

PHIL 6355: Mind-Brain Relations**Course Description**

Standard philosophical accounts have it that there are three or four alternatives available when it comes to the mind-brain relationship: functionalism, reductionism, eliminativism, and perhaps functional reductionism. At least, that is how the options have been formulated over the past several decades. But recent work in the philosophy of mind, psychology, and neuroscience suggests that these stark alternatives are too simple for a proper understanding the mind-brain relationship. More nuanced accounts developed over the past decade or so indicate that there are a number of levels in the neurosciences, and that they map onto cognitive and psychological levels in a variety of ways. There are various relationships between neural and psychological structures, including composition, constitution, causation, and realization, yielding a number of different mind-brain relationships. Do these recent discussions force us to rethink our options when it comes to the mind-brain relationship? Do they provide a coherent alternative? This course will focus on a recent contribution to the exploration of these relationships, Carl Craver, *Explaining the Brain* (Oxford, 2008), as well as on related philosophical work that sheds further light on the diverse relationships between neural activity and psychological processes.

Course Requirements

Each week, we will be reading a chapter (or part of a chapter) of Craver's book, in addition to one or more articles relevant to the topic of that chapter. Course requirements will be as follows:

Weekly Comments and Class Participation (20%): As of Week 2 (Sept 16), comments on each week's readings will be due by 10:00 am on the morning of our seminar (Monday), on the Moodle discussion board. Comments should be approximately 300 words and take up some issue related to the readings; they are meant to raise questions and elicit discussion, not necessarily convey a polished argument or objection. Late comments will not be accepted and a comment cannot be fully credited unless a student is present at the relevant class session. You have the option of skipping one week's comments, in addition to the week that you will be presenting (two passes).

Expository Presentation (10%): After the first couple of weeks, presentation of the material will be shared between myself and other seminar members; each week, others will be presenting portions of the Craver book, while I will be presenting the other assigned reading for that week. The presentation schedule will be settled by the second meeting.

First draft of a term paper (25%): This will be a paper of 3000 words, due on 15 November, on a topic chosen from a list of topics that will be distributed around the middle of the semester. Based on comments on this first draft, students will be expected to revise and expand their papers.

Presentation in mini-conference (10%): During the final session of the course, we will have a series of brief conference-style presentations on topics related to the course content (these will be based on student term papers). Each of you will give a presentation based on the term paper and each of you will also be assigned the task of commenting on another student's paper. Papers should be distributed in advance to allow time for comments to be formulated.

Term paper (35%): This will be a paper of 6000 words, a revised version of the first draft, due on 16 December.

Course Schedule

* = Required reading; ** = Recommended reading

Week 1 (Sept 9): Introduction

Since the main book for the course, as well as some of the other readings, presuppose some familiarity with neuroscience, you might find it helpful to read up on some of the basics. I'll be posting resources on the Moodle course website, which supply some of the relevant background.

Week 2 (Sept 16): Mechanisms and Reduction

* Craver, *Explaining the Brain*, Chapter 1 (pp.1-20).

* Bickle (2003), *Philosophy and Neuroscience: A Ruthlessly Reductive Account* (Kluwer), pp.1-42.

** Machamer, Darden, and Craver (2000), "Thinking about Mechanisms," *Philosophy of Science* 67, 1-25.

Week 3 (Sept 23): Explanation

* Craver, *Explaining the Brain*, Chapter 2 (pp.21-62).

* Kitcher (1989), "Explanatory Unification and the Causal Structure of the World," in Kitcher and Salmon (eds.), *Scientific Explanation* (University of Minnesota Press 1989), excerpts.

** Salmon, *Causality & Explanation*, Chap 4

Week 4 (Sept 30): Causation

* Craver, *Explaining the Brain*, Chapter 3 (pp.63-106).

* Dowe, "Causal Processes," *Stanford Encyclopedia of Philosophy*

** Schaffer, "The Metaphysics of Causation," *Stanford Encyclopedia of Philosophy*

Week 5 (Oct 7): Functions and Mechanistic Explanation I

* Craver, *Explaining the Brain*, Chapter 4 (pp.107-139).

* Cummins (2000), "'How Does It Work?' vs. 'What Are the Laws?': Two Conceptions of Psychological Explanation," in Keil & Wilson (eds.) *Explanation and Cognition* (MIT Press).

** Kitcher (1999), "The Hegemony of Molecular Biology," *Biology and Philosophy* 14, 195-210.

Oct 14: No Class

Week 6 (Oct 21): Functions and Mechanistic Explanation II

* Craver, *Explaining the Brain*, Chapter 4 (pp.139-162).

* Bechtel (2009), "Looking Down, Around, and Up: Mechanistic Explanation in Psychology," *Philosophical Psychology* 22, 543-564.

** Haugeland (1998), "Mind Embodied & Embedded," in *Having Thought: Essays in the Metaphysics of Mind* (Harvard University Press).

** Wilson & Craver (2006), "Realization," in Thagard (ed.) *Handbook of the Philosophy of Psychology and Cognitive Science* (Kluwer).

Week 7 (Oct 28): Levels of Explanation and Levels of Nature

- * Craver, *Explaining the Brain*, Chapter 5 (pp.163-195).
- * Wimsatt (1994), "The Ontology of Complex Systems: Levels of Organization, Perspectives, and Causal Thickets," in *Re-Engineering Philosophy for Limited Beings* (University of Chicago Press).
- ** Oppenheim & Putnam (1958), "The Unity of Science as a Working Hypothesis," in *Minnesota Studies in the Philosophy of Science*
- ** Stevens, "A Million Dollar Question: Does LTP = Memory?," *Neuron* 20 (1998), 1-2.

Week 8 (Nov 4): Causal Relevance and Causal Powers I

- * Craver, *Explaining the Brain*, Chapter 6 (pp.196-211).
- * Kim (1992), "Multiple Realization and the Metaphysics of Reduction," *Philosophy and Phenomenological Research* 52, pp. 1-26.
- * Kim (2011), "Mental Causation," in McLaughlin, Beckermann, and Walter (eds.), *Oxford Handbook to the Philosophy of Mind* (Oxford University Press).
- ** Block (2003), "Do Causal Powers Drain Away?" *Philosophy and Phenomenological Research* 67, 133-150.

Week 9 (Nov 11): Causal Relevance and Causal Powers II

- * Craver, *Explaining the Brain*, Chapter 6 (pp.211-227).
- * Aizawa & Gillett (2009), "The (Multiple) Realization of Psychological and Other Properties in the Sciences," *Mind & Language* 24, 181-208.
- ** Kim (2003), "Blocking Causal Drainage and Other Maintenance Chores with Mental Causation," *Philosophy and Phenomenological Research* 67, 151-176.
- ** Prinz et. al. (2004), "Similar Network Activity from Disparate Circuit Parameters," *Nature Neuroscience* 7, 1345-1352.

Week 10 (Nov 18): Reduction and Integration

- * Craver, Chapter 7, *Explaining the Brain* (pp.228-271).
- * Bickle (2003), *Philosophy and Neuroscience: A Ruthlessly Reductive Account* (Kluwer), pp.43-105.
- ** Bliss & Collingridge (1993), "A Synaptic Model of Memory: Long-Term Potentiation in the Hippocampus," *Nature* 361, pp.31-39.

Week 11 (Nov 25)

TBA

Week 12 (Dec 2)

Mini-conference

Moodle

All students will be automatically added to the course's Moodle site. If you have not been added, please email me as soon as possible. Important announcements concerning the course and course policies, as well as many of the readings, will be posted on Moodle, so you are responsible for checking the Moodle site on a regular basis.

Access and Disability

Students with health-related, learning, physical, psychiatric, or sensory disabilities who require reasonable accommodations in teaching style or evaluation methods should discuss their concerns with me as soon as possible so that appropriate arrangements can be made.

Academic Honesty

All students are expected to abide strictly by standards of academic honesty. If you have not done so, please familiarize yourselves with the University Senate Policy on Academic Honesty: <http://www.yorku.ca/secretariat/policies/>