

Cognitive Neuroscience Through Case Studies: Syllabus

WARNING: Class participation is a critical aspect of this class (and is worth a large portion of your grade). If you cannot attend class regularly and arrive on time, do not take this course!

INSTRUCTOR: Prof. Karin Stromswold

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Office hours: TBA

Course Time: TBA

Course Location: TBA

Sakai site: TBA

Learning goals: In this course, we will explore the structure and function of the human brain by studying cases of people with acquired and developmental brain disorders.

TENTATIVE SCHEDULE

| Date | TOPIC | Readings |
|---------|---|---|
| Week 1 | Introduction to cognitive neuroscience | Ward, Chapters 1 and 2, |
| Week 2 | Methods in cognitive neuroscience | Ward, Chapters 3, 4, and 5. |
| Week 3 | Vision | Ward, Chapter 6. Sacks (2002). The Case of Anna H. |
| Week 4 | Attention | Ward, Chapter 7. Ogden, J. (2005). Out of Mind, Out of Sight. |
| Week 5 | Movement & sensation | Ward, Chapter 8. Colapinto, J. (2009). Brain Games |
| Week 6 | Memory | Ward, Chapter 9. Shapen (2013). The Man Who Forgot Everything. Zalewski (2015). Life Lines. |
| Week 7 | Audition | Ward, Chapter 10. Sacks (2009) Things Fall Apart. [May-Mederake & Shehata-Dielee. Case Study ..Cochlear Implant] |
| | Take home essay 1 due | Upload to Sakai |
| Week 8 | Spoken language | Ward, Chapter 11. Ogden (2005). The Breakdown of Language [Sacks (2005). Recalled to life.] |
| Week 9 | Written language | Ward, Chapter 12. Sacks (2010). A Man of Letters. |
| Week 10 | Executive function Case study for your presentation due | Ward, Chapter 14. Ogden (2005). The Impaired Executive. |
| Week 11 | Social/personality/emotion | Ward, Chapter 15. Seabrook, J. (2008). Suffering Souls [Devinsky et al] |
| Week 12 | Neurodevelopment Preliminary presentation | Ward, Chapter 16. Kenneally (2006). The Deepest Cut. |
| | Take home essay 2 due | Upload to Sakai |
| Week 13 | Student in-class case presentations Final version of presentation slides due | ALL students must upload final version of slides by 9 am |
| Week 14 | Student in-class case presentations | |

Readings

Required textbook: Ward, Jamie. 2015. *The Student's Guide to Cognitive Neuroscience, 3rd edition*. Psychology Press. ISBN-10: 1848722729. ISBN-13: 978-1848722729

Preliminary list of case studies (available on Sakai under Resources/Cases)

Colapinto, J. (2009). Brain Games: Marco Polo of Neuroscience. *The New Yorker*

Devinsky, J, Sacks, O., Devinsky, O. 2010. Kluver-Bucy syndrome, hypersexuality and the law. *Neurocase 16, 140-145*.

Kenneally (2006). The Deepest Cut. *The New Yorker*

May-Mederake, B. & Shehata-Dielee, W. (2013) A Case Study Assessing the Auditory and Speech Development of Four Children Implanted with Cochlear Implants by the Chronological Age of 12 Months. *Case Reports in Otolaryngology, Volume 2013*.

Ogden, J. (2005). The Breakdown of Language: Case Studies of Aphasia. From *Fractured Minds: A Case-Study Approach to Neuropsychology, 2nd edition*.

Ogden, J. (2005). The Impaired Executive. From *Fractured Minds: A Case-Study Approach to Neuropsychology, 2nd edition*.

Ogden, J. (2005). Out of Mind, Out of Sight. From *Fractured Minds: A Case-Study Approach to Neuropsychology, 2nd edition*.

Sacks, O. (2002). The Case of Anna H. *The New Yorker*

Sacks, O. (2005). Recalled to Life. *The New Yorker*

Sacks, O. (2009). Things Fall Apart: Amusia and Dysharmonia. From *Musicophilia: Tales of Music and the Brain*.

Sacks, O. (2010). A Man of Letters. *The New Yorker*

Seabrook, J. (2008). Suffering Souls: The Search for the Roots of Psychopathology. *The New Yorker*.

Shapen (2013) The Man Who Forgot Everything. *The New Yorker*.

Zalewski, (2015). Life Lines. *The New Yorker*

GRADING

Final grades will be determined by the total number of points earned in the class. Grades will be scaled so that the top-scoring student receives 100 points for the course. For example, if the top scoring student earns 95 points during the course, all students will have an additional 5 points added to their final grade. Course grades will be assigned as follows: **A (90-100 points); B+ (85-89 points); B (80-84 points); C+ (75-79 points); C (70-74 points); D (60-69 points); F (<60)**

Class participation (e.g., attendance, discussion, in-class assignments): 20 - 30% of grade

Take-home Essay Exam 1: open-book, cumulative exam, worth 20 - 30% of grade

Take-home Essay Exam 2: open-book, cumulative exam, worth 20 - 30% of grade

Final project: in-class presentation of a neuropsych case study, worth 20 - 30% of grade

Absences and late exams and projects will not be accepted without a note from a doctor, dean or other appropriate person.

CLASS PARTICIPATION

Participation of every person in each class is a critical component of the class. You can earn up to 2 points for each class. For each class, you will be graded as follows

- 0 points: didn't attend
- 1/2 point: attended, but did not contribute much to class discussion or in-class assignments
- 1 point: attended, did well on in-class assignments and made substantive contributions to class discussion

TAKE-HOME ESSAY EXAMS

For the two take-home exams, you will have 24 hours to write a short (absolutely no more than 4 pages double-spaced!) essay exam. The exams are open-book and are designed to test whether you can THINK critically about the material presented in the seminar (and not just spit back facts). For example, essay exam questions may require you to determine where lesions are when given clinical deficits, to predict functional deficits when given location of lesions, to propose tests to investigate what other abilities may be spared/impaired, or to link findings from lesion-deficit studies with findings from functional neuroimaging studies of typical populations. You will upload your exams to Sakai Assignment 2.

Exams are open book, but all work must be your own original work!

- No plagiarizing (see below)!
- No copying, photographing or recording the questions
- No collaborations or consultations with anyone else
- No posting or discussing questions/answers with anyone else
- **Anyone caught PLAGIARIZING OR GIVING or RECEIVING help on a test will get a zero for the test. Furthermore, depending on the egregiousness of the plagiarism, I reserve the right to lower your final grade and/or notify your dean about the plagiarism.**

FINAL PROJECT

For the final project, you will locate and present to the class a case study that we did not read for or talk about in class. The case study can come from either a scientific journal (e.g., *Neurocase*, *Journal of Cognitive Neuroscience* etc.) or the popular press (e.g., *The New Yorker*, *The New York Review of Books*, a case from one of Oliver Sacks' books etc.). In your 10 minute in-class presentation of the case, you should

- 1) Give a brief overview of the case (who was the patient, what was the etiology of the disorder, etc.)
- 2) Describe the nature of the functional deficits. Some of the things you should touch on include
 - a. What could the patient do and not do in every day life?
 - b. Describe the results of any neuropsychological tests that were given
 - c. Describe the results of imaging studies that were done (structural and functional)
- 3) If you could do one more test, what would it be? What do you predict the results would show?
- 4) What does this patient's deficits/lesions tell us about the neural bases of the ability?
- 5) If your patient has the same disorder as one that we covered in class, how are your patient's deficits and lesions similar to and different from those of the patient we learned about in the class?

Final project grading: Your final project grade will be based on your in-class presentation (~40% of grade), your ability to answer questions (~20%), and your annotated slides (~40%).

Deadlines:

- Week 10: Reference and pdf of case study due (upload to sakai assignments)
- Week 12: Rough draft of presentation due (upload to sakai assignments)
- Week 13: Final version of slides due for ALL students (upload to sakai assignments)
- Week 13 & 14: In class presentations (Order of students' presentations will be determined randomly.)

PLAGIARISM

1. If you copy something that is in print ANYWHERE (books, journals, popular magazines, on-line blogs, mailing lists etc.), you are plagiarizing.
2. Taking someone else's words and substituting a word here or there is still plagiarism.
3. Paraphrasing someone else's words but 'borrowing' their line of argument and reasoning is plagiarism.
4. Even if you are in a pinch and facing a looming deadline, don't plagiarize. It's stealing. Better to hand in something that is yours than to hand in something that you stole.
5. For more guidelines,
 - 20 minute interactive-tutorial on [Plagiarism and Academic Integrity](http://www.scc.rutgers.edu/douglass/sal/plagiarism/intro.html): <http://www.scc.rutgers.edu/douglass/sal/plagiarism/intro.html>
 - Camden Plagiarism Tutorial: <http://library.camden.rutgers.edu/EducationalModule/Plagiarism/>
 - Don't Plagiarize: Document Your Research! : http://www.libraries.rutgers.edu/avoid_plagiarism

Rutgers Current Academic Integrity Policy:

<http://academicintegrity.rutgers.edu/academic-integrity-policy/>

Violations include: cheating, fabrication, plagiarism, denying others access to information or material, and facilitating violations of academic integrity.

LECTURE SLIDES

1. The lecture slides are only meant to aid you in taking notes during class, and to remind you of what was covered in class. They are not substitutes for attending class.
- 2) Despite my best efforts, sometimes the slides will contain typos. If you think you have found a serious typo (one that affects meaning), send email to neuropsychcases@gmail.com
- 3) Slides may be updated. I recommend that you check the sakai site periodically to make sure you have the most up-to-date version.