

PHL 3530 – Cognitive Science

[Course Zoom Link](#)

Instructor Information

Name: Alex Madva (he/him)

Office Hours Location: Building 1, Room 329, and [Office Hours Zoom Link](#)

Office Hours: Tuesday 4p-6p (both in person ([Google Maps](#)) and online), and by appointment

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Course Information

Course Description

How does the mind work? Cognitive science tackles this question with tools from a wide range of fields, including experimental psychology, computer science, linguistics, neuroscience, philosophy, and others. First, we will raise basic philosophical questions about the nature of the mind. What must the mind be like if we can study it scientifically? Second, we turn to questions about Artificial Intelligence. Are our minds similar to digital computers? Can computers think? Third, we focus on the cognitive science of belief and perception. Can the complex machinery of the mind be understood in terms of its basic parts? Fourth, we conclude by critically examining claims about whether and how people of different genders “think differently.” Investigating what effects, if any, gender and sexuality have on patterns of cognition will require integrating research from biology, neuroscience, and developmental and evolutionary psychology. Spoiler alert: as we attempt to disentangle the complex interplay of “nature” and “nurture” in the formation of the mind, we will begin to appreciate just how much we *still don't know* about what makes us who we are.

Prerequisites

Lower division GE requirements in Area A, at least two sub-areas in Area B, and at least two sub-areas in Area C. This is an interdisciplinary GE Synthesis course satisfying Area B5 or C3.

Course Learning Objectives

Knowledge and Understanding

After completing this course, you will be able to demonstrate:

1. knowledge of how diverse fields of research across the sciences and humanities contribute to our understanding of the mind;
2. knowledge and understanding of basic philosophical questions underlying the science of the mind;

3. knowledge of the reasons, evidence, and arguments for and against competing theories of the mind, including dualism, behaviorism, mind/brain identity theory, and functionalism;
4. knowledge of basic concepts in cognitive science and philosophy of mind, including computation;
5. knowledge and understanding of the history and ongoing challenges facing the development of Artificial Intelligence;
6. knowledge of competing theories of perception, belief formation, habits, heuristics, and gender, sexuality, and cognition.

Skills

After completing this course, you will be able to:

7. interpret and synthesize complex ideas and views;
8. critically assess texts and arguments;
9. construct clear arguments;
10. take the perspective of scientists, philosophers, and classmates who may disagree with you;
11. present and debate ideas, both orally and in writing, in an open minded, respectful, and rigorous way.

Covid Safety

All CSU students are required to submit legitimate vaccination cards via the [Health Services web portal](#) by August 16, or pass weekly COVID-19 tests. (Faculty and staff will be required to do this as well.) Not complying with this policy may result in you being expelled from the university. Although I, as your instructor, am not allowed to ask you about your vaccination status, I strongly urge you to get vaccinated. Talk to your family physician or the health care professionals at Student Health Services if you have questions.

Cal Poly Pomona policy requires that everyone wear masks that cover the nose, mouth, and chin at all times indoors, regardless of vaccination status, unless you are alone. We will follow this rule in class. If you don't have a mask, ask for one and it will be provided. No eating or drinking is allowed during class. If you do not wear your mask and wear it properly, you will be asked to leave. Repeated violations may be reported to the Dean of Students.

In addition to this course needing to comply with university policies, I will enforce the mask rule because I care about your safety and wellbeing and your family's safety (and mine!). All available evidence supports proper mask wearing as a critical part of effective covid mitigation strategies.

Course Materials

Required Materials

There are no books to purchase. All assignments will be made available on Canvas or the web. I will provide attachments and links to these materials via email after each class. **You are therefore responsible for checking your CPP email after every class.** You will need to have access to these materials in class, either printed out or in digital form.

Also note: there are no “textbooks” in this course, in the sense that there are no authoritative texts that you are supposed to just accept and memorize. Everything is up for grabs and debate. You can always disagree!

Technical Requirements

Hardware

- PC, Mac, or tablet **with camera**
- Speakers or headphones
- Reliable access to a fast internet connection for teleconferencing

Software

- A PDF reader, such as [Adobe Acrobat Reader](https://get.adobe.com/reader/) (<https://get.adobe.com/reader/>)
- Word processing software, such as [Microsoft Office](#) or [Google Docs](#)

Students' Obligations

Minimum Technical Skills

You are expected to have or develop basic computer knowledge including, but not limited to:

- Using Zoom: video and audio, raising hand, and setting virtual background
- Using email and attachments
- Downloading, editing, saving, and submitting files
- Copying and pasting
- Downloading and installing software

Getting Help

I will work very hard to make this a fun, challenging, and worthwhile learning experience for you. I will provide you with the support you need to succeed in the course. I will ask you for suggestions for improvement and I will take those suggestions seriously.

Please let me know if you need help of any kind! If you are having trouble understanding concepts, or with any aspect of the course, it is your responsibility to seek help by contacting Alex. I want every one of you to succeed, and I'm committed to doing my best to ensure that you can learn and flourish during this difficult and uncertain time. **I am on your side!**

Canvas inquiries can be directed to the [IT Service Desk](#).

University Student Support

There are [many campus resources](#) available for students' needs. Here are a few that might be especially helpful:

- [Broncos Care Basic Needs](#) for students experiencing food or housing insecurity
- [Dean of Students](#), which includes the Cultural Centers, the Dreamers Resource Center, the Women's Resource Center, clubs, etc.
- [Learning Resource Center](#) for tutoring in many courses
- [Student Health and Wellbeing](#) – this website leads you to many student services including [Counseling](#), the [Disability Resource Center](#), [Health Services](#), the [Integrated Care Network](#), [Survivor Advocacy Services](#), and the [Bronco Wellness Center](#)
- [Student Success Central](#) – this website leads you to many resources including those related to COVID19.
- [Veterans Resource Center](#)

Grading

1. Attendance and Participation: 20%
2. Quizzes: 20%
3. First Paper: 15%
4. Second Paper: 20%
5. Third Paper: 25%

Extra credit: There will also be a variety of extra-credit opportunities, including responses to outside readings, films, and podcasts.

Attendance & Participation (20%)

This includes [attendance](#), [participation](#), and [in-class assignments](#). **Attendance is mandatory, as is showing up on time, as is remaining in class after attendance is taken.** I will track attendance and lateness on Canvas. Excused absences, late arrivals, early departures, and long absences from the middle of class require some kind of documentation, e.g., from a doctor, employer, internet service provider, or mechanic. Time-stamped photos can serve as documentation, but you do **not** need to share personal details with me.

Your web camera needs to be on during synchronous Zoom sessions, and your entire face must be visible (e.g., don't turn camera up so we can only see your eyes or forehead). If you would prefer for the class not to see where you are (e.g., to protect your privacy), [you can](#)

[set up a virtual or blurred background](#). You may need to **update Zoom** to change your background. If you have to turn off your video for more than a few minutes, or you are not comfortable or able to turn on your video on a specific occasion, you have to let me know through email or private Zoom chat. **Note:** Some students are distracted by the video of themselves, so [you can hide the video of yourself from yourself](#) (while still letting the rest of us see you).

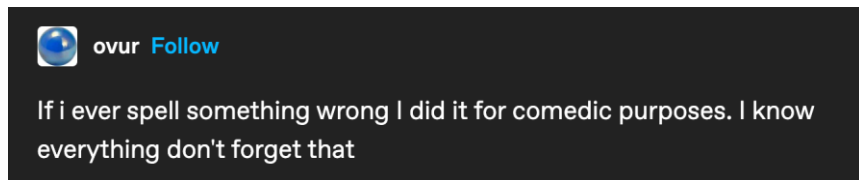
Participation and preparation are crucial. I will keep a running record of your participation throughout the term. There are a variety of ways to participate, including: actively contributing to discussions by [speaking or typing in the Zoom chat window](#), demonstrating reflection on the assignments, listening carefully to others' contributions (not dominating discussion), and showing respect toward classmates. If you are uncomfortable participating in class, I encourage you to visit my office hours, arrange an appointment, or contribute more to discussions on Canvas.

Speaking with me outside of class and posting (responsively and respectfully) on Canvas are as valuable for your final participation grade as speaking in class. **You cannot get above a B for attendance/participation if you do not participate.** However, students who participate regularly can **get above 100%**, which is one way to compensate for unexcused absences, or to (in effect) supplement your quiz average, etc. There may also be in-class debates and group work. PowerPoint slides and recordings of synchronous Zoom meetings will be posted to Canvas after class. You are expected to remain engaged in the class and take notes. I may decide to stop posting lecture slides if students are not paying sufficient attention.

The default setting when I hold Zoom Office Hours will be to only let one person in to speak with me at a time. However, if you want to come as a group, that's fine, too. Just let me know.

Put away phones: aside from the device you use to participate on Zoom (such as your PC, Mac, or tablet), put away smartphones or other secondary internet-connected devices during class, and refrain from checking social media—unless you get my express consent to have a secondary device. If I have to remind you to put away devices, I may deduct points from your attendance/participation grade.

Extra Credit Typo Policy: I give extra participation credit if you are the first person to identify typos in class handouts, assignments, and lecture slides (typos in assigned readings and in my emails and announcements don't count, unless my announcement gets a date or time wrong, or fails to include all the relevant attachments and links). Check Canvas to make sure you got your extra credit—and then email me to remind me if it's not posted! I am the final authority on whether it's a "real" typo.



Also, if my audio sounds funny or garbled, or I start talking on Zoom while muted, or I forget to record the class, the first person to point this out will get extra credit.

Quizzes (20%)

Most classes begin with a closed-book Canvas quiz (5-10 minutes) on the assigned material (readings, podcasts, videos, etc.). You will need an internet-connected device (phone, tablet, laptop) to take these quizzes (you can use either a web browser or the Canvas mobile app). The time allowed per quiz depends on the number of questions. A quiz with 8 questions might be 7 minutes long. If you arrive or start the quiz late, you may not be able to finish in time. I will drop your lowest quiz score (Canvas will drop the lowest score automatically when it calculates your quiz average).

Estimated Quiz Curve

The quizzes tend to be very difficult, but they are graded on a generous curve. The curve will be applied at the end of the term, but a rough guide to the quiz curve is the following:

93% = A+ (100; if above 93% → then above 100 after curve); 86% = A (94), 78% = A- (90), 73% = B+ (87), 66% = B (84), 61% = B- (80), 56% = C+ (77), 51% = C (74), 46% = C- (70), 41% = D+ (67), 38% = D (64), 35% = D- (60), 33% or below = F

Grades Scored Between	Will Equal
93 % and 100 %	A+
86 % and Less Than 93%	A
78 % and Less Than 86%	A-
73 % and Less Than 78%	B+
66 % and Less Than 73%	B
61 % and Less Than 66%	B-
56 % and Less Than 61%	C+
51 % and Less Than 56%	C
46 % and Less Than 51%	C-
41 % and Less Than 46%	D+
38 % and Less Than 41%	D
35 % and Less Than 38%	D-
0 % and Less Than 35%	F

Note: some students find that quizzes don't represent the work they put into the assignments. All students therefore have the option of supplementing their quiz scores by writing one response to the homework assignments per week. Upload the assignment response to Canvas before the class that the reading is assigned for. See Assignment Response Guidelines at the end of this syllabus.

Note: If you miss a quiz, your score for that quiz will be zero, unless you have an excused absence.

Papers (60%)

There will be three short paper assignments (600-1,000 words). There may be additional activities paired with the writing assignments, which would form part of your grade for that paper, such as peer evaluation workshops for rough drafts. Estimated deadlines: 9/24, 10/22, and 12/6. These due dates are very rough approximations.

My expectation is not that you already know how to write an excellent philosophy paper but that you will build the necessary skills to do so by taking this course. We will dedicate significant time and work on cultivating these skills in class. All papers will be graded according to a rubric, which we will review in a future class, and which you can download now from Canvas in the Files section on the left navigation menu.

The **grading scheme for both your papers and your final grade** is as follows:

97 and above	A+		74 and less than 77	C
94 and less than 97	A		70 and less than 74	C-
90 and less than 94	A-		67 and less than 70	D+
87 and less than 90	B+		64 and less than 67	D
84 and less than 87	B		60 and less than 64	D-
80 and less than 84	B-		Less than 60	F
77 and less than 80	C+			

Make-Up and Late Work Policies

I will do my best to grade your work in a fair and timely manner. I will work with you if life gets in the way of completing the work for this class. I am open to granting extensions on paper assignments if there are extenuating circumstances. However, **I can only work with you if you contact me about events that obstruct the completion of classwork**. So, please contact me before assignments are due, if you anticipate having a problem with turning work in when it's due. Of course, sometimes there are genuinely unforeseen events that prevent you from completing work in a timely fashion. If that happens, I'll work with you to help you successfully complete the course.

Late papers will be penalized one third of a letter grade for every day late. After 1 day late, an A becomes an A-; after 2 days, an A becomes a B+, and so on. There is no final deadline for how late I will accept work (it is never too late to get some credit for a paper!).

Course Policies

Academic Integrity

The University trusts each student to maintain high standards of honesty and ethical behavior. I will observe Cal Poly Policies on Honesty and Plagiarism. While teamwork is encouraged, any kind of cheating is unacceptable. We will use TurnItIn and other digital tools to help ensure that assignments are not plagiarized. **Students that fail to observe honesty and plagiarism policies will fail the course, and their cases will be reported to the Judicial Affairs Committee.** We will go over the expectations of academic integrity in a future class, and I will distribute an online survey for each student to complete. For more information, visit [Academic Integrity Policies](#).

Netiquette

Netiquette refers to the behavior that you are expected to follow when communicating online. It covers both common courtesies in an online environment and the informal ground “rules” for navigating in cyberspace. For this course, you are asked to follow these basic guidelines:

- When writing an email to Alex, include the class name and section, along with a description, in the subject line. For example: PHL 1234.01 RE: Truth.
 - Remember the perspective of the person you’re interacting with. Telling me which section you’re in is like writing a “K” on yourself so that others can read it. So if you email me without saying what section you’re in, I may send you this gif:



- Use a signature with your full name at the end of your emails.
- Remember that slang can be misunderstood or misinterpreted – use your “academic” voice. pls dnt use txt lang when sending messages 2 me.
- Be aware of your tone and avoid sentences typed in all caps – it implies online “screaming” or “shouting.”
- Do not use offensive language.
- Be sensitive to those with different cultural or linguistic backgrounds, as well as different political and religious beliefs.
- Respect different views and opinions.
- Provide constructive feedback and use good judgment when composing responses to your classmates.
- Be professional and use good grammar and spelling. Consider writing your discussion posts, assignments, and online correspondence in a text editor to check for spelling and grammar before pasting it into an online submission.

Response Time and Feedback

I will reply to emails within 24 hours, or 48 hours over the weekends. I will grade papers and optional assignment responses within 1 to 2 weeks. I will check Canvas discussion posts a few times a week. If I don't get back to you within these timeframes, please send a follow-up email to remind me!

Accessibility

I am dedicated to providing students with the support they need to succeed in this class. Students with disabilities are encouraged to meet with me during office hours early in the semester to discuss your DRC authorized accommodation needs for this course. For additional information or assistance, contact the [Disability Resource Center](https://www.cpp.edu/drc/) (<https://www.cpp.edu/drc/>) ((909) 869-3333, Bldg. 9-103).

Course Schedule

Note: the readings, assignments, deadlines, and schedule are **tentative and subject to change**. I will confirm the specific upcoming assignments in every class and shortly after class via email. **You are therefore responsible for checking your CPP email after every class.** (If you are not already registered for the class, I need your email address now so I can add you to Canvas and/or email you the first assignment. If you do not receive the first assignment via email, then you should proactively email me to make sure that I send it to you.)

- If you check your email with Outlook on a smartphone, beware that my announcement emails might go into your "Other" tab. So: move them to "Focused," or make sure to check "Other," or tell Outlook not to distinguish "Focused" and "Other."

Week 1: NO SYNCHRONOUS CLASS THIS WEEK! (8/19)

1. Log into Canvas and poke around the site
2. Read the syllabus
3. Set up a Zoom account through CPP
4. Test your Zoom video and audio by starting a Zoom chat with a friend or family member
5. Listen to *Hidden Brain* episode with Jennifer Morton, "[Between Two Worlds](#)"
6. Read Shaun Ossei-Owusu, "[More Mobility, More Problems](#)"
7. Optional: Watch interview by Brandon Busteded with [Jennifer Morton about common challenges for students who are the first generation in their family to go to college](#)

Week 2 (8/24; 8/26): Course Prep & Intro to Dualism

General course prep

1. Complete the "Tell Me About You" survey

2. Set up a virtual or blurred Zoom background for beginning of class on 8/24
3. Watch all the Syllabus videos and memorize...
 - o Course grading and requirements (determinants of final grade)
 - o Attendance and participation requirements
 - o Quiz guidelines
 - o Optional Assignment Responses guidelines
 - o Technology requirements
 - o (You do NOT need to memorize the class schedule or dates!
You do NOT need to memorize the quiz curves)
4. Watch "[Introducing FOH: Faculty Office Hours](#)" (video)
5. Susan Dynarski, "[Laptops Are Great. But Not During a Lecture or a Meeting](#)"
6. Demonstrate knowledge of the above on the first Canvas Quiz
7. Meet me and your classmates!

Course content

1. Suilin Lavelle's [intro to dualism](#) (video)
2. "[Where Does Your Mind Reside?: Crash Course Philosophy #22](#)" (video)
3. "[The Uncanny Valley](#)" (video)
4. Paul Bloom, "[Natural-Born Dualists](#)"
Note: Just read Bloom's main article, not the comments and replies. Also: you can use the text-to-speech function in apps like Pocket or add-ons to Google Chrome to listen to the article.
5. Melanie Challenger, "[The joy of being animal](#)"
6. Study the terms we covered in class from the "Terms" handout
7. Demonstrate engagement with the above assignments on the 1st and 2nd Canvas quizzes.
8. Optional: 2 more YouTube videos on philosophical questions about dualism [here](#) & [here](#).

Week 3 (8/31; 9/2): Behaviorism, Physicalism, Consciousness

1. Micah Buzan, "[The Spotlight Effect – Social Psychology & Making Art](#)"
 - a. ^ this video may help you feel more comfortable participating in class!
 - b. Optional: for more on the research behind the Spotlight Effect, [watch this](#)
2. Hidden Brain, "[When Things Click: The Power of Judgment-Free Learning](#)" ([Transcript](#))
3. David Armstrong, "The Nature of Mind" (259-264; stop at paragraph break near top of 264)
4. Finish David Armstrong, "The Nature of Mind"
5. "[Highway hypnosis is real – and it happens to you](#)"
6. Michael S. A. Graziano, "[What is consciousness?](#)"
7. "[Armstrong's Nature of Mind: what is the mind?](#)" (video)
8. Optional: series of [5-minute videos](#) going through each step of Armstrong's paper
9. Optional: Stephen Gimbel, Redefining Reality, Episode 13, "[Quantum Consciousness](#)" (you'll need to set up an account with Kanopy, which we have access to through CPP)
10. Optional: Philip Goff, "[The Zombie Argument Against Physicalism](#)"

Week 4 (9/7; 9/9): Functionalism & Computation

1. Rewatch the "Optional Assignment Response" instructional video
2. Michael Lacewing, "Identity Theory"
3. Thomas Polger, "[Functionalism](#)," *Internet Encyclopedia of Philosophy*, Sections 1-2
4. Suilin Lavelle, "[Physicalism, Identity Theory, and Functionalism](#)"
5. Michael Pollan, "[Plant Neurobiology - Commentary - The New Yorker](#)" (video)
 - a. Optional: Ferris Jabr, "[The Social Life of Forests](#)"
6. Cláudio L. Guerra, "[Why the octopus brain is so extraordinary](#)"
7. Carlo Rovelli, "[What we can learn from the octopus mind](#)"
8. Maybe optional: Carl Zimmer, "Scientists Partially Restored a Blind Man's Sight With New Gene Therapy"
9. **1st Paper Assignment Distributed**
10. Suilin Lavelle, [more on functionalism](#)
11. Eleanor Nelsen (on F. Jackson), "[Mary's Room: A philosophical thought experiment](#)"
12. Susan Barry, "[Fixing My Gaze](#)" (real-life version of Mary, discovering depth perception?)
13. David Anderson, "[What is a computer?](#)". Just read first page, not second page on "classical vs. non-classical" computers
14. David Anderson & Kari Cox, "[The Turing Test](#)"
 - a. Since Flash doesn't work anymore, you can do the interactive part of the Turing Test article with the "Turing Game" PPT.

Week 5 (9/14; 9/16): Writing Guidelines & Early History of AI

1. Jim Pryor, "[Guidelines on Writing a Philosophy Paper](#)"
2. Watch Alex's "How to Write a Philosophy Paper" videos
3. Study Paper Rubric and prepare to answer questions about it
4. Elizabeth Lopatto, "[The AI That Wasn't: Why 'Eugene Goostman' Didn't Pass the Turing Test](#)"
5. 99% Invisible, "[The ELIZA Effect](#)"
6. Alan Turing, "Computing Machinery and Intelligence," pp.433-447 (stop at the beginning of section 5)

Note: the Turing article is very difficult. Here is an (optional) article that goes through many of the key arguments in detail, by Graham Oppy and David Dowe, "[The Turing Test](#)." (Also, content warning)

Week 6 (9/21; 9/23): Functionalism, Computation, & AI

1. Simon Rippon, "[A Brief Guide to Writing the Philosophy Paper](#)" (at least 30 minutes class time)
 - o Quiz questions will ask how Rippon's advice differs from Alex's guidelines
2. Review academic integrity in class; fill out academic integrity survey
3. Finish Turing (447-460)
4. Listen to *This American Life*, "[How I Read It: Prologue](#)" (10min)

5. Suilin Lavelle, "[Functionalism and Functional Complexity](#)"
6. Andy Clark, selections from *Mindware*
 - Note: the Andy Clark selections are relatively large PDFs that may take a minute to download. If you click on "Readings," you can find reduced file size versions of the PDFs. They're blurrier, though.
 - From Andy Clark's chapter on "[Meat Machines](#)," read the text boxes on "Syntax and Semantics" (p.10), "A Turing Machine" (p.12), and "What is computation?" (p.17-8).
 - From Andy Clark's chapter on "[Symbol Systems](#)," read the first section "2.1 Sketches", including the text boxes on the "Restaurant Script" and "SOAR" (pp.30-6).
7. **1st Paper Due**

Week 7 (9/28; 9/30): Problems for Functionalism & AI

1. John Searle, "Minds, Brains and Programs" (up to p.420, stop before "Robot Reply")
2. Suilin Lavelle, "[Minds vs. Machines: The Turing Test and the Chinese Room](#)"
3. Finish Searle for Thursday
4. Margaret Boden, "Escaping from the Chinese Room" (read entire PDF up until the start of the new section on the last page) (optional readings and videos on next page)
5. Optional: Kane B, "[Objections to Functionalism](#)"
6. Optional: Ulrich Neisser, "The Imitation of Man by Machine"
7. Optional: Radiolab, "[Loops](#)," podcast on the possibility of humans lacking free will...
8. Optional: John Searle, "[Our Shared Condition – Consciousness](#)" (TED talk)
9. Optional: A. Dneprov, "The Game" (1961), [A Russian Chinese Room story antedating Searle's 1980 discussion](#)
10. **2nd Paper Assignment Distributed**

Week 8 (10/5; 10/7): AI: Past Obstacles and Current Opportunities

1. Watch "[Viewing Your Feedback on TurnItIn](#)"
2. Paul Churchland and Patricia Churchland, "[Could a Machine Think?](#)"
3. Read Terry Bisson's very short story, "[Alien/Nation](#)", or you can [watch a film version here](#)
4. Invisibilia, "[The Remote Control Brain](#)"
5. Hubert Dreyfus, "Standing Up to Analytic Philosophy and Artificial Intelligence at MIT in the Sixties"
6. John Long, Robotics Episode 7, (Kanopy) "[Animal-Inspired Robot Behavior](#)"
7. Jason Tanz, "[Soon We Won't Program Computers. We'll Train Them Like Dogs](#)"
8. CGP Grey, "[How Machines Learn](#)"
9. Optional further reading: Cliff Kuang, "[Can A.I. Be Taught to Explain Itself?](#)"

Week 9 (10/12; 10/14): Writing Refresher & Self-Driving Cars

1. Begin rewatching Writing Guidelines videos
2. Boston Dynamics, "[Atlas](#)" [robots](#)
3. Boston Dynamics, "[Spot hands-on: new dog, new tricks](#)" (2019)
4. Boston Dynamics, "[Atlas and Handle](#)" (2020)
5. Boston Dynamics, "[Do You Love Me?](#)" (2020)
6. Boston Dynamics, "[Spot's Got an Arm](#)" (2021)
7. Boston Dynamics, "[Spot](#)" [dances to K-pop](#) (June 2021)
8. "[27](#)" video on artificial intelligence
9. Watch "[What is Google DeepDream?](#)"
10. Lee Gomes, "[Driving in Circles](#)" – note this article is from 2014 and is somewhat dated, but it nevertheless makes important points that we still have to take seriously (as you'll see in the Piper article)
11. Timothy B. Lee, "[Driverless cars became a reality in 2017 and hardly anyone noticed](#)"
12. Kelsey Piper, "[It's 2020. Where are our self-driving cars?](#)"
13. Maybe: Eric Adams, "[Why we're still years away from having self-driving cars](#)"
14. Kelsey Piper, "[GPT-3, explained: This new language AI is uncanny, funny — and a big deal](#)"
15. Optional video with more technological details: John Long, Robotics, Episode 14, "[Self-Driving Cars](#)"
16. Optional further material on autonomous vehicles: Brad Plumer, "[5 big challenges that self-driving cars still have to overcome](#)"; Alex Davies, "[Uber May Be Aflame, but Its Self-Driving Cars Are Getting Good](#)"; "[Why Uber's self-driving car killed a pedestrian](#)" (May 2018); Troy Griggs and Daisuke Wakabayashi, "[How a Self-Driving Uber Killed a Pedestrian in Arizona](#)"

Week 10 (10/19; 10/21): The Architecture of the Mind: Belief

1. Finish rewatching Writing Guidelines videos
2. Daniel Gilbert, "What the Mind's Not"
3. Daniel Gilbert, "How Mental Systems Believe" (read up until p.110, "Breakdown of Belief," although we most likely won't start discussing this until Thursday)
4. Finish "How Mental Systems Believe"
5. **2nd Paper Due**

Week 11 (10/26; 10/28): Belief Formation

1. Jeremy Dean, "[Why You Can't Help Believing Everything You Read](#)"
2. "Assorted Selections related to Spinozan theory of belief"
3. You Are Not So Smart podcast, David McRaney interviews Ben Tappin, "[Desirability Bias](#)"

4. Ben Tappin, Leslie Van Der Leer, and Ryan McKay, "You're Not Going to Change Your Mind"
5. Optional: Ben Tappin, Leslie van der Leer, and Ryan McKay, "The Heart Trumps the Head: Desirability Bias in Political Belief Revision"
6. Chris Street and Alan Kingstone, "Aligning Spinoza with Descartes: An Informed Cartesian Account of the Truth Bias"
7. Eric Mandelbaum, "Thinking Is Believing" (pp.69-81; start at the beginning of Section IV and stop at the beginning of Section V.ii)
8. Maybe optional: Lee McIntyre, "[How Cognitive Bias Can Explain Post-Truth](#)"

Week 12 (11/9; NO CLASS 11/11): Belief Revision & Perception

1. Rewatch paper instructions and advice highlights videos, and paper topics video
2. Linda and Charlie Bloom, "[Beware of the Perils of Confirmation Bias](#)"
3. Optional: Grace Helton, "If You Can't Change What You Believe, You Don't Believe It"
4. David Anderson & Robert Stufflebeam, "[Introduction to the Science of Vision](#)"; "[Methods Used in the Study of Vision](#)"; "[Perception: An Introduction](#)" (read [Page 1](#), [Page 2](#), and [Methods Used to Study Perception](#)")
5. Brain Games video on some [visual illusions](#)
6. If there's time: Brian Resnick, "[The Silent 'Sixth' Sense](#)"
7. Today, Explained, "[The Sixth Sense \(the real one\)](#)"
8. Brian Resnick, "[Let's obliterate the myth that humans have a bad sense of smell](#)"
9. Today, Explained, "[No one nose](#)"
10. Optional: "[Spinozan minds: Neural and psychophysiological evidence toward Gilbert's models of belief](#)"
11. Optional: Uwe Peters, "On the Automaticity and Ethics of Belief"
12. Optional: Malcolm Gladwell, Revisionist History, "[Queen of Cuba](#)"
13. **Final Paper Assignment Distributed**

Week 13 (11/16; 11/18): Gut Feelings & World Philosophy Day

1. "[Should You Trust Your Gut Instinct?](#)"
2. Gerd Gigerenzer, *Gut Feelings*, "Winning without Thinking" (pp.8-13), "The Best Pops Up First" (pp.32-6), "How Intuition Works" (ch.3, pp.40-53), "The Adaptive Toolbox" (pp.60-3), and "Adaptive Goals" (pp.63-6).
3. 11/18: WORLD PHILOSOPHY DAY! We might have a Philosophy Department Zoom event.

Week 14 (11/23; 11/25; NO CLASS ALL WEEK; HAPPY THANKSGIVING)



Week 15 (11/30; 12/2): Actions & Habits; Gender & Cognition

1. Charles Duhigg, "The Habit Loop" and other excerpts from *The Power of Habit*, pp.12-21 (stop at III), 25-27 (stop at IV); 44-52 (stop at IV); 70-78 (stop at III)
2. The Happiness Lab, "[How to Kick Bad Habits \(and Start Good Ones\)](#)"
3. Maria Konnikova, "[The Surprising Science of Yawning](#)"
4. Optional: Peter Railton, in "The Affective Dog and its Rational Tale"
5. Optional: Hidden Brain, "[Creatures Of Habit: How Habits Shape Who We Are — And Who We Become](#)"
6. Jennifer Saul, "Women's Different Voice" (skip pp.213-215)

More on gender, sexuality, and cognition (if there's time)

The readings below will be optional readings for your final paper.

1. Rebecca Jordan-Young, *Brain Storm: The Flaws in the Science of Sex Differences*, Jordan-Young, Ch.1, pp.1-18 and Ch. 3, pp.48-54; (if there's time, Ch.8, 228-236), Ch.9, "Taking Context Seriously;"
2. Optional: Check out video interviews and lectures by Jordan-Young [here](#)
3. Lecture excerpt and Philosopher's Zone interview of Cordelia Fine, "[Blinded by sex: gender and the brain](#)"
4. Daphna Joel and Cordelia Fine, "[There are many ways to be male and female](#)"
5. *Brain Storm*, Ch. 10, "Trading Essence for Potential" (entire)
6. Optional: Melinda Wenner Moyer, "[These Ideas About Sexual Attraction May Be Based on Shoddy Science](#)"; Sharon Begley, "[Can we blame our bad behavior on stone-age genes?](#)"; Nadia Drake, "[Prehistoric Women Had Stronger Arms than Modern Athletes](#)"
7. Optional example of **bad** brain science reporting: Lori Oliwenstein, "The Most Important Sex Organ"

Finals Week

There is no final exam. **Final Paper Due**

Guidelines for the Quizzes and Optional Assignment Responses

I recognize that many of the readings and other assignments are difficult.

- Most quiz questions will not assume that you have perfectly understood the material.
- **Pointer #1**: pay attention to the **specific examples (metaphors, stories, etc.)** used by the authors to make their points. The specific examples are the most likely to show up on the quizzes.
- **Pointer #2**: bear in mind that I often try to come up with questions that don't show up in summaries of the material, e.g., on Wikipedia or other online sources. I want you to complete the actual assignment and not just get a quick summary from somewhere else.

Still, some students find that the quizzes don't represent the work they put into the assignments.

- All students therefore have the option of supplementing quiz scores by writing one homework assignment response per week. (P.S. Writing the responses helps with the quizzes!)

Optional Assignment Response (O.A.R.) Guidelines

Option to supplement your quiz score:

- Once per week, you can write a homework assignment response and upload it to Canvas
- You can start uploading Optional Assignment Responses (or OARs) right away, for the first assignment
- **The OARs are entirely optional**. There is no penalty for not doing them. You can skip it one week, then do it the next, etc. There will be other extra-credit opportunities, which usually go toward your quiz grade.

Upload Instructions

- Click on the "Assignments" link on the Canvas menu (left ribbon).
- Click on "Optional Assignment Responses" and then scroll all the way down to "Drag a file here, or Choose a file to upload" to upload your document.
- You will upload every response to this exact same place.
- Submit your assignment response in .pdf, .doc, or .docx form.

- If you have difficulty uploading your paper, you can email it to me to establish that it's on time, but **you must upload it to Canvas eventually.**
- **You must upload the response before the class that the reading is assigned for.** Not *after* we have already discussed the material in class!
- Upload it up to 1 minute before class begins.

Assignment Response Requirements

- **OARs should be at least 350 words (the word count does not include the date, your name, etc.). Formatting: Times New Roman, 12 point font, double-spaced. This should come out to about 1-and-a-half pages.**
- **If you do not meet the word minimum, you will get no extra credit for your response.**
- No maximum length. You get more extra credit if you create more thorough responses (actual engagement with the assignment rather than just bull\$#!++ing)!
- The more work you put into it, the more extra credit you get.
- Do not artificially inflate the length of your OAR in any way (e.g., by padding the header and starting midway through the first page). That just irritates me and does not benefit you.
- You only need to write one response per week in order to get the extra credit.
You will not get additional extra credit if you write two responses in one week.
- On weeks when there is only 1 class, you will have only 1 opportunity to do an assignment response.

What is Alex looking for in the optional homework assignment responses?

- Expectation #1: I am looking for **more than summaries** of the assigned material.
- Expectation #2: I am looking for **thoughtful reflection and personal engagement** with the assigned material.
 - o This includes connections between the material and personal experiences (life experiences, stuff going on in the news, film/TV/music/podcasts (but **please avoid spoilers!**), etc.), connections between new assignments and old assignments, connections to other classes you've taken or things you've learned, as well as other sorts of reactions and questions (even puzzlement!!!) about the material.
 - o OARs can, but do not have to, be in essay form. They can be creative: poems, short stories, comic strips, vlogs, songs, etc. (If your response is, say, a vlog, then upload a document in the normal way to Canvas, but include a link.)

- Expectation #3: **show that you did the entire homework assignment, rather than just the first few pages.**
- Expectation #4: If there are multiple assignments for one class, **refer to all the readings and other assignments, at least briefly.**
 - o It's perfectly OK for you to focus primarily on the assigned material that most interested you, but you must mention them all.
 - o **If you do not mention all the assigned materials, then you will get no extra credit for your response.**

How do the optional extra-credit assignment responses affect my overall grade?

→ For every week that you do this, I will add more extra credit to your overall quiz average.

- Example: let's say you completely bomb the Tuesday quiz. You can then write a response for the Thursday homework assignment (on the material assigned for Thursday!) to make up for the failed Tuesday quiz.
- Hypothetical grade impact: suppose there are two 6-question quizzes in one week and you get a 0/6 on both quizzes, but you submit one very thoughtful assignment response. I might give you 6 points of extra credit total. That would (effectively) boost your score to 3/6 on both quizzes (from an F to a C). If you get 3/6, it will boost to 6/6 on both quizzes. If you get 6/6, it will boost to 9/6.
- There are always a few students who get above 100% on their final quiz score!
- I will post a running record of your assignment-response extra credit on Canvas, and your posted quiz average will automatically update to reflect this.
- I will grade papers and optional assignment responses within 1 to 2 weeks.
- **Last pointer:** if you are struggling to manage your time, then consider writing your responses for Tuesday classes, and doing them over the weekend (on Friday, Saturday, or Sunday).

Major Course Terms (to Memorize Eventually)

Scientism	The view that science is the ultimate authority about what there is in the world. Empirical Science will tell us everything we need to know.
Physicalism (Materialism)	The thesis that everything is physical.
Behaviorism	The theory that the mind is not internal to the body. It is nothing but bodily behavior.
Phenomenology	The study of experience from the first person point-of-view.
Metaphysics (Ontology)	The study of the fundamental nature of reality.
Ethics (Morality) (Political Philosophy)	The study of how we should live.
Epistemology	The study of knowledge.
Mental State	Any state of the mind.
Dualism	The theory that the mental and physical are fundamentally two different things.
Qualia	Features distinctive to conscious experience.
Functionalism	The theory that the nature of mental states is not determined by their underlying physical or biological constitution, but instead by the way the mental state functions in a broader system. (parts of system functioning the right way)

Mind/Brain Identity Theory	A reductionist physicalist view of the mind. Mind is just the Brain.
Type Vs. Token	Types are general kinds. (Abstract) Tokens are particular instances. (Concrete Particulars)
Multiple Realization	“Realization” means taking some abstract type and turning it into a token, concrete particular.
Type Identity Theory	Mental States are the same type of thing as physical states.
Token Identity Theory	Maybe all mental states are physical states, but maybe different types of physical states can underlie the same type of mental states.
Eliminativism	Once we do the science, we’ll see that mental states don’t really exist at all. (Witches do not exist)
Syntax	Grammatical rules. (I before E, except after C / Yoda)
Semantics	Meanings of words.
Thought Experiment	When you don’t actually perform the experiment, but you imagine doing it. (Mary’s Room / Echolocation)
Intentionality	The power of the mind to be about the world. (Semantics, meaning) Mental states represent objects.