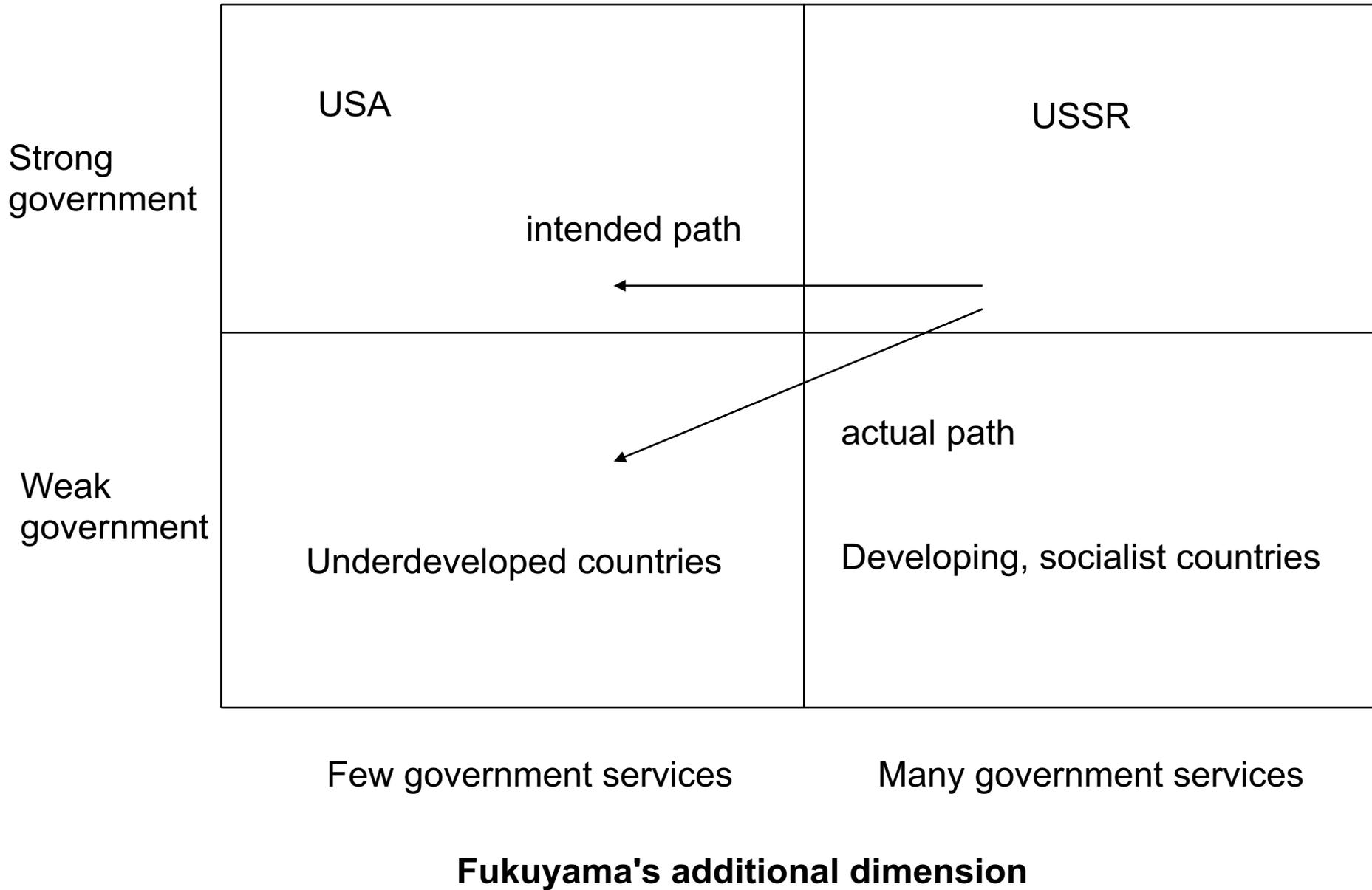
Some third world countries

Central planning

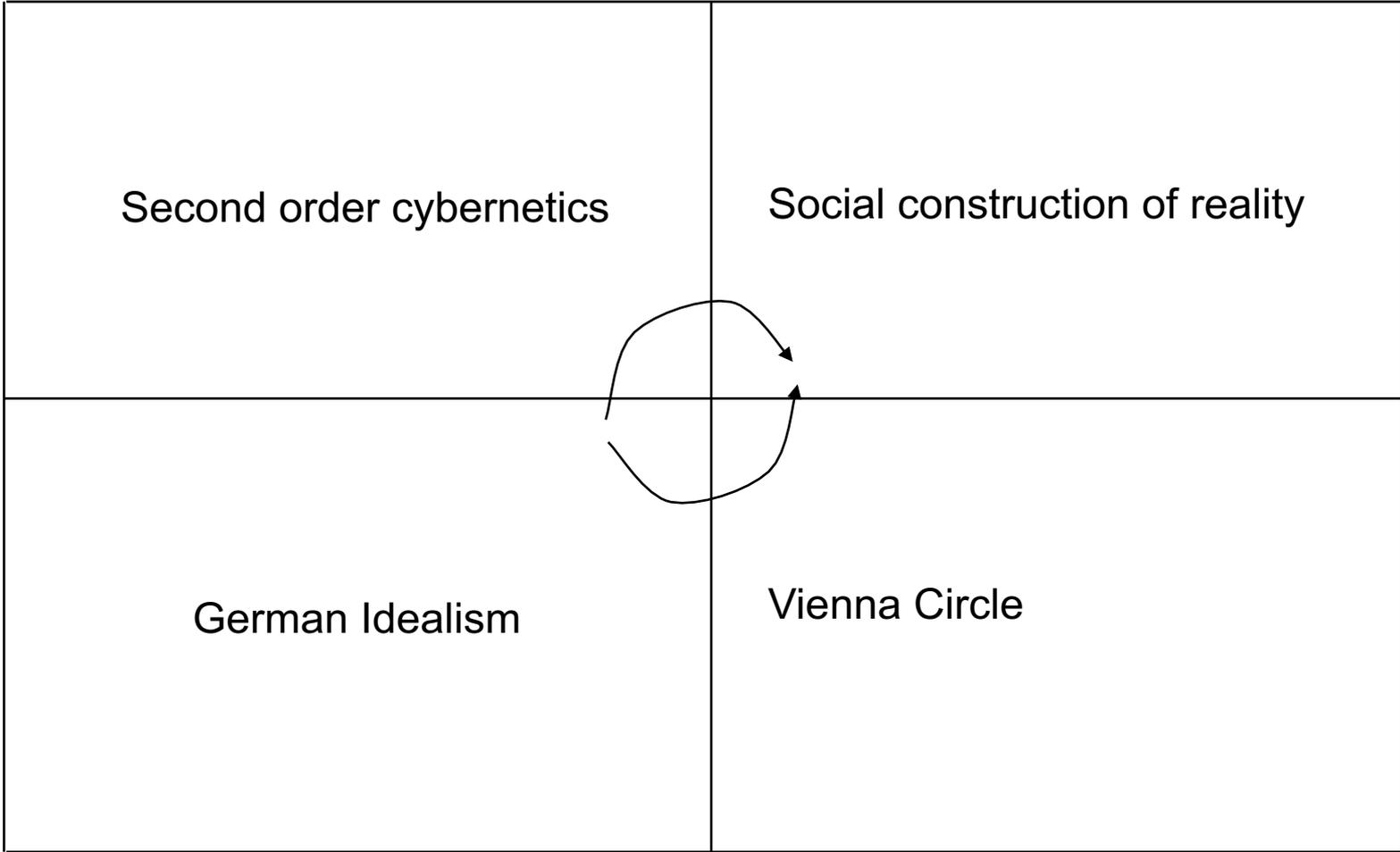
Free markets

Two paths toward a mixed economy





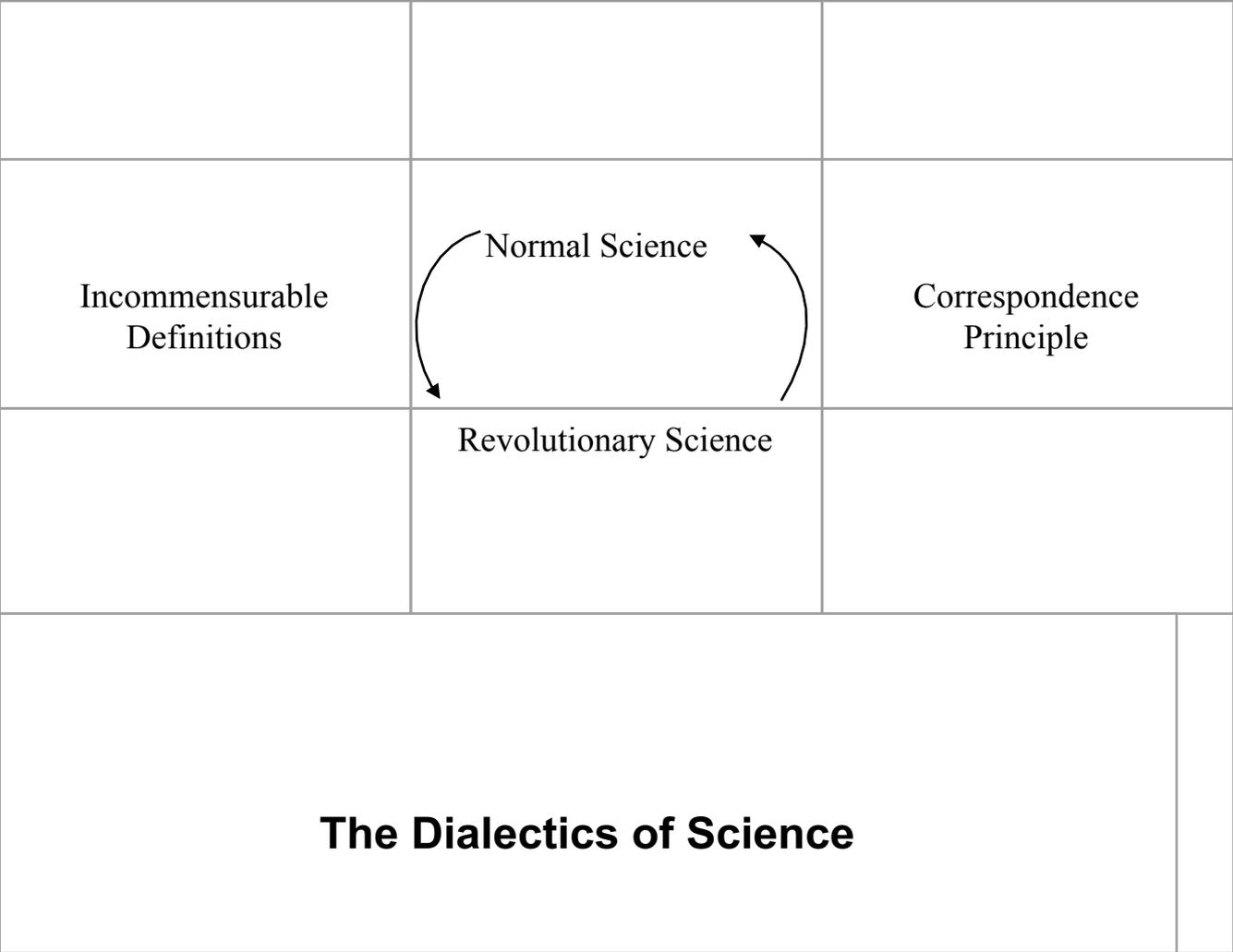
Quadrant diagrams in
understanding the evolution of
science



Knowledge as an individual activity

Knowledge as an group activity

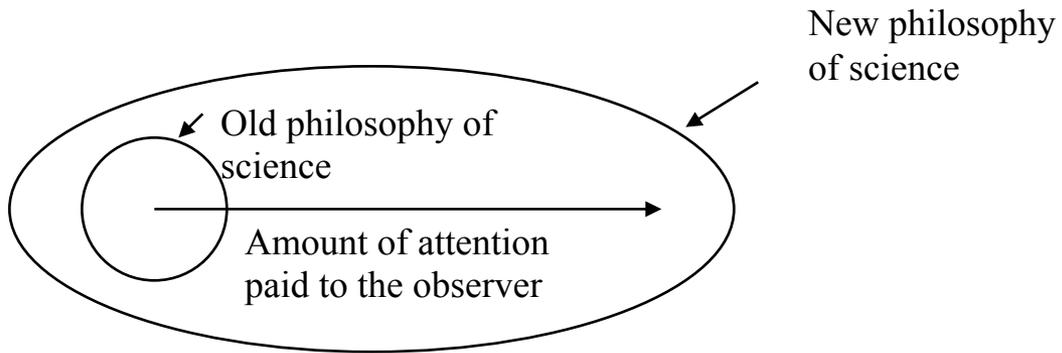
Two Paths to a Similar Outcome



Author	First Order Cybernetics	Second Order Cybernetics
<p>Von Foerster</p> <p>Pask</p> <p>Varela</p> <p>Umpleby</p> <p>Umpleby</p>	<p>The cybernetics of observed systems</p> <p>The purpose of a model</p> <p>Controlled systems</p> <p>Interaction among the variables in a system</p> <p>Theories of social systems</p>	<p>The cybernetics of observing systems</p> <p>The purpose of a modeler</p> <p>Autonomous systems</p> <p>Interaction between observer and observed</p> <p>Theories of the interaction between ideas and society</p>
<p align="center">Definitions of First and Second Order Cybernetics (An example of incommensurable definitions)</p>		

The Correspondence Principle

- Every new theory should reduce to the old theory to which it corresponds for those cases in which the old theory is known to hold
- All the evidence that supported the old theory also supports the new theory
- The principle requires adding a new dimension previously not considered



An Application of the Correspondence Principle

Why quadrant diagrams are useful

- Quadrant diagrams are a way of creating a meta-analysis
- They are a way of thinking abstractly about a large number of special cases
- They focus attention on a few, ideally most important, dimensions
- They help a regulator (manager) achieve requisite variety

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