

Phil 3550

Introduction to Cognitive Science

Fall 2019
Peabody Hall 220
T/Th 11:00-12:15

Instructor: René Jagnow
Office Hours: Th 12:30-2:00pm
and by appointment
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Course Description

Cognitive science is the interdisciplinary study of cognition. As such, it has its intellectual origins in the 1950's when researchers began to develop theories of mind based on computational procedures. Today, cognitive science has developed into a joint effort that involves psychologists, computer scientists, philosophers, linguists, and anthropologists. The goal of this course is to introduce students to some of the most central philosophical issues in cognitive science. The course will be divided into two parts. In the first part, we discuss a number of different historical approaches to cognition that consider the mind as a system that can be understood in isolation from the body and its environment: machine functionalism, the physical symbol system approach, the representational theory of the mind, and connectionism. In the second part, we will look at integrative approaches to cognition, according to which the mind can only be understood as embodied and situated in an environment.

Required Text

Andy Clark, *Mindware: An Introduction to the Philosophy of Cognitive Science*, 2nd edition, Oxford University Press, 2014 (available at the University Bookstore). All other texts will be available on the website for this course.

Course Requirements

1. *Reading Assignments*: I will assign readings for each session. It is very important that you keep up with the readings. Since many of the texts are difficult to understand, it is very important that you give yourself enough time to read them thoroughly. (Not graded)
2. *Blog Entries*: (15% of your final grade)

I will set up a blog for the class. You are required to write a weekly entry for this blog in response to a question that I will post. Your blog entry is due each week on Monday evening at 5pm and should be approximately 150 words long. The purpose of your blog entry is to review some of the material covered in class and to facilitate class discussion on Tuesday. I will not grade the quality of the individual blog entries. If you miss an entry or if you write a very sloppy entry, your final grade will be lowered by 1 percentage point.

3. *Three Written Assignments*:
 - (1) **One concept explication** (worth 15% of your final grade): 3-pages, 12pt font, double spaced. In this written assignment you are asked to explicate one concept discussed in class. I will provide you with a list of concepts to choose from. **Due 09/05.**
 - (2) **Short essay** (worth 30% of your final grade): The short essay should be no longer than 5 pages, double-spaced. In this essay you are asked to explicate and critique one argument from one of the texts covered in class. I will provide some possible topics. **Due 10/17.**

- (3) **Final essay** (worth 40% of your final grade): The final essay should be no longer than 8 pages. In this essay, you are asked to explicate and critique one argument from one of the texts covered in class. I will provide examples. **Due 12/03.**

Website

The course has a website on eLC. I will post various materials on this website.

Attendance

Attendance is required as a matter of University policy and will be taken in each class. You are expected to arrive on time for class and leave only when the whole class is dismissed. Should you wish to withdraw from the course, you should initiate the withdrawal in Athena before the withdrawal deadline October 21. If you have more than three unexcused absences, each subsequent unexcused absence will lower your final grade in the class by 3%. Participation in class discussion will help you to better understand the material, to correct and refine your own view of the issues and arguments, and to prepare for your written assignments.

Paper Extensions

Your papers are to be submitted on the date and time specified in the Course Outline. Should circumstances outside your control make this impossible, you *must* request an extension from me. This can be done via email or in-person before the due date.

Late Papers

All papers submitted late (without an extension) will be docked one half of a letter grade for every 24-hour period (or fraction thereof) after the assigned due date and time. Papers that are more than three days late (72 hours, counting from the date/time the paper is due) will not be accepted, and you will receive a failing grade (F) for that assignment.

Grading Policy

Papers and presentations will be given a letter grade A-F, including + and -. Submission of the paper proposal is pass/fail (either A or F). At the end of the semester all letter grades will be converted into their numerical equivalents, weighted appropriately and averaged. The average will then be converted back into a letter to obtain the final grade.

Letters to Numbers

A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D	1.0
F	0

Numbers to Letters

3.8-4.0	A
3.5-3.79	A-
3.2-3.49	B+
2.8-3.19	B
2.5-2.79	B-
2.2-2.49	C+
1.8-2.19	C
1.5-1.79	C-
0.5-1.49	D
0-0.49	F

Electronic Devices

It is the policy of this classroom that all electronic devices are to be off or silenced during class. This includes, but is not limited to: cell phones, laptops, tablets, and eReaders. If you are observed using electronic devices or should a device create a disturbance during class—for instance, if your phone rings—you may be asked to pack your things and leave the room. Exceptions: electronic devices are permitted in the event the Disability Resource Center has certified that you have a legitimate disability such that an electronic aid is necessary for you to learn.

Intellectual Honesty

All academic work must meet the standards contained in “A Culture of Honesty.” Students are responsible for informing themselves about those standards before performing any academic work. Students can access “A Culture of Honesty” at the following website: www.uga.edu/ovpi/honesty/culture_honesty.htm

Syllabus (subject to change)		
Week 1 Th 08/15	Introduction: <ol style="list-style-type: none"> 1. What is cognitive science? 2. What is the difference between cognition and mind? 3. Outline of the course 	Philosophical questions in cognitive science: Difference between mind and cognition.
I. Traditional Computational Approaches to Cognition		
1. Strong Artificial Intelligence Main theses: Cognition is formal computation over representations. The mind is like a computer program implemented in the brain.		
Week 2 Tu 08/20 Tu 08/22	Physical Symbol Systems (<i>Mindware</i> : Introduction, chapters 1 and 2, Appendix 1) Alan Turing, "Computing Machinery and Intelligence" Allen Newell and Herbert Simon, "Computer Science as Empirical Inquiry"	<ul style="list-style-type: none"> • Functionalism • Turing Test • Turing Machine • Physical Symbol System
Week 3 Tu 08/27 Th 08/29	Criticisms of the Physical Symbol System Hypothesis John Searle, "Minds, Brains, and Programs" Jack Copeland, "The Curious Case of the Chinese Room"	<ul style="list-style-type: none"> • Chinese Room Argument • Systems Reply
Week 4 Tu 09/03 Th 09/05	The Representational Theory of the Mind (<i>Mindware</i> , ch. 3, pp. 47-65) Jerry Fodor, <i>Psychosemantics</i> , ch. 1 Daniel Dennett, "True Believers: The Intentional Strategy"	<ul style="list-style-type: none"> • Folk Psychology • Propositional Attitude States • Intentional Stance
2. Connectionism Main thesis: Cognition is computation in neural networks.		
Week 5 Tu 09/10 Th 09/12	Connectionism (<i>Mindware</i> , ch. 4, pp. 69-81) John Tienson, "An Introduction to Connectionism" William Bechtel, "The Case for Connectionism"	<ul style="list-style-type: none"> • Problems with Strong Artificial Intelligence • Neural Networks: weights, activation function, backpropagation,

Week 6 Tu 09/17 Th 09/19	Connectionism and Folk Psychology (<i>Mindware</i> , ch. 4, pp. 81-86) Ramsey, Stich, and Garon, "Connectionism, Eliminativism, and the . . ." Ramsey, Stich, and Garon cont'd	<ul style="list-style-type: none"> Scientific Research Program Dispositional vs. Occurrent Beliefs Eliminativism
II. Interlude: <i>Qualia</i>		
Week 7 Tu 09/24 Th 09/26	Qualia and Physicalism: The Explanatory Gap (<i>Mindware</i> , Appendix II) Ned Block, "Concepts of Consciousness" Thomas Nagel, "What It Is Like to Be a Bat?"	<ul style="list-style-type: none"> Qualia Access Consciousness Phenomenal Consciousness
Week 8 Tu 10/01 Th 10/03	Qualia and Epiphenomenalism: The Knowledge Argument Frank Jackson, "What Mary didn't Know" Daniel Dennett, "Epiphenomenal Qualia"	<ul style="list-style-type: none"> Knowledge Argument Epiphenomenalism Ability Hypothesis
III. Embodied and Situated Cognition Main thesis: Cognition is a kind of interaction between brain, body, and world. Cognition does not involve computation over representations.		
Week 9 Tu 10/08 Th 10/10	Radical Enactivism about vision (<i>Mindware</i> , ch. 5, pp. 93-106) Alva Noë, Luiz Pessoa, Evan Thompson, "Beyond the Grand Illusion" Kevin O'Regan, Alva Noë, "On the Brain-Basis of Visual Consciousness"	<ul style="list-style-type: none"> Reconstructionist Approach to Vision Enactivism: Sensorimotor Contingencies Change Blindness
Week 10 Tu 10/15 Th 10/17	Criticisms of Radical Enactivism (<i>Mindware</i> , ch. 10, pp. 212-16) Jonathan Cohen, "The Grand Grand Illusion Illusion" Andy Clark, "Cognitive Complexity and the Sensorimotor Frontier"	<ul style="list-style-type: none"> The Grand Illusion Hypothesis Perceptual Priming Subpersonal Representations Sensorimotor Chauvinism

Week 11 Tu 10/22 Th 10/24	Intelligence without Representation: Autonomous Agent Theory and Dynamic Systems Theory (<i>Mindware</i> , ch. 6, pp. 118-128, 131-135) Rodney Brooks, "Intelligence without Representation," Barbara Webb, "A Cricket Robot" Timothy van Gelder, "Dynamics and Cognition"	<ul style="list-style-type: none"> • Situatedness • Embodiment • Emergence • Dynamical System • Autonomous Agents
Week 12 Tu 10/29 Th 10/31	Criticisms of Autonomous Agent Theory and Dynamic Systems Theory Fred Keijzer and Sacha Bem, "Behavioral Systems ..." Keijzer and Bem cont'd	<ul style="list-style-type: none"> • Cognitive Transition
Week 13 Tu 11/05 Th 11/07	The Extended Mind Thesis Andy Clark and David Chalmers, "The Extended Mind" Ken Adams and Fred Aizawa, "The Bounds of Cognition"	<ul style="list-style-type: none"> • Extended Cognition • Extended Mind • Derived vs. non-derived content • Cognition as a Natural Kind
Week 14 Tu 11/12 Th 11/14	Animal Minds John Searle, "Animal Minds" Eric Sidel, "Attributing Mental Representations to Animals"	<ul style="list-style-type: none"> • Searle's main argument • Goal-oriented vs. goal-directed behavior • Sidel's evolutionary argument
Week 15 Tu 11/19 Th 11/21	Mindreading in Animals Tomasello et al, "Animals Understand Psychological States" José Bermúdez, "Mindreading in the Animal Kingdom"	<ul style="list-style-type: none"> • Definition of mind-reading • Empirical evidence for mind-reading in chimpanzees • Different notions of mind-reading
Weeks 16/17 T 11/26 T 12/03	TBA Overview of some of the main ideas covered in this course	