

PSYC 428-Neuroscience, Society and the Media
Department of Psychology & Neuroscience

Prerequisite: PSYC 220 or PSYC 315

Course Description: Neuroscience is a 'hot' topic in the media. Very often, the media coverage of neuroscientific findings 'sum up' how the brain contributes to complex human behaviors, including memory, decision making, social behavior, and consumer behavior. These reports can have a significant impact on public opinion, what kinds of research gets funding, and ultimately helps to shape the field itself. This class, through lectures and discussion, will focus on how the popular press cover neuroscientific research. We will consider the scientific method, and how this method is represented in the media. In addition, we will consider how media coverage relates to the scientific findings, by reading the popular press version of a study, along with the primary research study, itself. We will ask: Are there discrepancies? Is the science represented accurately? By understanding how the general public is exposed to neuroscience research, we may gain a better understanding of how to communicate basic research more effectively.

Required reading: Brainwashed: The Seductive Appeal of Mindless Neuroscience by Sally Satel, Scott O. Lilienfeld. Additional readings are available on Sakai, or accessible through UNC libraries.

*Please use the sign-up tool on Sakai to reserve time during my office hours. This ensures that you get the time that you need, and if I do not have students signed up for office hours, I will use the opportunity to work on other things.

Course Requirements:

1. **Class participation** is an important part of this class and will contribute significantly to your learning experience. Active participation requires being present for the entire class period and taking part in the discussion.
 - a) **Discussion questions (5%):** Questions or ideas that you would like to discuss during class time should be posted to the class forum the day prior to that class (10 pm deadline). Please do not post duplicate questions (i.e. if the question you have formulated has already been posted, please submit an alternative question). Discussion questions will be scored as: 0 (no question), 0.5 (general questions such as those regarding methods or procedures), 1 (insightful questions that display critical thinking and that the reading has been considered carefully).
 - b) **In-class participation (5%):** Participating in seminars and discussions involves developing a particular skill set. Therefore, you should expect to improve at discussion over time just like you would in other skills like reading, writing, or learning another language. Focus on improving your skills. This is an active learning process! I am more interested in your willingness to explore ideas - out loud - than your "getting it right". For each discussion class, you will have a few minutes at the end of the class period take notes relevant to your own participation for the day. You will turn these participation notes in at the end of class so that I can compare your notes with my own before assigning a participation grade for the class. In class participation will be scored as: 0 (no participation/no notes), 0.5 (minimal contribution), 1 (insightful comments/questions). For some classes, you might also complete short quizzes, or contribute materials for discussion. These small assignments will also contribute to your participation grade.

2. **Discussion:** For each of the primary papers we will read in class, 2-3 students will be responsible for leading a discussion period on one of the primary papers. You should use visual aids, do additional research on your own to enrich the discussion, and bring several pre-prepared questions to get things going. Student presenters will also provide the class with an essay question which should be designed to extract the main theme of the presentation. These questions will be distributed to the class at least 48 hours *prior* to the relevant class. Some of these questions will appear on the exams, so they are excellent practice! **At a minimum**, the presentation should focus on providing a clear presentation of: 1) Question – what is the main question the paper addresses, 2) Enough background material for the class to understand the paper (you might use information from a Biopsychology or Neuroscience textbook), 3) Methods - how did the researchers address this question, 4) Main findings, 5) Critique and Conclusions, 6) How the media coverage portrayed the findings. Was it accurate? Why or why not? Again, *these points are the minimum points to be addressed in your discussion*. You should move well beyond the material I have provided for you when you do your own research. Also note that your discussion should be engaging and high energy – you should attempt to facilitate discussion rather than simply presenting information. This assignment will require a *significant* amount of time to prepare, and I highly encourage you to meet with me to make sure you're on the right track.
3. **Exams:** There will be 2 exams, a Midterm and the Final Exam. Each exam will cover assigned readings and lectures since the previous exam. Exams will consist primarily of short answer essay questions. These questions will come from class discussions. If you know that you are going to miss an exam, please arrange for an alternate testing date at least 1 week in advance of the exam date. **Final Exam Schedule:** We are required to have our final exam on **May 6th** at **noon**. If you have two exams at the same time or three exams within 24 hours and you want to reschedule the exam, then see an academic advisor for an exam excuse form.
4. **Opinion/Critical Reviews:** You will submit a brief written review for 10 of the 17 Journal Club classes (no more than 2 pages). **You must submit a review for the practice journal club** so that I can provide you with feedback early in the semester, but can choose the remaining deadlines that you would like to meet. *I urge you not to leave all of your reviews until the end of the semester – leave yourself some wiggle room in case things come up such as technical difficulties, illness, grad school interviews, etc.* Your review will focus on the primary research paper assigned for that class. In the paper, you will (at a MINIMUM): 1) briefly describe the topic, 2) describe how the topic was addressed by the primary research paper, 3) and how the topic was covered in the media. Carefully consider how well the research was represented in the media coverage. What aspects of the research were covered well, and what important aspects were either omitted or distorted? These reviews should be submitted via Sakai the day before class (8pm deadline).
5. **60 second podcast:** Distilling scientific knowledge down into a simple idea that a non-scientist can understand is a difficult, but incredibly important task for scientists. For this assignment, you will choose a topic, find a primary paper, and through several steps, distill the content of the primary paper down to a 60 second podcast. Examples of 60 second science podcasts can be found here: <http://www.scientificamerican.com/podcast/60-second-mind/>
 1. **Assignment 1: Topic Choice and Rationale:** First, select a recent primary paper you find interesting and relevant. **Please make sure the research has been published after 2012 (so that you have a fairly recent paper) and has not already been covered on 60-Second Mind.** After you read the article please write a short paragraph explaining the study and its significance in one, concise paragraph. Be sure to include:
 - a. What does it say? (Thesis)
 - b. How does it prove that? (Methodology)
 - c. What does it mean? (Implications)

- d. Upload this paragraph, along with the scientific article, onto the appropriate forum on Sakai.
2. Assignment 2: Critical analysis: Locate three to four other articles which deal with the same topic as your chosen article. You will read and analyze these articles in order to understand how the claims and findings fit with other claims and findings on the same topic. Create an annotated bibliography of 3-5 other articles. Each annotation should include:
 - a. The major claim or thesis of the article
 - b. A brief explanation of the methodology used
 - c. The implications of the findings as they relate to your topic
 - d. The ways in which this study's results shape understanding of your chosen study (does it undermine the results, contradict the results, reinforce the conclusions, etc).
3. Assignment 3: Preliminary Written Transcript: Sixty seconds isn't very long—it only comes out to about 200 words. However, getting all you have to say to fit into sixty seconds will be challenging. That is why your rough draft will be longer than your final. You will edit this draft down to include only the most essential information as succinctly as possible. For this assignment, you will write a 350-450 word transcript, using the basic structure you intend to use in your final project. A successful transcript will:
 - a. Highlight a recent research finding in 350-450 words
 - b. Be organized in the same manner as a 60-Second Science podcast
 - c. Adopt an engaging tone that entertains and informs
 - d. Be free from grammatical and mechanical errors.
4. Final Project: 60-Second Mind Podcast: You will take on the role of a scientific journalist, composing and recording a sixty-second audiofile for submission on Sakai. A successful podcast will:
 - a. Highlight a recent research finding
 - b. Be organized and formatted in the style of scientificamerican.com's 60-Second Science: Hook (Generate interest); Summary of Findings of article; Summary of how they figure that out (methodology); What does it mean? (implications to general audience/implications to the field of study); Where can people find the article (Citation; Could be anywhere)
 - c. Adopt an engaging tone that entertains and informs
 - d. Be clearly delivered on a recording exactly sixty seconds in length
 - e. Include a carefully edited transcript that matches the recording
 - f. Include a bibliography cited in APA style
 - g. Be free of grammatical and mechanical errors.

****Please note: all written assignments must be written in your OWN words with appropriate citations. Quoting passages from your sources (yes, even in quotation marks) will result in a grade of 0. I am required by the University to report all instances of plagiarism or suspected plagiarism (i.e., if you don't use citations appropriately or copy another authors words). If you are not sure how to paraphrase or avoid plagiarism, please come and see me. A PDF with information about to avoid plagiarism can be found on the Sakai site.**

Grade calculation

- 10% Participation
- 20% Discussion
- 20% Exams
- 20% Opinion/Critical Reviews
- 30% Podcast

Letter Grade Assignments

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|------------|------------|----------|
| A = 94-100 | C+ = 77-79 | F = 0-59 |
| A- = 90-93 | C = 74-76 | |
| B+ = 87-89 | C- = 70-73 | |
| B = 84-86 | D+ = 67-69 | |
| B- = 80-83 | D = 60-66 | |

* Final grades are rounded (.4 down and .5 up). For example 89.4 = 89/B+; 89.5 = 90/A-.

Digital etiquette: It is necessary to use a digital device during class time. Please be respectful of your classmates and restrict your use to course content. If you choose to buy a new sweater or surf Facebook anyway, I will ask you to put your device away for the rest of the class, and you will forfeit your participation points for that day. It's likely that there will be times in class when you have completed your work, but your classmates have not – use this time to review your notes or ask questions before we move on. We are all working as a learning team in class, and we're only as awesome as our weakest link! Don't let it be you!

Note on attendance: Regular attendance and class participation are expected. You are responsible for your attendance and for any information you miss by not attending class.

Accessibility Resources & Service: If you have accommodations to take exams at the Office of Accessibility Resources, please let me know as soon as possible (and well before the first exam).

ACADEMIC INTEGRITY: As in all Carolina courses, the Honor Code is in effect. The Instrument of Student Judicial Governance requires that you sign a pledge on all written work that says "On my honor, I have neither given nor received unauthorized aid on this assignment." This Code applies to all exams and class projects. Although you may study together for exams, all exams are to be taken without the assistance of other people, books, or notes. Ideas or information in your written work and class presentations must be appropriately referenced, whether the original source is written or verbal. Five or more words taken verbatim from any source must be placed in quotation marks with the source appropriately referenced. If you have not done so previously, please review the academic code at UNC at http://integrity.unc.edu/hc_handout.html.

Course Schedule

***Changes to the Syllabus:** If a change to the syllabus becomes necessary, I will announce this in class or by email.

Date	Topic	What should I be reading? What's due?
01-11	Introduction, Overview	

01-13	Behavioral Neuroscience and the Media	1. Read: Blakelee et al. (2012) <i>Physiol Behav.</i> 107(5):617-22. 2. Read: http://www.motherjones.com/media/2014/06/hodor-game-of-thrones-brain-speech 3. Submit discussion questions
01-15	Scientists as public communicators	1. Read: Peters (2013) 2. Submit discussion questions
01-18	No class	
01-20	I don't know what to believe	1. Visit: http://www.senseaboutscience.org/ 2. Read: Sense about Science
01-22	Losing our Minds in the Age of Brain Sciences	1. Read: Satel and Lilienfeld, Introduction 2. Submit discussion questions
01-25	Guest: Barry Yeoman, Journalist Brain Science, Public Policy, and Magazine Journalism	1. Read: http://barryeoman.com/2007/03/putting-science-in-the-dock/ ; http://barryeoman.com/2002/07/can-we-trust-research-done-with-lab-mice/ ; http://barryeoman.com/2004/12/lights-out/ ; http://barryeoman.com/2014/05/finding-my-voice-stuttering/ 2. Submit discussion questions
01-27	What is brain imaging? Guest: Dr. Kelly Giovanello	1. Read: Satel and Lilienfeld, Ch 1 2. Submit discussion questions
01-29	Review of neuroanatomy	1. Review on Sakai (under readings): Neuroanatomy 2. In class quiz
02-01	How do we study the link between brain and behavior? The use of animal models to understand human behavior.	1. Reading on Sakai: Experimental design
02-03	How to read a paper; overview of 60 second podcast assignment	1. Reading on Sakai: How to read a paper
02-05	60 second podcasts	Meet in Media lab (Undergraduate library)
02-08	Journal club practice: Dog Brain Scan Study Shows Mind Of Man's Best Friend, fMRI Scientists Say	1. Read: http://www.huffingtonpost.com/2012/05/07/dog-brain-scan-mind-mri_n_1495791.html ; Berns et al. (2012) Functional MRI in Awake Unrestrained Dogs. <i>PLoS One.</i> 2012;7(5):e38027. doi: 10.1371/journal.pone.0038027. Epub 2012 May 11.
02-10	Media Reporting of Neuroscience Depends on Timing, Topic and Newspaper Type	1. Read: van Atteveldt et al. (2014) 2. Submit discussion questions
02-12	Journal Club 1: 'Vampire therapy' could reverse ageing, scientists find.	1. Read: http://www.telegraph.co.uk/science/science-news/10807478/Vampire-therapy-could-reverse-ageing-scientists-find.html ; Villeda et al (2104) Young blood reverses age-related impairments in cognitive function and synaptic plasticity in mice. <i>Nat Med.</i> 20(6):659-63. 2. Submit Opinion/Critical Review
02-15	Journal Club 2: Sleep Deprivation Could Speed Up The Onset Of Alzheimer's	1. Read: http://www.huffingtonpost.com/2014/03/19/sleep-deprivation-alzheimers_n_4992547.html ; Di Meco et al. (2014) Sleep deprivation impairs memory, tau metabolism, and synaptic integrity of a mouse model of Alzheimer's disease with plaques and tangles. <i>Neurobiol Aging.</i> 2014 Aug;35(8):1813-20. doi: 10.1016/j.neurobiolaging.2014.02.011. 2. Submit Opinion/Critical Review

02-17	Journal Club 3: Rats feel regret like humans, and it might help us better understand our feelings.	1. Read: http://www.washingtonpost.com/news/to-your-health/wp/2014/06/10/rats-feel-regret-like-humans-and-it-might-help-us-better-understand-our-feelings/ ; Steiner & Redish (2014). Behavioral and neurophysiological correlates of regret in rat decision-making on a neuroeconomic task. Nat Neurosci. 2014 Jun 8. doi: 10.1038/nn.3740. 2. Submit Opinion/Critical Review
02-19	The Buyologist is in: The rise of neuromarketing	1. Read: Satel and Lilienfeld, Ch 2 2. Submit discussion questions
Podcast assignment 1 due: Topic Choice and Rationale		
02-22	Journal Club 4: How our powerful memories can also bias our decisions	1. Read: http://articles.latimes.com/2012/oct/11/science/la-sci-sn-memories-bias-decisions-20121011 ; Wimmer GE, Shohamy D (2012) Preference by association: how memory mechanisms in the hippocampus bias decisions. Science, 338(6104):270-3. 2. Submit Opinion/Critical Review
02-24	Journal Club 5: How Marketers Are Plotting To Use Neuroscience To Control What You Buy	1. Read: http://www.huffingtonpost.com/2015/05/11/marketers-neuroscience_n_7256602.html ; Plassmann H, Weber B, et al. Individual Differences in Marketing Placebo Effects: Evidence from Brain Imaging and Behavioral Experiments. Journal of Marketing Research. 2015. 2. Submit Opinion/Critical Review
02-26	***Journal Club 6: Super Bowl ads fumble, brain scans show	1. Read: http://www.reuters.com/article/television-nfl-super-advertising-scans-d-idUSL0549647620070205 ; http://www.fkfappliedresearch.com/FKF.html 2. Submit Opinion/Critical Review
02-29	Addiction and the Brain-Disease Fallacy	1. Read: Satel and Lilienfeld, Ch 3 2. Submit discussion questions
	Journal Club 7: Scientist Blasts Report Linking Casual Pot Smoking With Brain Abnormalities.	1. Read: http://www.huffingtonpost.com/2014/04/22/marijuana-brain-study_n_5170422.html ; Gilman et al. (2014) Cannabis use is quantitatively associated with nucleus accumbens and amygdala abnormalities in young adult recreational users. J Neurosci. 34(16):5529-38. 2. Submit Opinion/Critical Review
03-02	Journal Club 8: Normalizing dopamine levels in brain may reduce alcohol cravings	1. Read: http://www.wsj.com/articles/normalizing-dopamine-levels-in-the-brain-can-reduce-alcohol-cravings-study-shows-1444840077 ; http://www.foxnews.com/health/2015/10/15/normalizing-dopamine-levels-in-brain-may-reduce-alcohol-cravings.html ; Khemiri et al. (2015) The effects of the monoamine stabilizer (-)-OSU6162 on craving in alcohol dependent individuals: A human laboratory study. European Neuropsychopharmacology 25, 2240–2251 2. Submit Opinion/Critical Review
03-04	Journal Club 9: You may be a pizza-holic: Research says some foods addicting	1. Read: http://www.cnn.com/2015/10/23/health/pizza-and-other-foods-addicting/index.html ; Schulte et al. (2015) Which foods may be addictive? The roles of processing, fat content, and glycemic load. PLoS One. 2015 Feb 18;10(2):e0117959. doi: 10.1371/journal.pone.0117959. eCollection 2015. 2. Submit Opinion/Critical Review
03-07	60 second Podcasts	Podcast assignment 2 due: Critical analysis
03-09	Midterm exam	
03-11	Bring in your favorite find. What kind of work does the media tend to highlight?	1. Bring in a headline from your favorite media source 2. Be prepared to discuss the accuracy of the media report

03-14	No class	
03-16	No class	
03-18	No class	
03-21	Media lab	Use this time to work in the media lab on your podcast. Equipment will be reserved for your use, or you can request a tutorial during this time. You might also use this time to meet with a librarian for help with the research aspect of your podcast. You can start by using the Ask a Librarian service: http://asklib.hsl.unc.edu/ . The librarians who handle questions through this service can also refer to the most appropriate subject librarian across the libraries for the particular research topic you are pursuing.
03-23	Neuroscience and Public Policy	1. Read: Mervis (2009); Seymour & Vlaev 2. Submit discussion questions
03-25	No class	
03-28	The telltale brain: Neuroscience and deception	1. Read: Satel & Lilienfeld 4 http://alumni.berkeley.edu/california-magazine/just-in/2015-07-23/catching-brain-lie-mind-reading-deception-detection-sci-fi-or 2. Submit discussion questions 3. Podcast assignment 3 due: Transcript
03-30	***Journal Club 10: How To Build The Perfect Lie Detector	1. Read: http://www.forbes.com/sites/robertszczerba/2014/09/10/how-to-build-the-perfect-lie-detector/ 2. Submit Opinion/Critical Review
04-01	Journal Club 11: Don't even think about lying. Neuroscientist Uses Brain Scan to See Lies Form	1. Read: http://archive.wired.com/wired/archive/14.01/lying.html ; http://www.npr.org/templates/story/story.php?storyId=15744871 ; Langleben et al. (2005) Telling truth from lie in individual subjects with fast event-related fMRI. Hum Brain Mapp. 26(4):262-72. 2. Submit Opinion/Critical Review
04-04	My Amygdala Made Me Do It: The Trials of Neurolaw	1. Read: Satel & Lilienfeld 5 2. Submit discussion questions
04-06	Journal Club 12: Lonely People's Brains Work Differently	1. Read: https://www.yahoo.com/health/lonely-peoples-brains-work-differently-125944609988.html ; Cacioppo et al. (2015) Implicit attention to negative social, in contrast to nonsocial, words in the Stroop task differs between individuals high and low in loneliness: Evidence from event-related brain microstates. Cortex. 2015 Sep;70:213-33. doi: 10.1016/j.cortex.2015.05.032. 2. Submit Opinion/Critical Review
04-08	Journal Club 13: Don't Multitask: Your Brain Will Thank You	1. Read: http://business.time.com/2013/04/17/dont-multitask-your-brain-will-thank-you/ ; Ophir et al. (2009) Cognitive control in media multitaskers PNAS 106 (37) 15583-15587. 2. Submit Opinion/Critical Review
04-11	Journal Club 14: Psychopaths' Brains Don't Grasp Punishment, Scans Reveal	1. Read: http://www.livescience.com/49613-psychopaths-brains-punishment.html ; Decety et al. (2013) An fMRI study of affective perspective taking in individuals with psychopathy: imagining another in pain does not evoke empathy. Front Hum Neurosci. 2013 Sep 24;7:489. doi: 10.3389/fnhum.2013.00489. eCollection 2013. 2. Submit Opinion/Critical Review
04-13	The Future of Blame: Neuroscience and Moral Responsibility	1. Read: Satel & Lilienfeld 6 2. Submit discussion questions

		Podcasts due
04-15	Bring in your favorite find. What kind of work does the media tend to highlight?	
04-18	Journal Club 15: The science of forgiveness: “When you don’t forgive you release all the chemicals of the stress response”	1. Read: http://www.salon.com/2015/08/24/the_science_of_forgiveness_when_you_dont_forgive_you_release_all_the_chemicals_of_the_stress_response/ ; Ricciardi E et al. (2013) How the brain heals emotional wounds: the functional neuroanatomy of forgiveness. Front Hum Neurosci. 2013 Dec 9;7:839. doi: 10.3389/fnhum.2013.00839. eCollection 2013. 2. Submit Opinion/Critical Review
04-20	Journal Club 16: Directing Magnetic Energy Into The Brain Can Reduce Belief In God, Prejudice Toward Immigrants	1. Read: http://www.medicaldaily.com/directing-magnetic-energy-brain-can-reduce-belief-god-prejudice-toward-immigrants-357194 ; Holbrook et al. (2015) Neuromodulation of Group Prejudice and Religious Belief. Soc Cogn Affect Neurosci. 2015 Sep 4. pii: nsv107. 2. Submit Opinion/Critical Review
04-22	Journal Club 17: In Pain and Joy of Envy, the Brain May Play a Role	1. Read: http://www.nytimes.com/2009/02/17/science/17angi.html?_r=0 ; Takahashi et al. (2009) When your gain is my pain and your pain is my gain: neural correlates of envy and schadenfreude. Science. 323(5916):937-9. 2. Submit Opinion/Critical Review
04-25	Podcasts	We will listen to Podcasts in class!
04-27	Review and course evaluations	

Final Exam: Friday May 6th, noon