

Brain Development-Psychology 451

Professor: Dr. Beth Kelley

Virtual Office Hours: Fridays 11-12

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Book: “Developmental Cognitive Neuroscience, Fourth Edition” by Johnson & de Haan

Course Description

This course is designed to be a relatively broad discussion of brain development, with a particular focus on issues such as

- 3.25=good question that gets at important points but doesn't go beyond the article
- 3.75=good question that gets at important points and goes beyond the basics of the article
- 4.25=excellent that gets at important points and ties into larger theory
- 5=incredible insight, outstanding question that absolutely knocks my socks off!

2. Participation by commenting on other's posts 10% (best five out of twelve) You will be expected to make some contribution to the discussion for ~~at least~~ ~~five~~ ~~of~~ ~~the~~ ~~twelve~~ ~~weeks~~. Ideally, you will make some contribution every week and the top ~~five~~ ~~of~~ ~~your~~ ~~twelve~~ ~~grades~~ ~~will~~ ~~be~~ ~~taken~~. Your participation can be in the form of a question, in the form of a disagreement, or in the form of an agreement, but should go beyond the original post by either discussing theory/research learned in other classes or this class. You ~~will~~ ~~only~~ ~~need~~ ~~to~~ ~~respond~~ ~~to~~ ~~one~~ ~~of~~ ~~your~~ ~~classmates'~~ ~~posts~~, but the response should be fairly substantial that is, at least a paragraph. Again, I will give you feedback on your first few and go easier on you at the beginning, then expect more from you as the semester goes on. These are due Saturday night at 11:59 pm and for those with accommodations, Sunday night at 11:59 pm. Because you have so many opportunities to hand these in, they will not be accepted ~~at~~ ~~late~~. Another reason I am not accepting these late is that I will be incorporating both the discussion questions and the comments into the following week's first lecture. The general rubric for these will be a zero for not handed in, 1/2 for a question of clarification, 1.25/2 for a comment that ~~question~~ agrees/disagrees but doesn't go beyond the original post, 1.5/2 for a comment that goes beyond original post, 1.75/2 for a comment that ties the post to the larger literature, ~~2/2~~ ~~one~~ that knocks my socks off! All discussion replies will be turned in under the appropriate discussion forum available either through your course schedule link or the communications tab, then discussions from the ~~drop~~ ~~down~~ menu. Please read the following before submitting replies:

University is a place to ~~share~~, question and challenge ideas. Each student brings a different lived experience from which to draw upon. To help one another learn the most we can from this experience please consider the following guidelines.

1. Make a personal commitment to learn ~~not~~ understand, and support your peers.
2. Assume the best of others and expect the best of them.
3. Acknowledge the impact of oppression on the lives of other people and make sure your writing is respectful and inclusive.
4. Recognize and value the experiences, abilities, and knowledge each person brings.
5. Pay close attention to what your peers write before you respond. Think through ~~read~~ ~~your~~

due date listed in the class schedule and will not be accepted late unless you have accommodations, in which case they will be accepted 72 hours late. If you can't get it in on time, you will have to do another one.

We will spend the better part of the first class talking about how to read primary source articles with a critical eye and how to situate them within the larger literature. We will also spend some time talking about plagiarism as many people in last year's class lost a significant proportion of grades because of (mostly inadvertent) plagiarism.

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For support and problem solving of personal and academic concerns: Counselling Services:

<https://www.queensu.ca/studentwellness/counselling-services>

For peer support: AMS Peer Support Centre: <http://amspeersupport.com/>

For health services (including services related to immunizations, IUDs, HPV infection, depression and suicide risk, transgender care, etc.): Health Services:

<https://www.queensu.ca/studentwellness/health-services>

For mental health services (including help with stress, anxiety, low mood, depression, etc.): Mental Health Services: <https://www.queensu.ca/studentwellness/mental-health>

For counselling support for Black and Racialized students: Request counselling/set up appointment by emailing counselling.services@queensu.ca

For services and supports for Indigenous students: Four Directions:

<https://www.queensu.ca/fourdirections/home>

For services and supports for international students: Queen's International Centre:

<https://quic.queensu.ca/>

For information about groups, programs, resources and initiatives surrounding inclusivity at Queen's: Inclusive Queen's : <https://www.queensu.ca/inclusive/content/home>

For help with academic skills: Student Academic Success Services: <https://sass.queensu.ca/>

Academic Integrity

Academic integrity is constituted by the five core fundamental values of honesty, trust, fairness, respect and responsibility (see <http://www.academicintegrity.org>). These values are central to the building, nurturing and sustaining of an academic community in which all members of the community will thrive. Adherence to the

onQ to Turnitin. In doing so, students' work will be included as source documents in the Turnitin reference database, where they will be used solely for the purpose of detecting plagiarism.

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A similarity score is the percentage of a document that is similar to content held within the database. Turnitin does not determine if an instance of plagiarism has occurred. Instead, it gives instructors the information they need to determine the authenticity of work as a part of a larger process.

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SUGGESTED TIME COMMITMENT

Students can expect to spend approximately 10 hours a week (114 hours per term) in study, listening, attending seminars, reading articles and preparing for the presentation for Psyc 450.

CLASS SCHEDULE

Week 1-Introduction

Introduction to class, "getting to know you", go over syllabus, discuss expectations and grading

"How to critique an article"

Textbook Chapter 1 "The Biology of Change"

Gottlieb, G. (2007). Probabilistic epigenesis. *Developmental Science*, 10,

Week 2-Brain Imaging

Textbook Ch 2 "Methods and Populations"

Gilmore, J. H., Knickmeyer, R. C., & Gao, W. (2018). Imaging structural and functional brain

development in early childhood. *Nature Reviews Neuroscience*, 19, 3723
DOI:10.1038/nrn.2018.1

Week 3 Basics in Brain Development

Textbook Chapters 3&4 "From Gene to Brain" and "Building a Brain"

Week 4 Atypical Brain Development

Matthews, M., & Fair, D. A. (2014). Research Review: Functional brain connectivity and child psychopathology – overview and methodological considerations for investigators new to this field. *Journal of Child Psychology and Psychiatry*, 56 (4), 400-410. doi: 10.1111/jcpp.12335

Horga, G., Kaur, T., & Peterson, B. S. (2014). Annual research review: Current limitations and future directions for research on attention deficit hyperactivity disorder. *Journal of Child Psychology and Psychiatry* doi:10.1111/jcpp.12185

Week 5 More Basics of Brain Development

Camacho, M. C., Quinones-Camacho, L. E. & Perlman, S. B. (2020). Does the child brain rest?: An examination and interpretation of resting cognition in developmental cognitive neuroscience. *Neuroimage*, 212, 116688. <https://doi.org/10.1016/j.neuroimage.2020.116688>

Fox, S. E., Levitt, P., & Nelson, C. A. (2010). How the timing and quality of early experiences influence the development of brain architecture. *Child Development*, 81, 1028-1042.

February 12th at 11:59 pm Article Assignment #1 due

Noble, K. G., Houston, S. M., Kan, E., & Sowell, E. R. (2012) Neural correlates of socioeconomic status in the developing brain. *Developmental Science*, 15, 527-535. DOI: 10.1111/j.1467-8624.2012.02247.x

Week 6

Textbook Ch 7 "Perceiving and Acting on the Social World"

Wiesmann, C. G., Friederici, A. D., Singer, T., & Steinbeis, N. (2020). Two systems for thinking about others' thoughts in the developing brain. *Proceedings of the National Academy of Sciences*, 117, 6928-6935. www.pnas.org/cgi/doi/10.1073/pnas.1916725117

Week 7

Textbook Ch. 8 "Learning and Long-Term Memory"

Bauer, P. J. (2008). Toward a neurodevelopmental account of the development of declarative memory. *Developmental Psychobiology*, 50, 39-50.

March 5th -11:59 pm. Article Assignment #2 Due

Final Exam DueDate TBA