
Metaphysics Meets Cognitive Science: Objects, Causation, Time, and Self

(Spring 2020)

What, When, & Where

- Course #s : CGSC 492b, PHIL 492b/692b, PSYC 492b/692b
Distro Groups : Humanities + Social Sciences
When : Spring 2020, Thursday afternoons, 1:30 - 3:20 pm
Where : WLH 112
Webpage : <http://perception.yale.edu/MetaphysicsSem/>

To download readings and other materials, you must be logged in to Canvas via CAS.

Who

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Seminar Description

The premise (and promise) of cognitive science is that we will come to understand ourselves better by integrating the insights and contributions from multiple fields of inquiry. This interdisciplinary project has been especially vibrant when it has explored the intersection of Philosophy and Psychology (for example when work in ethics integrates empirical work from moral psychology, or when work in the philosophy of mind integrates neuroscientific studies of consciousness). But cognitive science has interacted far less with the study of *metaphysics* — the philosophical exploration of topics such as time, causation, and possibility. This may seem surprising, since there has been a great deal of fascinating empirical research on the mental representations and cognitive processes involved in such topics. Accordingly, this seminar will attempt to bridge this gap, exploring potential interactions between these fields. In particular, we will explore the possibility of a *cognitive metaphysics*, in which each field is enriched by consideration of the other. How might metaphysical theories raise questions or identify concepts of interest to working cognitive scientists? How might empirical studies from cognitive science on the nature of seeing and thinking contribute to the study of metaphysics? Specific topics will likely include the ways in which we understand the nature (in both the mind and the world) of space, time, objects, events, causality, persistence, and possibility. (And along the way, we'll also consider some more particular topics, such as the asymmetry between past and future experience, the apparent backwards causation in the context of Newcomb's puzzle, and why the present seems special.)

Course Format, Prerequisites, and Selection Process

This course will be run as an interdisciplinary reading and discussion seminar. Though there may be occasional mini-lectures and guest presentations, the usual format will involve an extended group discussion of a set of weekly readings focused on a particular aspect of 'cognitive metaphysics'. The exact topics that we cover will depend on the interests of the seminar attendees and the interest generated about specific research ideas. In almost all cases, however, the majority of the readings will be drawn from the primary research literatures in both philosophy (including both classical and contemporary work on metaphysics) and psychology (including cognitive psychology, psychophysics, neuroscience, and infant cognition).

The seminar is intended for graduate students and advanced undergraduates in Philosophy, Psychology, and Cognitive Science. There are no specific prerequisites, but we expect that students will have prior background in either philosophy or psychology. To ensure a relatively intimate forum for in-depth discussion, the seminar will be capped at approximately 20 students, so instructor permission will be required to attend after the first meeting. All participants should be prepared to discuss the material for each day of class in detail, and students will frequently be asked on the spot for their opinions and analyses.

If there are more interested students than available spots, then we'll detail a process for making the decisions during the first session (asking everyone to send us some information over the weekend), and we'll have the decisions made before the second session. So, to be considered, you must show up to (or contact us before) the first session.

Requirements and Evaluation

You will be expected to carefully study the background reading for each meeting, and to discuss the material in class. In addition, you'll submit brief (~ 1-2 page) weekly reading responses, and will complete a final seminar paper or project on a relevant topic of your own choosing. In more detail:

1. (20%) Participation in Discussions

Your major task: just come to the seminar each week prepared to actively and thoughtfully discuss the day's topic(s)!

2. (30%) Weekly Reading Responses

For each class, the next week's readings will be distributed along with a question to which you'll have to respond in a short (~ 1-2 page) essay. These questions will typically involve your own views on various theoretical issues involved in the readings, and they will often serve as the jumping-off point for the ensuing seminar discussion. Essay responses will be due no later than **5 pm on Tuesday** before the meeting when the relevant readings will be discussed — by email to both brian.scholl@yale.edu and la.paul@yale.edu (with no attachments, please!).

3. (50%) Final Paper or Project

The only other requirement for the seminar will be a final paper or project, due at the very end of the semester (typically a week before the final grades are due

— a date that may differ for different classes of students). This requirement is flexible: it can be met by a standard research paper or by a proposal for some experiments you think it would be interesting to run (approximately 12 pages [for undergraduates] or 20 pages [for graduate students] — keeping in mind that the exact requirements may differ depending on the type of paper that is being written), or perhaps by actually constructing and running a pilot experiment (with a brief write-up and/or class presentation). (For senior Psychology majors taking the seminar to fulfill part of their senior requirement, the minimum limit will be 5000 words, and the due dates may be a bit different.) In all cases, though, your final paper should somehow integrate work and themes from both metaphysics and cognitive science. We will discuss the nature of this paper more fully in class, and we will frequently highlight potential topics as we encounter them. And at some point near the end of the semester, we will also ask you to submit a brief list of brainstormed ideas for the paper, on which you'll receive feedback. We invite you to view this paper not as an irritating course-specific requirement, but rather as an opportunity to integrate the seminar with your own more general research goals beyond this seminar (e.g. forming the foundation of a senior thesis or even a published paper, as has often happened in previous seminars).

Tentative Schedule

The schedule below is certain to change, since the topics we cover (and how much time we spend on them) will depend on your interests — especially toward the end of the seminar. But this may serve as a rough guide to the kinds of topics we'll discuss:

<u>#</u>	<u>Date</u>	<u>Topic</u>
1	Jan 16 th	<i>Introductions and case studies: Metaphysics and cognitive science</i>
2	Jan 23 rd	<i>Time and temporal experience #1</i>
3	Jan 30 th	<i>Time and temporal experience #2</i>
4	Feb 6 th	<i>Objects and events #1</i>
5	Feb 13 th	<i>Objects and events #2</i>
6	Feb 20 th	<i>Causation, causal perception, and causal reasoning #1</i>
7	Feb 27 th	<i>Causation, causal perception, and causal reasoning #2</i>
8	Mar 5 th	<i>Persistence over time and change #1: Object persistence</i>
-	Mar 12 th	[No class: Spring break; go crazy]
-	Mar 19 th	[No class: Try to recover from poor decisions made the previous week]
9	Mar 26 th	<i>Persistence over time and change #2: The self</i>
10	Apr 2 nd	<i>Possibility and modality #1</i>
11	Apr 9 th	<i>Possibility and modality #2</i>
12	Apr 16 th	<i>Wildcard #1 (TBA depending on our collective interests)</i>
13	Apr 23 rd	<i>Wildcard #2 (TBA depending on our collective interests)</i>

Readings

A finalized reading list for the seminar as a whole is not possible, for a few reasons. In particular, we will try to let our seminar discussions determine our future foci to some degree — such that we might introduce new topics that come up organically, or we might end up spending more time on a few topics that we collectively find to be especially

fascinating and/or difficult. The exact readings for each meeting will always be distributed at least one week in advance (e.g. announced during the previous session), and will typically involve several papers, with a total of perhaps 30-60 pages per week.

Although we expect the brute amount of reading to be in line with most seminars, you might need to devote more time and study to these readings compared to some of your previous seminar experiences — if only because most of us might be rather less familiar with one of the relevant subfields, and we expect to assign readings from both philosophy and psychology for most meetings. (We expect to have many students with considerable background in either Philosophy or Psychology in our group, but we also expect there to be relatively few students with a great deal of background in *both* disciplines.)

The readings themselves will be drawn from several sources, including classical philosophical texts (e.g. by David Lewis, Derek Parfit, and Peter van Inwagen), contemporary articles from the philosophical literature (including book excerpts, but also articles from journals such as the *Journal of Philosophy*, *Nous*, and *The Philosophical Review*), and articles reporting empirical studies from leading psychology and cognitive science journals (e.g. *Cognition*, *Perception*, *Trends in Cognitive Sciences*).

Occasionally, different students may be asked to complete different auxiliary readings, so that we can cover more ground. Other times — quite often, actually — you may also be asked to read an additional paper (or paper excerpt) *of your own choosing*, based on citations and discussions in the main assigned papers (or, better, based on your own literature search). In either case, you should be prepared to summarize your auxiliary reading during our class meeting, and we will typically ask you to send it to us ahead of time, along with a 1-paragraph summary of what piqued your interest about it.

There will be no reading packet. All of the readings will be available online, and will be posted on our class webpage, where you can print them out at your leisure, or read them on your computer/tablet/phone/watch, etc.

Sample Readings

Though the specific topics that we cover (and how much we cover them) are subject to change based on our collective interests, here are some of the sorts of readings we may explore together — with a few sample papers listed per topic:

Discussion #1: Time and Temporal Experience

Sample Philosophical Readings

Callender, C. (2019). Time lost, time regained. In A. Goldman & B. McLaughlin (Eds.), *Metaphysics and Cognitive Science*. Oxford University Press.

Ismael, J. (2016). From physical time to human time. In Y. Dolev & M. Roubach (Eds.), *Cosmological and Psychological Time [Boston Studies in the Philosophy and History of Science, Volume 285]* (pp. 107-124). New York, NY: Springer.

Ismael, J. (2017). Passage, flow, and the logic of temporal perspectives. In C. Bouton & P. Hunemann (Eds.), *Time of Nature and the Nature of Time [Boston Studies in the Philosophy and History of Science, Volume 236]* (pp. 23-38). New York, NY: Springer.

Prior, A. N. (1972). The notion of the present. *Studium Generale*, 23, 245-248.

Williams, D. (1951). The myth of passage. *Journal of Philosophy*, 48, 457-472.

Sample CogSci Readings

Eagleman, D. M. (2008). Human time perception and its illusions. *Current Opinion in Neurobiology*, 18, 131-136.

Grondin, S. (2010). Timing and time perception: A review of recent behavioral and neuroscience findings and theoretical directions. *Attention, Perception, & Psychophysics*, 72, 561-582.

- Liverence, B. M., & Scholl, B. J. (2012). Discrete events as units of perceived time. *Journal of Experimental Psychology: Human Perception & Performance*, 38, 549-554.
- Buehner, M. J., & Humphreys, G. R. (2009). Causal binding of actions to their effects. *Psychological Science*, 20, 1221-1228.
- Choi, H., & Scholl, B. J. (2006b). Perceiving causality after the fact: Postdiction in the temporal dynamics of causal perception. *Perception*, 35, 385-399.

Discussion #2: Objects and events

Sample Philosophical Readings

- Kim, J. (1975). Events as property exemplifications. In M. Brand & D. Walton (Eds.), *Action Theory* (pp. 159-177). Dordrecht: D. Reidel.
- Lewis, D. (1986). Events. In *Philosophical Papers, Volume II* (pp. 241-269). Oxford University Press.
- van Inwagen, P. (1990). Four-dimensional objects. *Nous*, 24, 245-255.
- Fine, K. (2003). The non-identity of a thing and its matter. *Mind*, 112, 195-234.
- Heller, M. (1993). Varieties of four dimensionalism. *Australasian Journal of Philosophy*, 71, 47-59.

Sample CogSci Readings

- Scholl, B. J. (2001). Objects and attention: The state of the art. *Cognition*, 80, 1-46.
- Ongchoco, J. D. K., & Scholl, B. J. (2019). How to create objects with your mind: From object-based attention to attention-based objects. *Psychological Science*, 30, 1648-1655.
- Franconeri, S. L., Bemis, D. K., & Alvarez, G. A. (2009). Number estimation relies on a set of segmented objects. *Cognition*, 113, 1-13.
- Radvansky, G. A., & Zacks, J. M. (2017). Event boundaries in memory and cognition. *Current Opinion in Behavioral Sciences*, 17, 133-140.
- Kurby, C. A., & Zacks, J. M. (2008). Segmentation in the perception and memory of events. *Trends in Cognitive Sciences*, 12, 72-79.
- Ongchoco, J. D. K., & Scholl, B. J. (under review). The hierarchy of experience: Memory is differentially disrupted by global vs. local event boundaries.

Discussion #3: Causation, Causal Perception, and Causal Reasoning

Sample Philosophical Readings

- Lewis, D. (1973). Causation. *Journal of Philosophy*, 70, 556-567.
- Paul, L. A., & Hall, N. (2013). *Causation: A User's Guide* [Excerpts]. Oxford University Press.
- McGrath, S. (2005). Causation by omission: A dilemma. *Philosophical Studies*, 123, 125-148.

Sample CogSci Readings

- Scholl, B. J., & Tremoulet, P. D. (2000). Perceptual causality and animacy. *Trends in Cognitive Sciences*, 4, 299-309.
- Bechlivanidis, C., & Lagnado, D. A. (2016). Time reordered: Causal perception guides the interpretation of temporal order. *Cognition*, 146, 58-66.
- Moors, P., Wagemans, J., & de-Wit, L. (2017). Causal events enter awareness faster than non-causal events. *PeerJ*, 5:e2932.
- Wolff, P. (2007). Representing causation. *Journal of Experimental Psychology: General*, 136, 82-111.
- White, P. (2006). The causal asymmetry. *Psychological Review*, 113, 132-147.
- Kominsky, J., & Scholl, B. J. (under review). Retinotopic adaptation reveals distinct categories of causal perception.

Discussion #4: Persistence over Time and Change (Object Persistence)

Sample Philosophical Readings

- Chisholm, R. (1970). Identity through time. In H. Kiefer & N. Munitz (Eds.), *Language, Belief, and Metaphysics* (pp. 163-182). Albany: State University of New York Press.
- Quine, W. V. O. (1963). Identity, ostension and hypostasis. In *From a Logical Point of View* (pp. 65-79). New York: Harper and Row.
- Haslanger, S. (2003). Persistence through time. In M. Loux & D. Zimmerman (Eds.), *Oxford Handbook of Metaphysics* (pp. 314-354). Oxford: Oxford University Press.
- Merricks, T. (1997). Fission and personal identity over time. *Philosophical Studies*, 88, 163-186.
- Benovsky, J. (2015). From experience to metaphysics: On experience-based intuitions and their role in metaphysics. *Nous*, 49, 684-697.

Sample CogSci Readings

- Scholl, B. J. (2007). Object persistence in philosophy and psychology. *Mind & Language*, 22, 563-591.

- Flombaum, J. I., Scholl, B. J., & Santos, L. R. (2009). Spatiotemporal priority as a fundamental principle of object persistence. In B. Hood & L. Santos (Eds.), *The Origins of Object Knowledge* (pp. 135-164). Oxford University Press.
- Cherries, E. W., Mitroff, S. R., Wynn, K., & Scholl, B. J. (2008). Cohesion as a principle of object persistence in infancy. *Developmental Science*, *11*, 427-432.
- Rips, L., Blok, S., & Newman, G. (2006). Tracing the identity of objects. *Psychological Review*, *113*, 1-30.
- Schurigin, M., & Flombaum, J. (2017). Exploiting core knowledge for visual object recognition. *Journal of Experimental Psychology: General*, *146*, 362-375.

Discussion #5: Persistence over Time and Change (The Self)

Sample Philosophical Readings

- Lewis, D. (1976). Survival and identity. In A. O. Rorty (Ed.), *The Identities of Persons* (pp. 17-40). Berkeley, CA: University of California Press.
- Williams, B. (1970). The self and the future. *Philosophical Review*, *79*, 161-180.
- Parfit, D. (1971). Personal identity. *Philosophical Review*, *80*, 3-27.
- Wallace, R. J. (2013). *The View from Here: On Affirmation, Attachment, and the Limits of Regret* [Excerpts]. Oxford University Press.

Sample CogSci Readings

- Strohinger, N., & Nichols, S. (2014). The essential moral self. *Cognition*, *131*, 159-171.
- Starmans, C., & Bloom, P. (2018). Nothing personal: What psychologists get wrong about identity. *Trends in Cognitive Sciences*, *22*, 566-568.
- Haslam, N., Bastian, B., & Bissett, M. (2004). Essentialist beliefs about personality and their implications. *Personality and Social Psychology Bulletin*, *30*, 1661-1673.
- Molouki, S., & Bartels, D. (2017). Personal change and the continuity of the self. *Cognitive Psychology*, *93*, 1-17.
- Chen, S., Urminsky, O., & Bartels, D. (2016). Beliefs about the causal structure of the self-concept determine which changes disrupt personal identity. *Psychological Science*, *27*, 1398-1406.

Discussion #6: Possibility (Modality)

Sample Philosophical Readings

- McCoy, J., Paul, L. A., & Ullman, T. (2019). Modal prospection. In A. Goldman & B. McLaughlin (Eds.), *Metaphysics and Cognitive Science*. Oxford University Press.
- Loux, M. (1979). Modality and metaphysics. In M. Loux (Ed.), *The Possible and the Actual: Readings in the Metaphysics of Modality* (pp. 15-64). Ithaca, NY: Cornell University Press.

Sample CogSci Readings

- Phillips, J., & Knobe, J. (2018). The psychological representation of modality. *Mind & Language*, *33*, 65-94.
- Guan, C., & Firestone, C. (in press). Seeing what's possible: Disconnected visual 'parts' are confused for their potential 'wholes'. *Journal of Experimental Psychology: General*.
- Burns, P., McCormack, T., Jaroslawska, A., Fitzpatrick, A., McGourty, J., & Caruso, E. (2019). The development of asymmetries in past and future thinking. *Journal of Experimental Psychology: General*, *148*, 272-288.