



Reversing Disciplines: Reversal Theory - A New Tool for Sociologists

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Conference on Reversal Theory

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Reversal Theory & STS

► Science & Technology Studies (STS)

- Explores the relationship between science, technology and society.
- Draws from multiple disciplines, particularly sociology, philosophy, history and political science.

► **Using Reversal Theory in STS:**

- A Case Study for STS
- An Analytical Tool for STS

STS Interest Areas...

- Theory emergence and change.
- Institutional structures, interests, norms, and power dynamics.
- Interplay of society and technology in shaping scientific knowledge.
- Public understanding and use of science.

Reversal Theory: A Case Study for STS

Case Study Questions...

- Does Reversal Theory represent a fundamental shift in psychology, or does it extend existing theories?
- How do theory, observation, and experimentation combine to prove that Reversal Theory is "real?"
- What is the role of quantification in proof and in acceptability as a science?
- What do communication and publication patterns suggest about the theory's future?

► STS researchers often use case history studies to explore theory emergence and change.

- Context & Positioning
- Community Development
- Publication Patterns

► Why A Reversal Theory Study?

- History defined and documented.
- Principals and artifacts accessible.
- Controversies available.

RT Case Study: Context & Positioning

- ▶ Reversal Theory was born from diverse ideas - clinical psychology, cybernetics, structuralism, and phenomenology - and is pursued across diverse disciplines and applications.
- ▶ Today, as Reversal Theory researchers describe relationships to mainstream psychology, they reflect underlying values related to power, institutional control, rewards, and acceptance.

Patterns of Discourse

- Integrative, Inclusive
 - Oppositional
 - Power Aware
- Scientifically Explanatory
 - Comparative

RT Case Study: Community Development

- ▶ STS case studies lead to theories about how scientific disciplines emerge and stabilize.
- ▶ Placing Reversal Theory in this framework allows us to validate or refute those generalizations, predict future developments, and propose new directions.

Elements of Theory Emergence

Intellectual Activities:

Paradigm development, problem success, and puzzle solving.

Social Factors:

Communication, co-authorship, collegueship, and apprenticeship.

Specialty Development:

Paradigm group, communication network, cluster, and specialty.

Critical Roles In Shaping New Fields

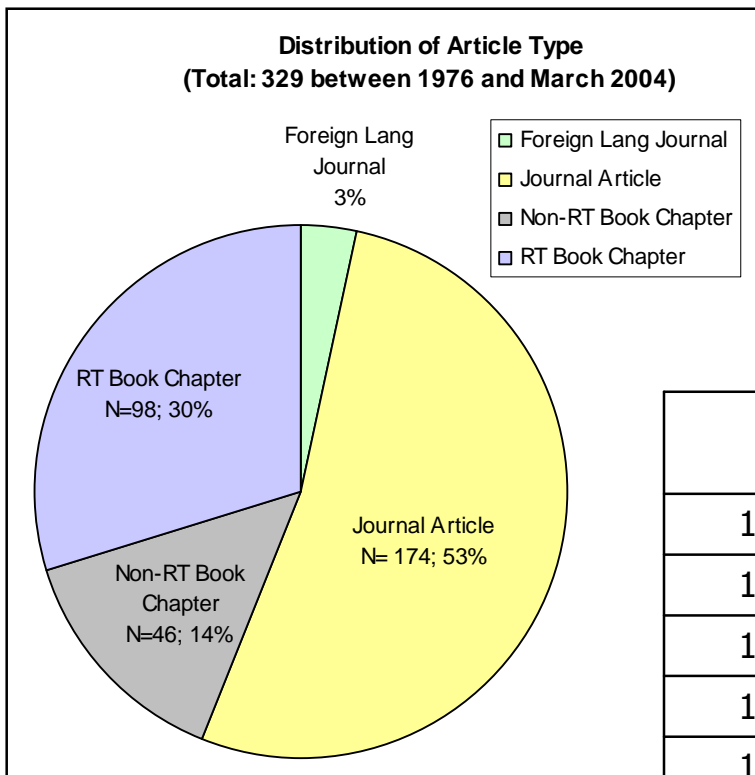
Forerunners – Shape ideas

Founders – Shape students

Followers – Shape progress

RT Case Study: Publication History

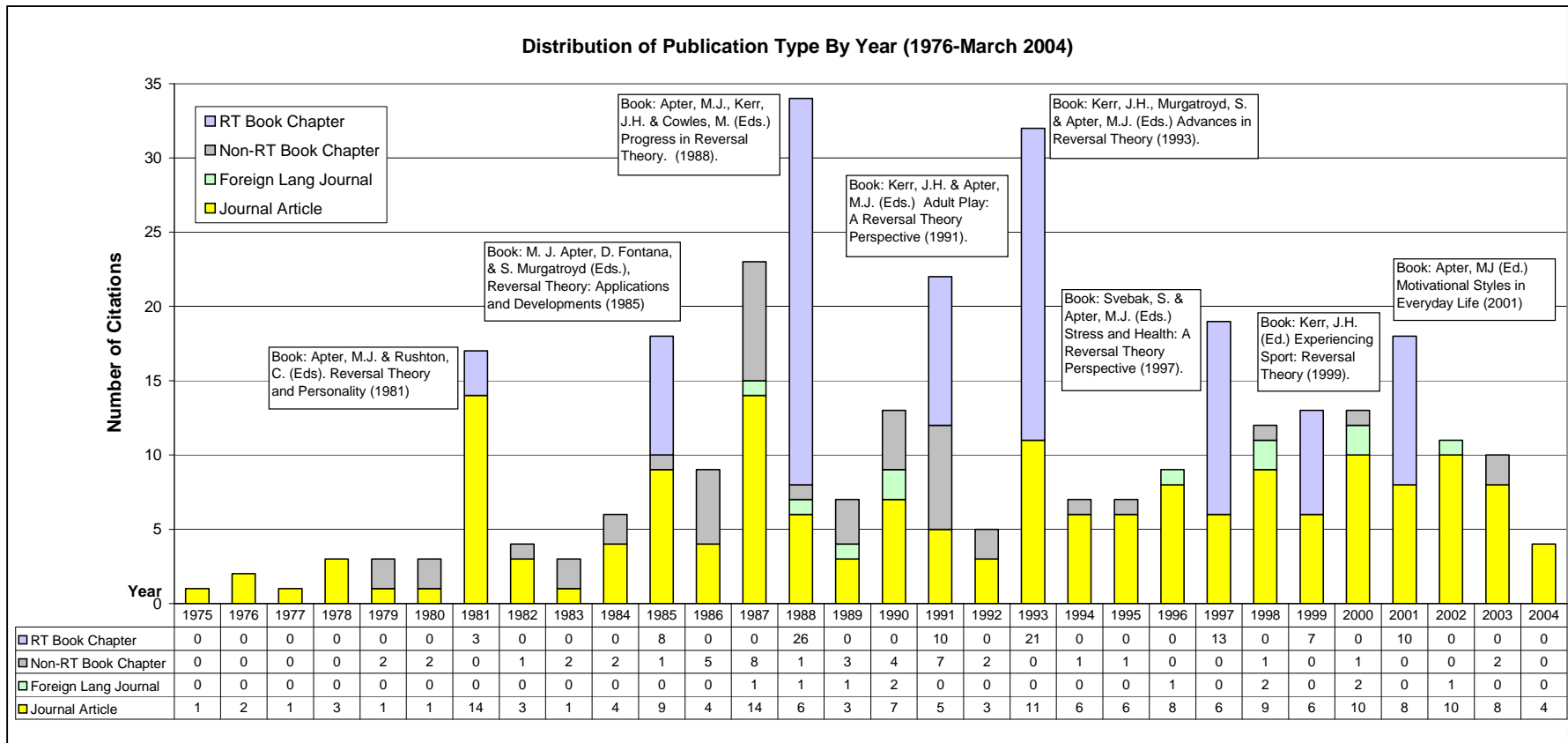
- Citation research is a helpful tool for tracking knowledge creation and communication within a new field:



Three authors - Michael Apter, John Kerr, and Sven Svebak - have led or contributed to 145 (44%) of chapters and journal articles to date.

	# of Papers per Author Combo	Total Number of Articles/Chapters
1975-1980	2.2	13
1981-1985	1.5	48 (11 as RT chapters)
1986-1990	1.6	86 (26 as RT chapters)
1991-1995	1.5	73 (31 as RT chapters)
1996-2000	1.2	66 (20 as RT chapters)
2001-March 2004	1.1	43 (10 as RT chapters)

RT Case Study: Publication History

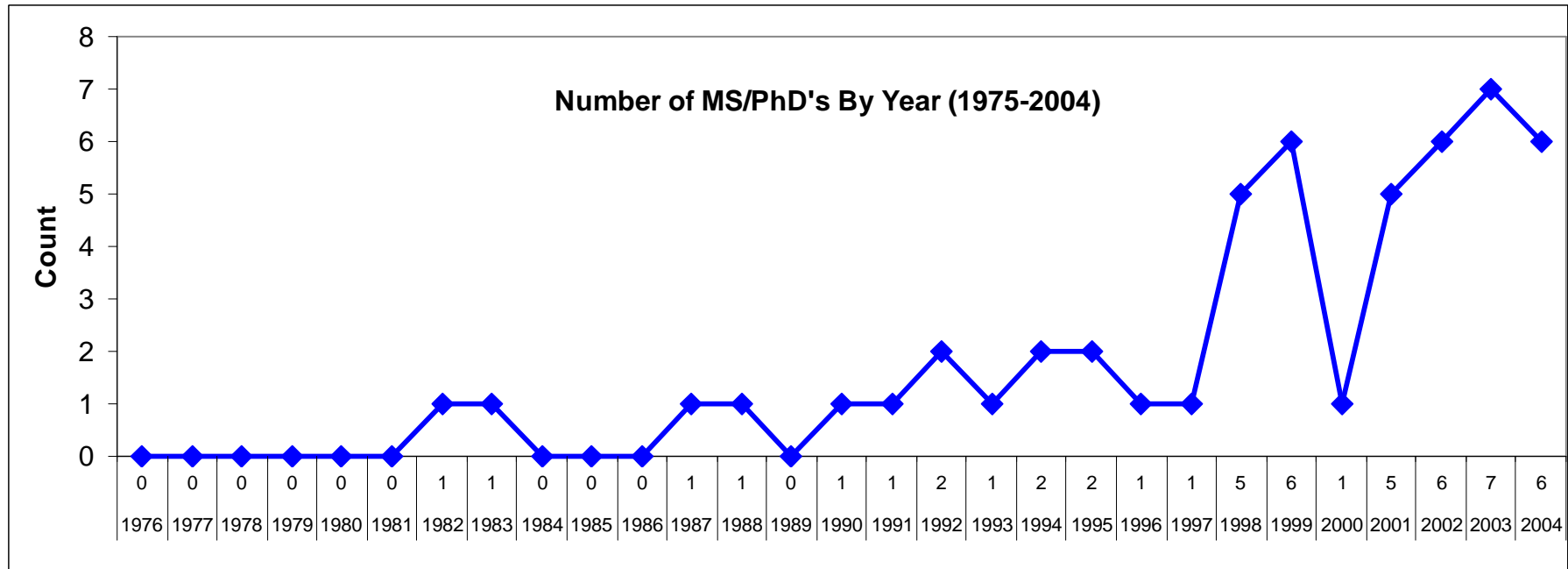


Recent Additions:

Kerr published book in 2004; Final paper count for 2004: 9

Paper count to date for 2005: 5

RT Case Study: MS/PhD Patterns



- Of the 28 MS/PhD candidates using Reversal Theory between 1982 and 1999, 13 (48%) have gone on to publish more than one paper included in the Reversal Theory Bibliography.
- Trend: Later students (post-1994) are less likely to have published a follow-up RT paper than their predecessors.

RT Case Study: Public Use of Science

- ▶ STS case studies often consider how theory moves from academic inquiry to the world of public use and understanding.
- ▶ Divides between social spheres often points to tensions - revealing the values driving science, its accessibility, and use.

Academic Community – The Sphere of Research	Practitioners Sphere – The Sphere of Public Use
<ol style="list-style-type: none"> 1. Focus on Reversal Theory as a <i>science</i>, with instruments serving as a technology to measure theory and predict outcomes. 2. Descriptive, experimental, inquiry-focused emphasis on validating scientific truth, through the lens of application. 3. “Technical” language used - derived from Greek & clinical psychology. 4. Range of <u>research</u> instruments used to collect empirical data to test theory statements. 	<ol style="list-style-type: none"> 1. Focus on Reversal Theory as a <i>technology</i> – a tool supporting “humanity at work.” 2. Pragmatic, prescriptive emphasis on serviceable truth – reversal theory as a tool for self-improvement. 3. “Popular” language used - “Plain English” more “accessible” to public. 4. Range of <u>reporting</u> tools used to describe Reversal Theory output and application.

Reversal Theory: An STS Tool

- ▶ As an emerging interdisciplinary field, STS leverages the work of diverse theorists – many traditionally seen as incompatible.
- ▶ In my STS studies, I use Reversal Theory as a conceptual framework for identifying theory gaps or missing elements ...
 - Which state's motives are not considered by the theory?
 - Which theories traditionally viewed as incompatible are actually flip sides of the motivational coin?
- ▶ The following slides illustrate how Reversal Theory provides a structure for positioning different theories – allowing a broader understanding of science and technology in society.

RT as STS Tool: Views from Philosophy

Telic	Philosophies that conceptualize S&T as approaching the ultimate goal of a democratic use of science; philosophies that focus on how science work toward the goal of “truth.”
Paratelic	Conceptualization of S&T as a quest for knowledge for its own sake, with no ultimate “truth.” Approaches that consider the true benefit of S&T to be in the journey itself.
Conforming	Theories of S&T as a well-ordered process, based on institutionally established norms of science. Conceptualizations that focus on the deepening of normal science, the practice of puzzle-solving, and the stabilization of established methods.
Negativistic	Theories of S&T that focus on the revolutionary nature of science. Conceptualizations that consider theory change and paradigm shifts (Kuhn). Feminist and post-colonial theories that urge new approaches to S&T knowledge creation.

RT as STS Tool: Views from Philosophy

Mastery	Philosophies of S&T as competitive enterprises, as struggles for power and resources (Foucault and Marx). Theories that address the competitive nature of knowledge, and Darwinian theories that consider theory selection as a “survival of the fittest” issue.
Sympathy	Philosophies of S&T that emphasize the improvement of quality of life for the underprivileged and for society in general; the role of technology in connecting people and building communities.
Self	Theories focusing on the personal activities of S&T, addressing issues of skills development, individual success, and prestige within the scientific community. “Great Man” histories and philosophies of S&T.
Other	Philosophies that focus on the role of S&T for the greater good, or to benefit others. Theories that focus on the transcendence of science for the good of mankind, and the use of science for the public interest.

Research Proposal: Emotion and STS

- ▶ I wish to study how emotion contributes to knowledge creation and communication in science and technology.
- ▶ While STS often refer to the topic of emotion, little research exists about how emotions play out in the daily work of scientists and technologists – and how subjectivity influences scientific and technological decisions and output.
- ▶ With its flexibility as both a grand theory and individual tool, Reversal Theory may be an effective bridge between sociological theory and individual practice in STS.