

Metaphor in Science

European University at St. Petersburg, Spring 2015, Tuesdays, 2:10-5:20
STS Program, Department of Political Science and Sociology

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Course requirements 1. Weekly readings; 2) Class participation; 3) Four 1-page written responses to the week's readings (due on day of discussion); 4) Brief (4-6 page) written discussion of the origins and conceptual significance of a metaphor in a text, a discourse, or an author's work; 5) Brief (about 15 minute) oral report on that metaphor in class.

February 2 Introduction to course

February 9 Metaphor in daily life

George Lakoff and Mark Johnson, *Metaphors We Live By* (Chicago: University of Chicago Press, 1980), 3-125, at:
<http://www.cabrillo.edu/~ewagner/WOK%20Eng%20/Lakoff%20&%20Johnson%20-%20Metaphors%20We%20Live%20By.pdf>

Alexis Madrigal, "Why are Spy Researchers Building a 'Metaphor Program'?" *The Atlantic*, May 25, 2011. At:
<http://www.theatlantic.com/technology/archive/2011/05/why-are-spy-researchers-building-a-metaphor-program/239402/>

Dan Juravsky, "Why Drugs are a Metaphor For Some Foods, and Sex is a Metaphor For Others," *The New Republic*, September 21, 2014
<https://newrepublic.com/article/119352/what-language-yelp-reviews-tells-us>

February 16 Metaphor in daily life

George Lakoff and Mark Johnson, *Metaphors We Live By* (Chicago: University of Chicago Press, 1980), 126-237.

Emily Martin, "The Egg and the Sperm: How Science has Constructed a Romance-Based on Stereotypical Male-Female Roles," *Signs* XVI, 3 (1991), pp. 485-501.

OPTIONAL: G. E. R. Lloyd, *The Revolutions of Wisdom* (Berkeley: University of California Press, 1982), pp. 174-214.

February 23 Metaphor and Interpretation

Max Black, *Models and Metaphors* (Ithaca: Cornell University Press, 1962), pp. 25- 47.

Max Black, "More About Metaphor," in Andrew Ortony, ed., *Metaphor and Thought* (Cambridge: Cambridge University Press, 1979), 19-43.

L. J. Rather, "On the Source and Development of Metaphorical Language in the History of Western Medicine," in Lloyd G. Stevenson, ed., *A Celebration of Medical History* (Baltimore: Johns Hopkins University Press, 1982), pp. 174-214.

C. Pierce Salguero, *Translating Buddhist Medicine in Medieval China* (Philadelphia: University of Pennsylvania Press, 2014), pp. 67-95.

Jorge Luis Borges, "The Fearful Sphere of Pascal," *Labyrinths* (1964), at: <https://sites.google.com/site/jimeikner/home/borges/the-fearful-sphere-of-pascal>

OPTIONAL: Richard Boyd, "Metaphor and Theory Change: What is 'Metaphor' a Metaphor for?," in Ortony, ed., *Metaphor and Thought*, pp. 356-408.

March 1 Charles Darwin's Metaphors as Concepts and Rhetoric (Part I)

Charles Darwin, *On the Origin of Species* [1859], chapters I-IV, XV.

Howard Gruber, "The Evolving Systems Approach to Creative Scientific Work: Charles Darwin's Early Thought," Thomas Nickles, ed., *Scientific Discovery*, pp. 113-130.

Edward Manier, *The Young Darwin and his Cultural Circle* (Boston and Dordrecht: Reidel, 1978), pp. 172-192.

Robert Young, "Malthus and the evolutionists: the common context of biological and social theory," in Young, *Darwin's Metaphor* (Cambridge: Cambridge University Press, 1985), pp. 23-55.

March 8 Charles Darwin's Metaphors (Part II)

Charles Darwin, *The Descent of Man* [1871], chapter XXI

Robert Young, "Darwin's metaphor: does nature select?" in Young, *Darwin's Metaphor*, pp. 79-125.

Daniel Todes, "Darwin's Malthusian Metaphor and Russian Evolutionary Thought," *Isis* 78 (1987), pp. 537-551.

Marwa Elshakry, *Reading Darwin in Arabic, 1860-1950* (Chicago and London: University of Chicago Press, 2013), pp. 261-285.

March 15 Bodily Defenses (Part I)

Ilya Mechnikov, *Lectures on the Comparative Pathology of Inflammation* [1891] (Dover, 1968), pp. 1-13.

Arthur Silverstein, "Cellular versus humoral immunity: Determinants and Consequences of an epic 19th century battle," *Cellular Immunology* 48 (1979), pp. 208-221.

Daniel Todes, "Mechnikov, Darwinism, and the Phagocytic Theory," *Darwin Without Malthus: The Struggle for Existence in Russian Evolutionary Thought* (New York and Oxford: Oxford University Press, 1989), pp. 82-103.

Fred Karush, "Metaphors in Immunology," Pauline Mazumdar, ed., *Immunology 1930-1980* (Toronto: Wall & Thompson, 1989), pp. 73-80.

March 22 Bodily Defenses (Part II)

Laura Otis, *Membranes: Metaphors of Invasion in Nineteenth-Century Literature, Science, and Politics* (Baltimore: JHU Press, 1999), 1-36, 64-89, 90-118, 168-175.

Emily Martin, "Toward an Anthropology of Immunology: The Body as Nation State?" *Medical Anthropology Quarterly*, new series, vol. 4, no. 4 (December 1990), pp. 410-426

March 29 Reflex and the Mechanical Body

Rene Descartes, *Treatise on Man and Passions of the Soul* (selections)

Ivan Pavlov, Aleksei Ukhtomskii (short texts)

Daniel Todes, "Pavlov's Quest," in *Ivan Pavlov: A Russian Life in Science* (New York and Oxford: Oxford University Press, 2014), pp. 287-302.

Slava Gerovich, "Love-Hate for Man-Machine Metaphors in Soviet Physiology: From Pavlov to "Physiological Cybernetics," *Science in Context* 15 (2) 2002, pp. 339-374.

Eugene Raikhel, "Reflex/ Рефлекс," *Somatosphere: Science, Medicine and Anthropology*, February 2014; at <http://somatosphere.net/2014/02/reflex%D1%80%D0%B5%D1%84%D0%BB%D0%B5%D0%BA%D1%81.html>

Pavlov Garcia-Lopez, "Sculpting the Brain," *Frontiers of Human Neuroscience*, February 9 2012, at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3275903/>

April 5 Metaphor in psychology

David O'Leary, "Psyche's muse: the role of metaphor in the history of psychology," in David Leary, Mitchell Ash, William Woodward, eds., *Metaphors in History of Psychology* (Cambridge: Cambridge UP, 1999), pp. 1-55.

Paul McReynolds, "The Clock Metaphor in the History of Psychology," *Thomas* 97-112.

Stanley Edgar Hyman, *The Tangled Bank: Darwin, Marx, Frazier and Freud as Imaginative Writers* (New York: Atheneum, 1962), pp. 301-393.

Hunter Heyck, "George A. Miller, Language, and the Computer Metaphor of Mind," *History of Psychology* 2, 1 (1999), pp. 37-64.

April 12 Anthropomorphism and Mechanomorphism

John Watson, "Psychology as the Behaviorist Views It" (1913) <http://psychclassics.yorku.ca/Watson/views.htm>

Frans de Waals, "The Whole Animal: Childhood Talismans and Excessive Fear of Anthropomorphism" and "Bonobos and Fig Leaves: Primate Hippies in a Puritan Landscape," in his *The Ape and the Sushi Master: Cultural Reflections of a Primatologist* (New York: Basic Books, 2001), pp. 37-84, 127-148.

Donald Griffin, *Animal Minds, Beyond Cognition to Consciousness* (Chicago: University of Chicago Press, 2001), pp. pp. ix-xv, 1-36, 252-269.

John S. Kennedy, *The New Anthropomorphism* (Cambridge, Cambridge UP, 1992), pp. 1-32.

Lorraine Daston and Greg Mitman, eds., *Thinking With Animals: New Perspectives on Anthropomorphism* (New York: Columbia University Press, 2006), pp. 1-14 (Introduction) and 37-49 (Daston, “Intelligences: Angelic, Animal, Human”)

April 19 Twentieth Century Biology and Genetics

Evelyn Fox Keller, *Refiguring Life* (New York: Columbia University Press, 1996)

OPTIONAL Eric Juengst and John Huss, “From metagenomics to the metagenome: Conceptual change and the rhetoric of translational genomic research,” *Genomics, Society and Policy* 5, 3 (2009), pp. 1-19.

April 26 Illness as Cultural Metaphor

Susan Sontag, *Illness as Metaphor and AIDS and its Metaphors* (New York: Doubleday, 1990)

Barbara Clow, “Who’s Afraid of Susan Sontag? or, the Myths and Metaphors of Cancer Reconsidered,” *Social History of Medicine* 14, 2 (2001), pp. 293–312

May 3 Reports

May 10 Reports

May 17 Final discussion