

POS 598 – Reflexivity in Science and Governance

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T, Th 10:40 - 11:55 am
Coor 6601
3 credits

Course Description

This course will focus on the role of knowledge in political and policy decisionmaking, with a particular emphasis on the analysis of policy-relevant knowledge systems (systems for the production, validation, and use of knowledge in policy decisionmaking), their modes of failure, and the design of reflexive governance approaches that may be able to prevent, avoid, or reduce the frequency of such failures.

Course Objectives

Students in this course will acquire:

1. A thorough introduction to key theoretical and empirical literatures covering the role of knowledge in political and policy decisionmaking.
2. Skills in the analysis of knowledge systems
3. Skills in the analysis of knowledge systems failures
4. Skills in the analysis and design of reflexive approaches to governance

Course Requirements

Student performance will be measured on the following basis:

1. **Course Participation and Readings** (20%): Students must attend all course sessions prepared to discuss the assigned readings and participate in course projects.
2. **Knowledge Systems Analysis** (15%): Students must submit an 8-page, double-spaced paper analyzing the production, validation, and use of knowledge within a chosen knowledge system.
3. **Knowledge Systems Failure Analysis** (15%): Students must submit an 8-page, double-spaced paper analyzing a failure of their chosen knowledge system.
4. **Designing Reflexivity Analysis** (15%): Students must submit an 8-page, double-spaced paper analyzing the possibility for reflexive governance within their chosen knowledge system.
5. **Final Project** (35%): Students must revise and submit their three analyses as a 25-page, comprehensive report on their chosen knowledge system.

Course Readings

Students should acquire two books:

Diane Vaughan, *The Challenger Launch Decision: Risky Technology, Culture, and Deviance at NASA* (Chicago, 1996).

Steven Epstein, *Impure Science: AIDS, Activism, and the Politics of Knowledge* (California, 1996).

All other course readings will be made available through the course website via Blackboard.

Course Outline

The course is organized into two streams. On Tuesdays, the course will be a discussion seminar focused on each week's readings. On Thursdays, the course will meet as a research practicum focused on the course projects.

Section I: Course Introduction

Aug. 21, 23

T: Course Introduction and Overview

Th: Introduction to Course Projects

Section II: Analyzing Knowledge Systems

Aug. 28, 30

T: Introduction to Knowledge Systems Analysis

Clark A. Miller, "New Civic Epistemologies of Quantification: Making Sense of Local and Global Indicators of Sustainability," *Science, Technology & Human Values* 30(3): 403-432, 2005.

Karen Bandhauer et al., "Challenges to Regulatory Harmonization and Standard-Setting: The Case of Environmental Accounting in the US and Canada," *Journal of Comparative Policy Analysis*. Vol. 7(2): 177-194. 2005.

Sheila Jasanoff, *Designs on Nature* (Princeton, 2005). Chapter 10: "Civic Epistemology."

Shobita Parthasarathy, *Building Genetic Medicine* (MIT, 2006). Chapter 4: "Defining Good Health Outcomes."

Arthur Daemmrich and Georg Krucken, "Risk vs. Risk: Decision-making Dilemmas of Drug Regulation in the US and Germany," *Science as Culture* 9(4): 505-523, 2000.

Th: Project Selection, Discussion, and Refinement

Sept. 4, 6

T: Key Concepts in Knowledge Systems Analysis:

Objectivity, Credibility, and Epistemology

Steven Shapin, *A Social History of Truth* (Chicago, 1994). Chapter One, “The Great Civility: Trust, Truth, and Moral Order,” Chapter Five, “Epistemological Decorum: The Practical Management of Factual Testimony,” and Chapter 6, “Knowing about People and Knowing about Things: A Moral History of Scientific Credibility.”

Theodore Porter, *Trust in Numbers* (Princeton, 1995). Introduction, “Cultures of Objectivity,” Chapter One, “A World of Artifice,” and Chapter Two, “How Social Numbers are Made Valid.”

Peter Galison, “Judgment against Objectivity,” in C. A. Jones, A. E. Slaton, and P. Galison, eds. *Picturing Science, Producing Art* (Routledge, 1998).

Th: Practicum in Knowledge Systems Analysis

Sept. 11, 13

T: Key Concepts in Knowledge Systems Analysis:

Ontology, Classification, Framing, and Boundary Work

Geof Bowker and Leigh Star, *Sorting Things Out: Classification and Its Consequences* (MIT, 2003). Introduction, “To Classify is Human,” Chapter One, “Some Tricks of the Trade in Analyzing Classification,” and Chapter Two, “The Kindness of Strangers.”

Ian Hacking, *The Social Construction of What?* (Harvard, 1999). Chapter 5, “Kind-Making: The Case of Child Abuse.”

Clark Miller, “The Dynamics of Framing Environmental Values and Policy: Four Models of Societal Processes,” *Environmental Values* 9: 211-233, 2000.

Sheila Jasanoff, “Contested Boundaries in Policy-Relevant Science,” *Social Studies of Science* 17(2): 195-230, 1987.

Thomas Gieryn, “Boundary-Work and the Demarcation of Science from Non-Science,” *American Sociological Review* 48(6): 781-795 (1983).

Th: Work on Projects

Sept. 18, 20

T: Key Concepts in Knowledge Systems Analysis:

Practice and Institutionalization

Stephen Hilgartner, *Science on Stage* (Stanford, 2000), Chapter One, “Introduction” and Chapter Two, “Staging Authoritative Reports.”

Ian Hacking, *The Social Construction of What?* (Harvard, 1999). Chapter Six, “Weapons Research.”

Virginia Walsh, *Global Institutions and Social Knowledge* (MIT, 2004), Chapter Six, “Inter-American Tropical Tuna Commission, 1950s-1990s.”

Simon Shackley, “Epistemic Lifestyles in Climate Modeling.” In C. Miller and P. Edwards, *Changing the Atmosphere: Expert Knowledge and Environmental Governance* (MIT, 2001).

Th: Presentation and Discussion of Knowledge Systems Analysis

Sept. 25, 27

T: Knowledge Systems Analysis: An Illustration

Theodore Porter, “It’s Not in the Numbers,” *Washington Post*, Nov. 26, 2000, p. B01.

Clark A. Miller, “Interrogating the Civic Epistemology of American Democracy: Stability and Instability in the 2000 U.S. Presidential Election,” *Social Studies of Science*. Vol. 34. No. 4, pp. 501-531, 2004.

Michael Lynch et al. “Pandora’s Ballot Box: Comments on the 2000 US Presidential Election,” *Social Studies of Science* 31:3 (2001).

**Th: Reflections on Knowledge Systems Analysis
Knowledge Systems Analysis Due**

Section IV: Knowledge Systems Failures

Oct. 2, 4

T: Knowledge Systems Failures: Problems of Process and Organization

Diane Vaughn, *The Challenger Launch Decision: Risky Technology, Culture, and Deviance at NASA* (Chicago, 1996).

Th: Practicum in Knowledge Systems Failures Analysis

Oct. 9, 11

T: Knowledge Systems Failures: Problems of Complexity and Contingency

Watch and Discuss Three Mile Island

Charles Perrow, *Normal Accidents: Living with High Risk Technologies* (Princeton, 1999), Introduction, Chapter One, “Normal Accident at Three Mile Island,” Chapter Two, “Nuclear Power as a High Risk System,” and Chapter Three, “Complexity, Coupling, and Catastrophe.”

Th: 4S Conference – Work on Projects

Oct. 16, 18

T: Knowledge Systems Failures: Problems of Local/Global

James Fairhead and Melissa Leach, “Rethinking the Forest-Savanna Mosaic: Colonial Science and its Relics in West Africa.” In *The Lie of the Land: Challenging Received Wisdom on the African Environment*. M.

Leach and R. Mearns. London, International African Institute. 1996.

Brian Wynne, “Misunderstood Misunderstandings: Social Identities and the Public Uptake of Science,” In A. Irwin and B. Wynne, eds., *Misunderstanding Science?* (Cambridge, 1996).

James Scott, *Seeing Like a State* (Yale, 1998), Introduction and Chapter Seven, “Compulsory Villagization in Tanzania.”

Michael Goldman, “Imperial Science, Imperial Nature: Environmental Knowledge for the World (Bank),” In Sheila Jasanoff and Marybeth Long-Martello, eds., *Earthly Politics: Local and Global in Environmental Governance* (Cambridge: MIT Press). pp. 55-80. 2004.

Clark Miller, “Resisting Empire: Globalism, Relocalization, and the Politics of Knowledge,” in Sheila Jasanoff and Marybeth Long-Martello, eds., *Earthly Politics: Local and Global in Environmental Governance* (Cambridge: MIT Press). pp. 81-102. 2004.

Th: **Knowledge Systems Failures Analysis Due**

Section V: Reflexivity in Science and Governance

Oct. 23, 25

T: **The Theoretical Foundations of Reflexive Governance: Co-Production**

Sheila Jasanoff, *States of Knowledge: The Co-Production of Science and Social Order* (Routledge, 2004), Chapter One, “The Idiom of Co-Production” and Chapter Two, “Ordering Knowledge, Ordering Society.”

Yaron Ezrahi, *The Descent of Icarus: Science and the Transformation of Contemporary Democracy* (Harvard, 1990), Introduction, Chapter One, “The Balance Between Free Agency and Causation,” Chapter Two, “Science and the Making of Representative Actions and Accountable Actors,” and Chapter Three, “Science and the Visual Culture of Liberal Democratic Politics.”

Sheila Jasanoff and Brian Wynne, “Science and Decisionmaking,” in S. Jasanoff and E. Malone, *Human Choice and Climate Change* (Battelle, 1998).

Th: **Practicum in Reflexive Design Analysis, Part I**

Oct. 30, Nov. 1

T: **Reflexive Governance: Internal Reflexivity**

David Guston and Daniel Sarewitz. “Real-Time Technology Assessment.” *Technology in Society* 24.1-2 (2002): 93-109.

Jan Peter Voss and Rene Kemp, “Reflexive Governance for Sustainable Development: Incorporating Feedback in Social Problem Solving,” IHDP Open Meeting, 2005.

Andrew Stirling, “Precaution, Foresight, and Sustainability: Reflection and Reflexivity in the Governance of Science and Technology.” In J. P. Voss, D. Bauknecht, and R. Kemp, eds., *Reflexive Governance for Sustainable Development* (Elgar, 2006).

Carolyn Hendriks and John Grin, “Grounding Reflexive Governance in Practice and Context: Some Democratic Considerations,” In J. P. Voss, D. Bauknecht, and R. Kemp, eds., *Reflexive Governance for Sustainable Development* (Elgar, 2006).

Th: Practicum in Reflexive Design Analysis, Part I

Nov. 6, 8

T: Reflexive Governance: External Reflexivity

Thomas Gieryn and Anne Figert, “Ingredients for a Theory of Science in Society: O-Rings, Ice, Water, C-Clamp, Richard Feynman, and the Press,” in S. Cozzens and T. Gieryn, eds., *Theories of Science in Society* (Indiana, 1990).

Thomas Gieryn, *Cultural Boundaries of Science: Credibility on the Line* (Chicago, 1999). Chapter Five, “The (Cold) Fusion of Science, Mass Media, and Politics.”

Sheila Jasanoff, “Civilization and Madness: The Great BSE Scare of 1996,” *Public Understanding of Science* 6: 221-232 (1997).

Stephen Hilgartner, *Science on Stage* (Stanford, 2000), Chapter Three, “Attacking Advisory Reports.”

Th: Work on Projects

Nov. 13, 15

T: Reflexive Governance: An Illustration

Stephen Epstein, *Impure Science: AIDS, Activism, and the Politics of Knowledge* (California, 1996).

Th: Designing Reflexivity Analysis Due

Section VI: Final Projects and Wrap-Up

Nov. 20, 22

Thanksgiving – No Class

Nov. 27, 29

Class Presentations of Final Projects

Dec. 4.

**Course Wrap Up
Final Projects Due Dec. 4**