Theory of Perception: Course Syllabus

INSTRUCTORS:

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Office Hours: M 1:00-2:00, F 11:30-12:30, Meliora 303D

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Office Hours: M 1:15-3:15, Lattimore 520

TIME AND LOCATION: MW 10:25 - 11:40, Lattimore 531

Course Description

This course will be an introduction to the theory and philosophy of perception, especially visual perception. We will be studying perception from the perspective of historical theories, contemporary philosophy and contemporary cognitive science and neuroscience. We will be addressing questions like: how much should perception be understood as bottom-up versus top-down? Do we directly "pick up" information about the world, or is there a process of conscious or unconscious inference involved in obtaining information from sensory input? Is there a meaningful boundary between perception and cognition? How much does what we normally think of as cognition permeate perception? What can we properly be said to see or perceive – that is, what are the contents of perception, especially visual perception? Do we just see colors and light that we then interprets objects in the world, or do we see more complex entities and states of affairs?

Policies

Please let us know right away if you need special accommodations because of a documented condition that interferes with your learning.

Alison's pronouns are she/her/hers. Richard's are he/him/his. Please email us at the beginning of the course letting us know your preferred gender pronoun: https://www.gsafewi.org/wp-content/uploads/What-the-heck-is-a-PGP1.pdf.

Please review the class schedule sometime in the next week and let us know if there are any issues. We do reserve the right to change the schedule as the semester progresses.

Please turn off your cell phones when you arrive.

The syllabus is subject to change as the semester progresses.

Student success at the University of Rochester includes more than just academic performance. Please feel comfortable speaking with us about challenges you are experiencing within and outside of the classroom so that we may submit a CARE report on your behalf. A CARE report is submitted when the level of concern for a student necessitates inclusive, multi-layered support from the campus community. The CARE network administrator shares information only with staff who need to know it in order to help you.

Honesty Policy

Students are encouraged to stay up late discussing the deep questions inspired by topics in the course and exchanging ideas. However, on assignments we take plagiarism and cheating seriously. As a rule of thumb, keep discussions of graded coursework *volatile* – that is, sketch ideas and study together, but do not share physical or digital copies of graded coursework. Feel free to share non-graded materials like course notes. Here's an instructive example:

- OK: you and a friend are writing final papers on similar topics. You meet to discuss the core arguments of a certain philosophical perspective, and your friend offers to share a link to a paper you should read.

- NOT OK: you and a friend are writing final papers on similar topics. They are struggling to summarize a certain philosophical perspective, so you offer your written summary of the idea as a starting point for them.

Exchanging *ideas* is encouraged! Exchanging *coursework* is a violation of the university's academic honesty policy. Don't hesitate to come to us with questions, clarifications, or concerns for yourself or your fellow students.

Assessment

Reading quizzes (10%):

There will be seven unannounced reading quizzes. They will very short and simple, graded as satisfactory or not, designed only to check if you have read. Each will be worth 2%. We will drop two automatically, which means if you attend fairly regularly it should be no problem to get to five. So, we will not allow makeups except under the *MOST EXTENUATING* of circumstances.

Response papers (40%):

There will be four three-page response papers assigned over the course of the semester. You must hand in all four, but we will drop the one with the lowest grade. These are a very good opportunity to explore what you might be interested in writing about for your final

paper. For each response paper, you may write on any one reading, or any combination of readings, assigned between the day that the previous response paper was due (including that day) and the day that the response paper is due (including that day).

Ideally, a response only <u>briefly</u> summarizes the most important or most interesting information in the reading(s) before transitioning to a more detailed reflection. Some questions to consider include "are the ideas here consistent or inconsistent with other readings we've discussed?", "what question do the authors attempt to address, and do they succeed? (Are you convinced)?", or "what *new* questions does this bring up, and how might you start addressing them?"

Participation (5%):

Attending class regularly, asking questions, and contributing to class discussion will contribute to this part of your grade. If you think you will be unable to meet this requirement for any reason, please see one of the instructors as soon as possible to discuss your options.

Final paper (45%):

You will write a ten-page final paper, either elaborating a topic covered in class or discussing a new topic. This paper can be written in the style of a philosophy paper (i.e., focused on elucidating a specific line of argumentation), as a cognitive science review article (i.e., employing references to argue for a particular perspective) or some effective combination of the two. The paper will be due on December 16th. You'll be required to propose a topic for your paper to the instructors in Week 12. Then submit a draft of your paper for peer editing in Week 14. You will have 1 week to read and review a paper by another student in the class then another week to make changes to this paper before handing in the final draft to the instructors. The draft will count for 5% of your final grade, and participating in the peer review will count for 5% of your final grade (out of the 45% for your final paper).

Course Schedule

The readings listed for each day are to be read *before* the lecture on that day. All of the required and many of the recommended readings will be on Blackboard.

- Week 1
  - August 29: Introduction
- Week 2 (Richard away at a conference)
  - September 3: LABOR DAY – NO CLASS
  - September 5: Representation
    - Crane: *The Mechanical Mind*, selection 1
    - Fish: Introduction to Philosophy of Perception

- Week 3
  - September 10: Towards an objective definition of representation
    - McDermott: *Mind and Mechanism*, chapter 5
  - September 12: Representation and information in vision
    - Palmer: Section 1.1 of Vision. You are not required to read the whole chapter, but it is posted, and if you have no cognitive science or neuroscience background, you may wish to.
    - QfC Chapter 6
- Week 4
  - September 17: Psychophysics
    - Ehrenstein & Ehrenstein (1999)
    - Kim & Blake (2005)
  - September 19: Representation and decoding in cognitive neuroscience
    - Kriegeskorte (2009)
    - Haynes & Rees (2006)
- Week 5
  - September 24: Bottom-up theories in the history of philosophy
    - Locke and Berkeley: Selections
    - Response paper #1 due
  - September 26: Bottom-up theories in the history of philosophy?
    - Reid: selections
- Week 6
  - October 1: Top-down theories in the history of philosophy
    - Shepherd: selections
    - Helmholtz: "Treatise on Physiological Optics", selections
  - October 3: Representationalism
    - Nanay: "Perceptual representation/perceptual content"
- Week 7
  - October 8: Sensation and representation
    - Byrne: "Intensionalism defended"
  - October 10: Sensation and representation
    - Inverted spectrum arguments: selections
- Week 8
  - October 15: FALL BREAK - NO CLASS
  - October 17: A more recent bottom-up theory
    - Gibson: "A Theory of Direct Visual Perception", selections
- Week 9
  - October 22: A more recent bottom-up theory
    - Goldstein: "The Ecology of J.J. Gibson's Perception"

- - - ■ Chemero: "An Outline of a Theory of Affordances"
      - ■ Response paper #2 due
    - ○ October 24: More recent bottom-up approaches
      - ■ Marr: selections
- ● Week 10
  - ○ October 29: More recent top-down approaches
    - ■ Ullman: "Tacit Assumptions in the Computational Study of Vision"
  - ○ October 31: More recent top-down approaches
    - ■ Rock: "Inference in Perception"
    - ■ Epstein: "Why do Things Look As They Do?" What Koffka Might Have Said to Gibson, Marr and Rock"
- ● Week 11
  - ○ November 5
    - ■ Lupyan: "Cognitive penetrability of perception in the age of prediction: Predictive systems are penetrable systems"
    - ■ Response paper #3 due
  - ○ November 7
    - ■ Macpherson: Reply to Lupyan
- ● Week 12
  - ○ November 12
    - ■ Firestone and Scholl: "Cognition does not affect perception: Evaluating the evidence for "top-down" effects"
    - ■ From Responses to Firestone and Scholl: TBA
  - ○ November 14: Attention
    - ■ QfC Chapter 9
    - ■ Treisman (1999)
    - ■ Proposal for final paper due
- ● Week 13
  - ○ November 19: Attention
    - ■ Campbell
    - ■ Response paper #4 due
  - ○ November 21: THANKSGIVING – NO CLASS
- ● Week 14 (Alison away at a conference)
  - ○ November 26: Multisensory perception, cue integration, & causal inference
    - ■ Shams & Beierholm (2010)
    - ■ Ernst & Banks (2002)
  - ○ November 28: Neurally-plausible models of inference
    - ■ Pouget (2013)
    - ■ Fiser (2010)

- ■ Paper draft due
- ● Week 15 (Richard maybe away at a conference)
  - ○ December 3: Cognitive penetration and perceptual justification
    - ■ Silins: "Cognitive penetration and the epistemology of perception"
  - ○ December 5: Cognitive penetration and perceptual justification
    - ■ Seigel: selections
- ● Week 16
  - ○ December 10: Time and Perception
    - ■ QfC Chapter 15
    - ■ Dennett & Kinsbourne "Time and the Observer"
  - ○ December 12: Neural networks
    - ■ Yamins & DiCarlo (2016)
    - ■ Peer-review due

FINAL PAPER DUE BY EMAIL DEC 16TH BY MIDNIGHT