

Philosophy and the Natural Sciences in Nineteenth-Century Europe

Intermediate-Division Course

History & Humanities Center
Johns Hopkins University, Spring 2013

Prof. Larry S. McGrath
Office: Gilman 213
Office Hours: Fridays 1:00-3:00pm

lmcgrath@jhu.edu
Tuesday/Thursday 3:00-4:15pm
Gilman 215

Course Description

This course stages a historical dialogue between the philosophy and natural sciences of nineteenth-century Europe. Too often, philosophers and scientists are studied apart from each other, without regard for their overlapping concepts and debates. Our task will be to trace the interactions and reciprocal enforcement of metaphysical, biological, and psychological ideas. We will do so by investigating two foundational problems of the period: what is life and what is thought? The stakes of these problems turned on competing approaches to the natural world: mechanism and vitalism. Mechanists such as the physiologist Pierre Cabanis and the psychologist Herbert Spencer employed physical principles to analyze living organisms as machines whose internal workings depend on the interactions between particles in motion. Vitalists such as Xavier Bichat, the founder of histology, and the philosopher Henri Bergson argued that a vital principle endows organisms with life and explains the distinction between organic and non-organic substances. These debates animated the development of biology in the first half of the nineteenth century and of experimental psychology in the second half.

But the vitalism-mechanism debate did not take place in a vacuum. We will situate the emergence of biology and psychology in the cultural, political, and intellectual contexts of the long nineteenth century, extending from the French Revolution through colonial expansion, the revolutionary upheavals of 1848, and up to the First World War. These contexts illuminate the social and conceptual pressures that philosophers and scientists confronted, especially within the emergent laboratory and journal culture of modern Europe. We will also investigate the receptions of these new sciences by social and political movements such as socialism, the avant-garde, and nationalism.

Each week is divided into two sessions. In the first session, we will closely read primary texts. In the second, we will discuss secondary literature in order to situate the primary texts in their historical context.

Goals

1. Sharpen our historical methods by analyzing and comparing sources, posing historical problems, and weighing competing explanations in secondary literature.
2. Develop an understanding of the social resonance of science outside the laboratory by tracing the diffusion of biology and psychology beyond experimental practices.
3. Appreciate the emergence of contemporary sciences, especially the neurosciences and sociobiology, out of historical debates. Rather than dismiss vitalism or mechanism as “dead science,” we will probe the debt that the sciences of the present owe to the problems articulated by philosophers and scientists of the past.

Course Requirements

Participation: The course will meet twice a week. Careful reading of the assigned texts and active participation are essential. In addition, students are required to post a question or comment by each Wednesday evening (9pm) to the discussion board on backboard.jhu.edu. The online discussion will serve as a springboard for discussions in class.

Literature Review: Students will choose one weekly topic and research and compare two pieces of relevant secondary literature, including a journal article and a crowd-sourced document (such as a Wikipedia entry). During the eighth week, there will be a research practicum in the library, during which we will use EBSCO and the Directory of Open Access Journals, and further, discuss how to navigate the revision histories of Wikipedia pages for topics such as “psychopathology,” “epigenetics,” and “mechanism.” Reviews should be 5 pages long and are due the tenth week of the seminar.

Papers: There is a midterm and a final paper. Topics for the midterm paper (6 pages) will be distributed at the beginning of the fifth week. Midterm papers are due at the end of seventh week. Topics for the final paper (10 pages) will be distributed during the eleventh week. Final papers are due at the end of the exam period.

All papers must be composed in Times New Roman, with 12-point font and 1-inch margins.

Grade Breakdown:	Participation	20%
	Literature Review	20%
	Midterm Paper	20%
	Final Paper	40%

Required Readings

Many texts have been placed on course reserve at the library. Students should also purchase their own copies of the following texts:

Bergson, Henri. *Matter and Memory*. 1896. Trans. N. Margaret Paul and W. Scott Palmer. New York: Zone Books, 1990.

Darwin, Charles. *On the Origin of Species*. London: John Murray, 1859.

Marx, Karl. *Grundrisse: Foundations of the Critique of Political Economy*. 1857-8. Trans. Martin Nicolaus. New York: Penguin, 1993.

Accommodations

Students who plan to miss class due to religious observances, or students with disabilities seeking assistance, should notify me at the beginning of the term, either after class, during office hours, or via email.

Plagiarism and Academic Dishonesty

Plagiarism includes the reproduction of the work of others without quotation marks or attribution; paraphrasing or summarizing the work of others without attribution; using the work of another student as one’s own; and failure to cite sources for information not commonly known. Plagiarism and cheating are serious infractions and will result in a failing grade for the seminar and referral to the Dean of Student Life. See the guide on “Academic Ethics for Undergraduates” and the Ethics Board Web site (<http://ethics.jhu.edu>) for more information.

Schedule

Week 1	Why Care About Old Science?
Session 1	Introduction to the problem of life and thought in philosophy and the natural sciences. What separates the living from the inanimate? And what role does consciousness play in nature?
Session 2	Bergson, Henri. "The Metaphysics of Life: From <i>Leçons de Psychologie et de Métaphysique</i> given at Clermont-Ferrand, 1887-88." Trans. Michael Vaughan. <i>SubStance</i> 36, no. 3 (2007): 25-32.
Week 2	Two Models of Life: Vitalism vs. Mechanism
Session 1	Agutter, Paul S. and Denys N. Wheatley. "How Different are Organisms from Inanimate Objects?" In <i>Thinking about Life: The History and Philosophy of Biology and Other Sciences</i> . New York: Springer, 2008. 99-113. Hein, Hilde. "The Endurance of the Mechanism-Vitalism Controversy." <i>Journal of the History of Biology</i> 5, no. 1 (1972): 159-88.
Session 2	Rigotti, Francesca. "Biology and Society in the Age of Enlightenment." <i>Journal of the History of Ideas</i> 47, no. 2 (1986): 215-33. Williams, Elizabeth A. <i>The Physical and the Moral: Anthropology, Physiology, and Philosophical Medicine in France 1750-1850</i> . New York: Cambridge University Press, 1994. 67-114.
Week 3	The Physiological and the Psychological
Session 1	Bichat, Xavier. <i>Physiological Researches upon Life and Death</i> . 1800. Trans. Tobias Watkins. Philadelphia: Smith & Maxwell, 1809. pp. 1-64.
Session 2	Cabanis, Pierre. <i>On the Relations Between the Physical and Moral Aspects of Man</i> . 1802. Trans. Margaret Duggan Saidi. Baltimore: Johns Hopkins University Press, 1981.
Week 4	Vitalism and the French Revolution
Session 1	Maine de Biran. <i>The Influence of Habit on the Faculty of Thinking</i> . 1802. Trans. Margaret Donaldson Boehm. Baltimore: Williams & Wilkins, 1929. 47-84, 143-156, 189-200.
Session 2	Goldstein, Jan. <i>The Post-Revolutionary Self: Politics and Psyche in France, 1750-1850</i> . Cambridge: Harvard University Press, 2005.

Week 5 Philosophical Vitalism

- Session 1 Ravaisson, Félix. *Of Habit*. 1838. Trans. Clare Carlisle and Mark Sinclair. New York: Continuum, 2008.
- Session 2 Daston, Lorraine and Peter Galison, *Objectivity*. New York: Zone Books, 2010. Introduction, ch. 1.

Midterm topics distributed

Week 6 Experimental Science and Claude Bernard's Critique of Vitalism

- Session 1 Bernard, Claude. *An Introduction to the Study of Experimental Medicine*. 1865. Ed. Lawrence J. Henderson. Trans. Henry Copley Greene. New York: Dover, 1957. 5-26, 151-71, 196-225.
- Session 2 Normandin, Sebastian. "Claude Bernard and An Introduction to the Study of Experimental Medicine: 'Physical Vitalism,' Dialectic, and Epistemology." *Journal of the History of Medicine and Allied Sciences*. 62, no. 4 (2007): 495-528.

Week 7 Evolutionary Biology and the Problem of Teleology in Nature

- Session 1 Darwin, Charles. *On the Origin of Species*. London: John Murray, 1859. chs. 1-8, 14-15.
- Session 2 Sloan, Phillip R. "Darwin, Vital Matter, and the Transformism of Species." *Journal of the History of Biology*. 19, no. 3 (1986): 369-445.

Midterm papers due

Spring break

Week 8 Marxism, Mechanism, and the Aspirations of Scientific Social Analysis

- Session 1 Marx, Karl. *Grundrisse: Foundations of the Critique of Political Economy*. Trans. Martin Nicolaus. 1857-8. New York: Penguin, 1993. 81-112
- Session 2 Postone, Moishe. "Capital in Light of the Grundrisse." In *Karl Marx's Grundrisse. Foundations of the Critique of Political Economy One Hundred and Fifty Years Later*. Ed. Marcello Musto. New York: Routledge, 2008. 120-38.

Research practicum in the library

Week 9 Positivism: A Variant of Mechanism?

- Session 1 Haeckel, Ernst. *The Riddle of the Universe*. 1899. Trans. Joseph McCabe. New York: Harper & Brothers, 1900. chs. 1-3, 10, 11, 13, 14, 20.

Session 2 Simon, W. M. *European Positivism in the Nineteenth Century: An Essay in Intellectual History*. Ithaca, NY: Cornell University Press, 1963.

Week 10 Life as Time and Consciousness 1

Session 1 Bergson, Henri. *Matter and Memory*. 1896. Trans. N. Margaret Paul and W. Scott Palmer. New York: Zone Books, 1990. Ch. 1

Session 2 Grogin, R.C. *The Bergsonian Controversy in France 1900-1914*. Calgary: University of Calgary Press, 1988. 1-36.

Literature reviews due

Week 11 Life as Time and Consciousness 2

Session 1 Bergson, Henri. *Matter and Memory*. Chs. 2-3.

Session 2 Burrow, J.W. *The Crisis of Reason: European Thought, 1848-1914*. New Haven, CT: Yale University Press, 2000. 31-67.

Final paper topics distributed

Week 12 Lebensphilosophie in Germany

Session 1 Driesch, Hans. *The Science and Philosophy of the Organism Vol. 2*. 1906. London: Adam and Charles Black, 1908.

Session 2 Cassirer, Ernst. "The Argument over Vitalism and the Autonomy of Living Organisms." In *The Problem of Knowledge: Philosophy, Science, and History since Hegel*. 1950. Trans. William H. Woglom and Charles W. Hendel. New Haven, CT: Yale University Press, 1969. 188-216.

Week 13 Synthesizing Darwinism and Vitalism

Session 1 Bergson, Henri. *Creative Evolution*. 1907. Trans. Arthur Mitchell. New York: Dover, 1998. chs. 1, 3.

Session 2 Kern, Stephen. *The Culture of Time and Space, 1880-1918*. Cambridge, MA: Harvard University Press, 1983. chs. 1, 5, 6.