Psychology 188A

Ethical, Legal, and Societal Implications of Cognitive Neuroscience

Winter Quarter 2016, UCLA

Instructor: Jesse Rissman, rissman@psych.ucla.edu, 6639 Franz Hall, office hour: Tu 11am-12pm

Class Time and Location: Tu/Th 9:30am-10:45am, MS 3915D

Course Overview: As our ability to measure and understand the functioning of the human brain has rapidly advanced, so too has our need to grapple with the ethical implications of these neuroscientific tools and discoveries. This seminar will introduce students to the emerging field of Neuroethics and create a forum for discussion and debate about a range of timely topics. We will critically examine the current and potential use of neuroimaging data in the legal system as a means to assess a person’s memories, truthfulness, culpability, and the probability of future criminal behavior. We will consider the personal and societal consequences of the use of cognitively enhancing drugs, memory dampening techniques, brain stimulation, and neural prostheses. We will wrestle with the profound implications of scientists’ newfound ability to measure neural signatures of conscious awareness in putatively vegetative patients. And we will debate the ethics of neuromarketing. With each topic we consider, our goal will not be to achieve consensus on what’s right and what’s wrong, but rather to understand the ethical quandaries and to think critically about ways that the field could go about addressing them. Students should leave this course with an enhanced appreciation of the many ways in which our work impacts society and a heightened commitment to public engagement.

Grading breakdown:

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<tr>
<th>Grading Category</th>
<th>Percentage</th>
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<tr>
<td>Attendance</td>
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<tr>
<td>Class Participation</td>
<td>10%</td>
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<tr>
<td>Debate Performance</td>
<td>20%</td>
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<tr>
<td>Paper #1</td>
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<td>Paper #2</td>
<td>30%</td>
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<tr>
<td>Final Exam</td>
<td>25%</td>
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Attendance: There will be an attendance sign-in sheet during each class session. If you must miss class due a medical or family emergency, please notify the instructor.

Class Participation: All students must read the assigned article(s) before each class and come prepared to engage in discussion and debate. The instructor will keep track of how much—and how thoughtfully—each student participates. It is not necessary to speak during every single class session to get full credit.

Debate Performance: Over the course of the quarter, we will have 6 in-class debates. Each debate will consist of two teams, with two students per team. One team will argue the PRO side and the other team will argue the CON side of a specific motion. Assignment of students to topics/teams will be done during the first week of class. You may not agree with your assigned stance, but you must try your best to make a persuasive case. Grading of your team’s debate performance will be based on your level of preparation, the clarity and effectiveness of your arguments, and your response to cross-examination from the other team, as well as to questions from the audience. Although the class will vote for a winner at the end of each debate, winning or losing will NOT be factored into your grade. Both members of each team are expected to participate equally and will be assigned the same grade, so please work very collaboratively with
your teammate. You may use Powerpoint slides to help make your arguments (e.g., to show relevant data), but you are not required to do so. Additional instructions about the debate format will be provided in class.

Paper #1 “Cognitive Neuroscience in the News” (Due on Feb 5th): Find a recent news article (no more than 1 year old) that describes a new technological development or scientific breakthrough that poses (or may in the future pose) ethical concerns. The article need not explicitly mention the ethical issues/implications of the science, although it is okay if it does. In 500 words or less, you should briefly describe the science and the ethical issue(s) it raises. It is okay, and in fact encouraged, for you to inject your own opinions/ reflections on the matter, but please be sure to give clearly articulated reasons for your opinions.

Paper #2 “Neuroethics Policy Recommendations” (Due on March 4th): Pretend you’ve been tapped by the President’s Commission for the Study of Bioethical Issues to write a report about a neuroethical issue (word limit = 2,000). You can choose whichever issue you’d like to write about, although you may not select the same topic you were assigned to formally debate. Your paper should review the relevant literature, address the key ethical questions head-on, and make a few policy recommendations (based on your reasoned opinion). Your recommendations could be for changes to federal and/or state legislation, courtroom practices, medical practices, research practices, business practices, and/or public education. And if you feel it is warranted, you could advocate for more research on a particular topic (please specify what questions need to be addressed), or for a ban on research of a particular type. Your grade will not be based on how strongly I agree with your analysis and opinions, but rather on how thoroughly and thoughtfully you articulated them.

Final Exam (March 17th from 9-11am): This closed-notes comprehensive exam will consist of short answer and essay questions. Several example questions will be given to you before the exam to aid in your studying.

PDFs for all readings will be posted on the course CCLE website.
Schedule of Topics and Readings:

1/5 – Introduction to the emerging field of neuroethics

**ADDITIONAL SUGGESTED READING:**

1/7 – The neuroscience of ethics

**ADDITIONAL SUGGESTED READING:**

1/12 – Moral agency, responsibility, and the law

**ADDITIONAL SUGGESTED READING:**
Roskies, AL (2012). How does the neuroscience of decision making bear on our understanding of moral responsibility and free will? *Current Opinion in Neurobiology, 22*(6), 1022–1026.
Libet, B (2010). Do we have free will? *Journal of Consciousness Studies, 6*(8–9), 47–57.

1/14 – Why is the legal system increasingly turning to neuroscientists?

**ADDITIONAL SUGGESTED READING:**
1/19 – Does a not-yet-fully-developed brain make adolescents less culpable for their actions?


**ADDITIONAL SUGGESTED READING:**


1/21 – Neurocriminology


**ADDITIONAL SUGGESTED READING:**


1/26 – Debate #1: Is the “my brain me do it” defense a viable defense?

1/28 & 2/2 – Brains on Trial

No readings. We will watch and discuss portions of the 2013 PBS special *Brains on Trial with Alan Alda*. [http://www.pbs.org/program/brains-trial/](http://www.pbs.org/program/brains-trial/)

2/4 – Neuroimaging techniques for lie detection


**ADDITIONAL SUGGESTED READING:**


2/9 – Memory on the witness stand


**ADDITIONAL SUGGESTED READING:**


2/11 – Debate #2: Should functional neuroimaging evidence be admissible as evidence in trials?

2/16 – Can traumatic memories be dampened, modified, or erased?


**ADDITIONAL SUGGESTED READING:**


2/18 – Debate #3: Should individuals be allowed to undergo procedures designed to dampen or erase their memories for specific events?

2/23: The ethical implications of cognitive-enhancing drugs


**ADDITIONAL SUGGESTED READING:**


2/25 – Debate #4: Should college campuses prohibit the use of “smart drugs” by students who do not have a clinically-documented mental health disorder?

3/1 – The neuroethics of non-invasive brain stimulation for cognitive enhancement


ADDITIONAL SUGGESTED READING:

Fitz, NS & Reiner, PB (2013). The challenge of crafting policy for do-it-yourself brain stimulation. *Journal of Medical Ethics*.


3/3 – Debate #5: Should American football be banned (or dramatically changed) given our knowledge of how damaging it can be to the brains of the players?

3/8 – Using brain imaging to clinically evaluate disorders of consciousness


ADDITIONAL SUGGESTED READING:


3/10 – Debate #6: Should companies and politicians be allowed hire neuromarketing firms to improve the effectiveness of their advertisements?
DEBATE TOPICS:

1) Should the “my brain me do it” defense be considered a viable defense?
   PRO: An individual with a verifiably unhealthy/abnormal brain may have severe trouble controlling one’s behavior, inhibiting inappropriate urges, and/or recognizing the difference between right and wrong. Thus it follows that such individuals should not be held (fully) culpable for their misdeeds.
   CON: Everyone’s brain makes them do everything that they do. Anyone who commits a heinous crime is likely to have something awry with their mental health, but that doesn’t mean that they are not still responsible for their actions and deserving of punishment. There is no difference between something being “your fault” and something being “your brain’s fault.”

2) Should functional neuroimaging evidence be admissible as evidence in trials?
   PRO: Eyewitness testimony is well known to be flawed and subject to errors. Brain scans could provide a more objective means for assessing someone’s truthfulness or establishing the presence or absence of specific memories in his/her brain.
   CON: Brain scans are unlikely to ever provide sufficiently reliable information about a person’s mental states to warrant their use in forensic and judicial proceedings. Neuroimaging evidence may bias the jury, and may constitute an unconstitutional invasion of personal privacy.

3) Should individuals be allowed to undergo procedures designed to dampen or erase their memories for specific events?
   PRO: Some memories are extraordinarily painful to live with and can interfere with activities of daily living. If an individual wishes to take a drug to dampen or erase a bad memory, s/he should be allowed to do so.
   CON: Although the ability to erase bad memories sounds nice in principle, there are many potential downsides to this including an inability to adequately testify about an event in trial and a lost opportunity to build personal strength from the process of coping with and overcoming the negative experience. There are also issues regarding informed consent and general safety.

4) Should college campuses prohibit the use of “smart drugs” by students who do not have a clinically-documented mental health disorder?
   PRO: The use of “smart drugs” by cognitively healthy students is both unfair and potentially unsafe. Policies should be put in place to ban these drugs.
   CON: The purpose of college is to provide students with an education. If taking a “smart drug” helps a student study more effectively and perform better on assignments and exams, why should that be banned?
5) Should American football be banned (or dramatically changed) given our knowledge of how damaging it can be to the brains of the players?

PRO: The scientific evidence is overwhelming that playing football can lead to chronic traumatic encephalopathy. It is irresponsible for us to sit back and watch while athletes slowly destroy their brains, and especially irresponsible to allow a new generation of youth to get involved. If adequate changes to the rules and/or helmet technology cannot be made, football should be banned.

CON: Football is a national pastime, and players are well aware of the risks they are taking. Professional athletes are well compensated for their activities, and it is not the responsibility of our society to prevent them from putting their brain health at risk. Many other sports have serious risks, and it would be unfair to single out football. Plus, more scientific work needs to be done to fully understand the long-term health consequences of football.

6) Should companies and politicians be allowed hire neuromarketing firms to improve the effectiveness of their advertisements?

PRO: We are a nation of free markets and free speech. Tailoring an advertising campaign based on neuroimaging data is no different than tailoring it based on feedback from focus groups, and thus should be allowed and unregulated.

CON: The use of neuroimaging data to create ads that effectively hijack the brain’s reward circuitry (or other circuits related to memory and decision-making) is crossing a line and should be heavily regulated or banned.

Useful resources:
Emory University’s Neuroethics blog, http://www.theneuroethicsblog.com
Univ. of Pennsylvania’s Center for Neuroscience and Society, http://neuroethics.upenn.edu
Adam Kolber’s Neuroethics and Neurolaw blog, http://kolber.typepad.com

Books on neuroethics: