

The Psychology and Politics of Sense Making

Political Science 793, Winter 2017

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The process of sense making relates new information to previous beliefs in a way that (hopefully) helps one function well in the real world. Sense making is ubiquitous and typically involves attribution, framing, pattern recognition, learning, and emotion.

This research seminar will be thoroughly interdisciplinary because theories and evidence about sense making come from many disciplines. Examples include:

Political science (campaign politics and foreign policy decision making),
Cognitive psychology (e.g., inference, analogizing and framing),
Social psychology (e.g. cognitive consistency and social influence),
Anthropology (e.g., shared culture and ethnocentrism),
Economics (especially behavioral economics),
Business (especially advertising),
Sociology (e.g., social mobilization), and
Artificial Intelligence (e.g., case-based reasoning)

Across disciplines, sense making helps us understand topics such as leadership, learning, preference formation providing input to deliberate choice, terrorist recruitment, the power of sacred values, use of historical analogies, and dynamics of identity. The course will require several short papers and a major research paper. Students will be encouraged to select a research topic that might be relevant to their dissertation.

There are no prerequisites except second year standing.

The course will require one or one short paper, a research design paper for the major project, and the major research paper itself. Students will be encouraged to select a research topic that might be relevant to their dissertation. The grade will be determined as follows: 10% short paper, 10% research design, 20% class participation, and 60% research paper. The research paper is due April 25.

Students are expected to be familiar with college and university policies on matters such as plagiarism, sexual harassment and help for students with mental problems or physical disabilities. See for example <http://www.umich.edu/~spolicy/>.

1. Introduction to Sense Making. Jan. 5.

2. Some Approaches to Sense Making. Jan. 12

2.1 Tversky, Amos and Daniel Kahneman. 1981. "The Framing of Decisions and the Psychology of Choice." *Science* 211(4481): 453-458. On gains vs. losses. How a psychologist won the Nobel Prize in Economics.

2.2 Ostrom, Elinor, 1990. *Governing the Commons*. Cambridge, UK: Cambridge University Press, 1-46. On how reframing a problem (such as management of a common pool resource) suggests the questions to be asked and the things to look for. How a political scientist won a Nobel Prize in Economics.

2.3 McGraw, Kathleen M. 2000. "Contributions of the Cognitive Approach to Political Psychology." *Political Psychology* 21: 805-832.

2.4 Taubman, W. 2004. *Khrushchev: The Man and His Era*. New York: W. W. Norton and Company, p. 529-32. On Kennedy's effort to make sense of the Soviet's placement of nuclear missiles in Cuba.

2.5 Klein, Gary, Brian Moon, and Robert R. Hoffman. 2006. "Making Sense of Sensemaking 1: Alternative Perspectives." *IEEE Intelligent Systems* 21: 70-73.

2.6 Klein, Gary, Brian Moon, and Robert R. Hoffman. 2006. "Making Sense of Sensemaking 2: A Macrocognitive Model." *IEEE Intelligent Systems* 21: 88-92.

2.7 Shui, Simon C.K., and Sankar K. Pal. 2004. "Case-Based Reasoning: Concepts, Features and Soft Computing." *Applied Intelligence* 21 (3):233-8. Section 3 can be skimmed. An artificial intelligence approach to sense making.

3. Everyday Sense Making. Jan. 19.

3.1 Weick, Karl E. 1993. "The Collapse of Sensemaking in Organizations: The Mann Gulch Disaster." *Administrative Science Quarterly* 38(4): 628-652. What can happen when sensemaking fails.

3.2 Perrow, Charles. 1984. *Normal Accidents*. New York: Basic Books. Pp. 208-31. On how failures of sensemaking are promoted by complex interacting systems, using examples of collisions at sea.

3.3 Lakoff, George and Mark Johnson. 1980. *Metaphors We Live By*. Chicago: University

of Chicago Press. Pp. 223-37. On self-understanding as a search for appropriate metaphors to make sense of our lives.

3.4 Schank, Roger C. 1990. *Tell Me a Story: Narrative and Intelligence*. Evanston, IL: Northwestern University Press, forward, ix-xi, preface, and 1-80. How narratives are a basic way in which people make sense of their world, and how they communicate that sense.

4. Paradigms and Patterns. Jan. 26.

4.1 Kuhn, Thomas S. 1962. *The Structure of Scientific Revolutions*. Chicago and London: The University of Chicago Press, pp. 55-65, 160-210. In scientific disciplines, meaning is embedded in paradigms. The question of how paradigms change is critical to the advance of science.

4.2 Bandura, Albert, 2006. "Toward a psychology of human agency, *Perspectives on Psychological Science*. Vol. 1, no. 2, 164-180.

4.3 Axelrod, Robert. Schema for Sense Making 2014.

4.4 Chambers, Daniel and Deborah Reisberg. 1985. "Can mental images be ambiguous?" *Journal of Experimental Psychology* 11(3): 317-328. Experiments showing that people have a hard time reversing their mental images of ambiguous figures even with hints, coaching, and training.

5. Case-Based Reasoning. Feb. 2.

5.1 Watson, Ian. 1997. *Applying Case-Based Reasoning: Techniques for Enterprise Systems*. San Francisco: Morgan Kaufmann Publishers, Inc. Pp. 15-38. An introduction.

5.2 Pal, Sankar K. and Simon C.K. Shiu, 2004. *Foundations of Soft Case-Based Reasoning*. Hoboken, NJ: John Wiley & Sons, Inc. Pp. xvii-xx, 1-43, and 75-80. A good textbook.

5.3 Aha, David W. 1998. "The Omnipresence of Case-Based Reasoning in Science and Application." *Knowledge-Based Systems* 11 (5-6): 261-73.

5.4 Perner, Petra. 2008. "Case-Based Reasoning and the Statistical Challenges." In *Advances in Case-Based Reasoning*, eds. Klaus-Dieter Althoff, Ralph Bergmann, Mirjam Minor, and Alexandre Hanft. Berlin, Germany: Springer-Verlag. Pp. 430-443. On bridging the gap between the CBR community and the statistics community, including concepts of similarity, memory organization, CBR learning, and case-base maintenance.

5.5 Lake, Brenden et al., 2015. "Human-Level Concept Learning Through Probabilistic Program Induction," Science, 11 December 2015, 350 (6266), pp. 1332-38.

6. Challenges to Rationality: Biases and Emotion. Feb. 9.

- 6.1 Vertzberger, Yaacov Y.I. 1990. *The World In Their Minds*. Stanford, CA: Stanford University Press. Pp. 323-41. On biases in information processing.
- 6.2 Dawes, Robyn M., David Faust, and Paul E. Meehl. 1989. "Clinical Versus Actuarial Judgment." *Science* 243 (4899): 1668-74.
- 6.3 Shaw, Lynette, 2015. "Mechanics and dynamics of social construction: Modeling the emergence of culture from individual mental representation," *Poetics*, vol. 52, 175-190.
- 6.4 Marcus, George E., W. Russell Neuman, and Michael MacKuen. 2000. *Affective Intelligence and Political Judgment*. Chicago: The University of Chicago Press. Pp. 1-44, 65-94, and 126-140. On emotions as an important part of intelligence.
- 6.5 De Martino, B., Dharshan Kumaran, Ben Seymour, and Raymond J. Dolan. 2006. "Frames, Biases, and Rational Decision-Making in the Human Brain." *Science* 313(5787): 684-87. Brain imaging shows emotional involvement in framing gains and losses.
- 6.6 Nylan, Brendan, and James Reifler, 2010. "When Corrections Fail: The Persistence of Political Misconceptions," *Political Behavior*, vol. 32, 303-320.

7. Meaning of Meaning. Feb. 16.

- 7.1 Karlsson, Niklas, George Loewenstein, and Jane McCafferty. 2004. "The Economics of Meaning." Pp. 61-75 in *Journal of Political Economics*, vol. 30.
- 7.2 Frankl, Victor E. 1959. *Man's Search for Meaning*. Boston: Beacon Press. 72-93, 97-114, 137-165.
- 7.3 Durham, Frank D. 2001. "Breaching Powerful Boundaries: A Postmodern Critique of Framing." In *Framing Public Life: Perspectives on Media and Our Understanding of the Social World*, eds. Stephen D. Reese, Oscar H. Gandy, and August E. Grant. Mahwah, NJ: Lawrence Erlbaum Associates. Pp. 123-136. A big-picture view of framing.

8. Sense-Making in Foreign Policy. Feb. 23.

Research Design Assignment Due.

- 8.1 Taubman, W. 2004. *Khrushchev: The Man and His Era*: New York: W. W. Norton and Company, p. 529-32. On Kennedy's effort to make sense of the Soviet's placement of nuclear missiles in Cuba. (Review from Week 2).

8.2 May, Ernest R. and Philip D. Zelikow. 2002. *The Kennedy Tapes; Inside the White House During the Cuban Missile Crisis*. Pp. 514. New York: W.W. Norton and Company. Pages xxix-lvi, 3-108.

8.3 Harwood, John. 2009. "Obama Rejects Afghanistan-Vietnam Comparison." *New York Times*, 15 September. Obama gives three lessons of Vietnam that he thinks about "all the time," while denying you can step in the same river twice.

8.4 Hemmer, Christopher M. 2000. *Which Lessons Matter? American Foreign Policy Decision Making in the Middle East*. New York: State University of New York Press. pp. 1-34.

9. Computational Theories of Meaning. March 9.

9.1 Landauer, T. K. and S. T. Dumais. 1997. "A Solution to Plato's Problem: The Latent Semantic Analysis Theory of Acquisition, Induction, and Representation of Knowledge." *Psychological Review*, vol. 104, 211-240. The problem is how people are able to learn so much from impoverished stimuli.

9.2 Hofstadter, Douglas, 1988. Forward to Pentti Kanerva, *Sparse Distributed Memory*. Cambridge, MA: MIT Press, pp. xi-xviii.

9.3 Kanerva, Pentti. 2009. "Hyperdimensional Computing: An Introduction to Computing in Distributed Representation with High-Dimensional Random Vectors." *Cognitive Computation* 1:139-159. OPTIONAL. Kanerva offers a computational model of how people make sense of things, and how computers might be designed to exploit similar principles. The math is not easy, but the conceptual framework is valuable.

9.4 Kanerva, Pentti, 1988. *Sparse Distributed Memory*. Cambridge, MA: MIT Press, pp. 97-120. Kanerva's explanation of what his approach implies.

10. Sense-making As a Social Process. March 16.

10.1 Denzau, Arthur T. and Douglass C. North. 1994. "Shared Mental Models: Ideologies and Institutions." *Kyklos* 47:3-31.

10.2 Atran, Scott, Robert Axelrod, and Richard Davis. 2007. "Sacred Barriers to Conflict Resolution." *Science* 317:1039-40.

10.3 Tronick, Ed and Marjorie Beeghly. 2011. "Infants' meaning-making and the development of mental health problems." *American Psychologist*, vol. 66: Pp. 107-119.

10.4 Tenenbaum, Joshua, et al. 2011. "How to Grow a Mind: Statistics, Structure, and Abstraction," *Science*, vol. 331, 11 March 2011.

10.5 Brand Architecture. Wikipedia.

11. Overview of Sense Making, March 23.

12-15. Student Reports. March 30, April 6, April 13 and April 18.

The research paper is due April 25.