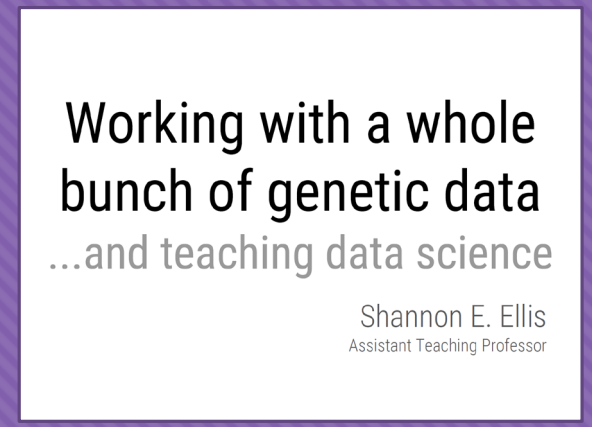
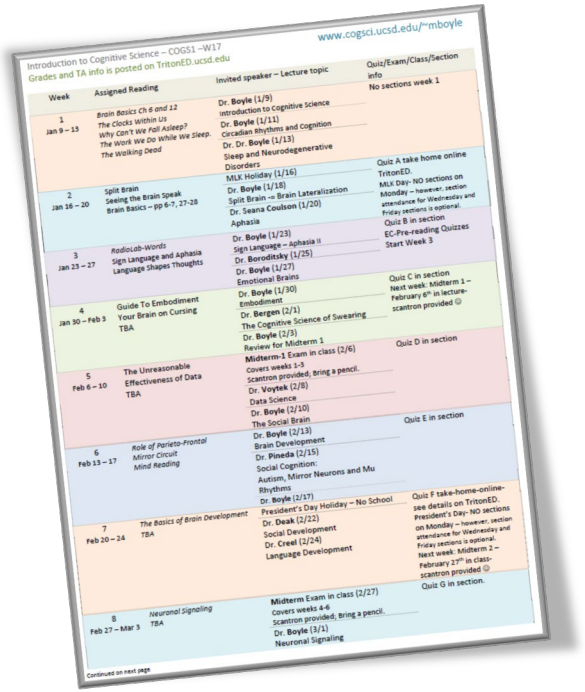
Review of Week 2

COGS1 – Spring 2019



Quiz B – in section during week 3

- Quiz B will be on week 2 reading and lecture material.
- Sign up on Piazza!!!



Introduction to Cognitive Science – COGS1 –W17 www.cogsci.ucsd.edu/~mboyle
Grades and TA info is posted on TritonED.ucsd.edu

Week	Assigned Reading	Invited speaker – Lecture topic	Quiz/Exam/Class/Section info
1 Jan 9 – 13	*Brain Basics Ch 6 and 12* *The Clocks Within Us* *Why Can't We Fall Asleep?* *The Work We Do While We Sleep.* *The Walking Dead*	Dr. **Boyle** (1/9) Introduction to Cognitive Science Dr. **Boyle** (1/11) Circadian Rhythms and Cognition Dr. Dr. **Boyle** (1/13) Sleep and Neurodegenerative Disorders	No sections week 1
2 Jan 16 – 20	Split Brain Seeing the Brain Speak Brain Basics – pp 6-7, 27-28	MLK Holiday (1/16) Dr. **Boyle** (1/18) Split Brain -∞ Brain Lateralization Dr. Seana **Coulson** (1/20) Aphasia	Quiz A take home online TritonED. MLK Day- NO sections on Monday – however, section attendance for Wednesday and Friday sections is optional.
3 Jan 23 – 27	*RadioLab-Words* Sign Language and Aphasia Language Shapes Thoughts	Dr. **Boyle** (1/23) Sign Language – Aphasia II Dr. **Boroditsky** (1/25) Dr. **Boyle** (1/27) Emotional Brains	Quiz B in section EC-Pre-reading Quizzes Start Week 3
4 Jan 30 – Feb 3	Guide To Embodiment Your Brain on Cursing TBA	Dr. **Boyle** (1/30) Embodiment Dr. **Bergen** (2/1) The Cognitive Science of Swearing Dr. **Boyle** (2/3) Review for Midterm 1	Quiz C in section Next week: Midterm 1 – February 6th in lecture- scantron provided ☺
5 Feb 6 – 10	The Unreasonable Effectiveness of Data TBA	**Midterm-1** Exam in class (2/6) Covers weeks 1-3 Scantron provided, Bring a pencil. Dr. **Voytek** (2/8) Data Science Dr. **Boyle** (2/10) The Social Brain	Quiz D in section
6 Feb 13 – 17	*Role of Parieto-Frontal Mirror Circuit* *Mind Reading*	Dr. **Boyle** (2/13) Brain Development Dr. **Pineda** (2/15) Social Cognition: Autism, Mirror Neurons and Mu Rhythms	Quiz E in section
7 Feb 20 – 24	*The Basics of Brain Development* TBA	Dr. **Boyle** (2/17) President's Day Holiday – No School Dr. **Deak** (2/22) Social Development Dr. **Creel** (2/24) Language Development	Quiz F take-home-online- see details on TritonED. President's Day- NO sections on Monday – however, section attendance for Wednesday and Friday sections is optional. Next week: Midterm 2 – February 27th in class- scantron provided ☺
8 Feb 27 – Mar 3	*Neuronal Signaling* TBA	**Midterm** Exam in class (2/27) Covers weeks 4-6 Scantron provided, Bring a pencil. Dr. **Boyle** (3/1) Neuronal Signaling	Quiz G in section.

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Coulson– Lateralization and Aphasia

- What does "lateralization" of function mean?
  - Can you think of different examples from lecture and the reading?
- What are the main functions of the four lobes of the brain?
  - Are any of these function lateralized?
- What are the language centers of the brain?
  - Where are they?
- From the lecture and your reading – identify the:
  corpus callosum, Broca's area, Wernicke's area, the frontal, temporal, parietal and occipital lobes
- What does the Wada test establish? What is it used for? How does it work?
- What are the differences between Broca's aphasia and Wernicke's aphasia?
  - In lesion areas?
  - In impairment of language production and/or comprehension?
  - What about conduction aphasia?

Coulson– continued

- What is the simplified Broca-Geschwind model of different aphasias?
  - Are there ways in which the model is simplistic
- What are the major sulci the divide between the different lobes?
- Where are the primary motor & primary somatosensory cortices located in the brain?
- What is the homunculus?
- How do the right and left hemispheres differ and how do they communicate?
- What is the relationship between hand and hemisphere dominance?
- What are Broadmann's areas (you don't need to know the different ones, just know the basics of what they are.)

- What is meant by the "average brain is skewed"?
- What are some anatomical differences between the hemispheres?
- What are some functional differences between the hemispheres?
- Identify important regions of the brain that are vulnerable to damage when undergoing brain surgery.
  - Why would someone being undergoing this procedure in the first place?
  - How are these regions mapped out?
- Provide examples of when brain function was altered but enabled localization of function.

Coulson – continued (from readings)

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- Provide examples of when brain function was altered but enabled localization of function.
- Be able to describe anomia and aphasia.
- What is the purpose of electrically stimulating Neil's cortex while he names off the objects on each slide?
- What was significant about the planum temporale?
  - Where is it located?
  - How does it differ across both hemispheres?

Ellis – From Genetics to Data Science

- Who set the framework for genetics?
- What is the basic structure of DNA and RNA?
  - What are the functions of each?
- What is GWAS? What does it stand for and what does it measure?
- Understand the central dogma of genetics.
- What is the epigenome?
- What is DNA methylation?
  - How is it studied?
  - How does it affect RNA transcription and gene expression?
- What differences in DNA and glia cells are observed in individuals with autism?
- What is Recount 2? How does it facilitate biological studies?
- Can we use expression data to predict tissue?
- What is CBDS?
  - Who does it target?
- What factors influence genetics research?
- What are some variables that must be accounted for?

Ellis – continued (from reading)

- What is polygenic inheritance? How does this affect the risk of diseases like diabetes?
- What is GWAS? What are its applications? Give an example of the applied analysis of GWAS.
- What are some limitations of such a kind of study?
- What are SNPs and how are they utilized in GWAS?
- How did GWAS seek to find the relationship between one's genes and their educational attainment?
- What is the relationship between sample size and the ability of GWAS to detect correlation?
- Identify the potential misuse of genetic prediction.