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EDHD 775 Spring 2015

Goals

This is a graduate seminar that depends on full participation of everyone in the class. This means that you will need to complete the assigned readings before class (not just reading, but also analysis), and come prepared to summarize, critique, argue, defend, and respond to the readings.

We will discuss in this course the issue of the effects of early experience on brain and behavior and plasticity in development. This is a central question and theme in a large number of areas of developmental research. What is the optimum age for intervention to effect change? What is the effect of early experience on cognitive, social, and emotional development? What are the limits to environmental experience (deprivation, neglect, isolation, and institutionalization) and what effects do these have? Are there critical periods for learning language or for attachment? This list is clearly not exhaustive but it raises some of the issues that we will discuss and the themes of the papers we will read. We will focus the course on the Bucharest Early Intervention Project as an example of the study of severe psychosocial deprivation, the effects of early experience and the issue of critical/sensitive periods.

Course Requirements – All assignments are to be considered as major graded events.

1. Class participation 50%
   Note: I will assign individual members of the class to present a paper from the assigned readings for the coming week. As well, we will have two “reporters” each who will identify an article from Science, Nature, or Nature Neuroscience, for presentation and discussion at the beginning of each class. Although these persons will be presenting I expect that everyone will also initiate participation with comments. My evaluation will be based on your engagement in the class, ability to bring a critical perspective, outside content etc.

2. Final Paper: Research Proposal 50%
   Your task is to design an experiment to advance knowledge in the field of developmental cognitive neuroscience. The experiment needs to meet the following criteria:
   - Developmental
   - Feasible (e.g., a person could realistically carry out the experiment)
   - Address the issue of what factors/mechanisms are driving development in the specific area you choose to investigate.
You can select any developmental domain of interest (e.g., cognitive, language, emotion processing), and your experiment may include multiple methods (e.g., behavioral; brain imaging including EEG, ERP, fNIRS, fMRI, MEG, etc.) – money is no object!

Consider carefully the subjects who would participate – keep in mind the requirement that this study be developmental.

The paper should be structured like a mini ‘grant’ proposal, divided into the following key sections:

a. **Specific Aims** – Describe the main goal and hypotheses to be tested. Place your study in a relevant theoretical/conceptual framework.

b. **Background** – Literature review: your study needs to be grounded in current literature in the area that you have selected and provide the rationale for the proposed experiment (e.g., resolve a controversy in the literature; test a new experimental paradigm; highlight the hypothesized mechanism)

c. **Significance** – discuss the importance of your experiment – what will be learned; how will your experiment advance knowledge in the area; what is the theoretical significance; what is the clinical/educational/applied significance?

d. **Methods** – all key elements of the methods (subjects; stimuli; research design; methods; procedures) need to be described in enough detail so that a reader could carry out the experiment.

e. **Data Analysis** – Include all the relevant dependent and independent variables to be included in your analyses; describe the main statistical tests to be conducted and how these relate back to your aims and hypotheses.

f. **Interpretation of Findings** – discuss the alternative outcomes you might obtain (both predicted and unpredicted); how these would be interpreted in relation to your hypotheses; relate your potential findings to other literature.

The paper is due on Monday May 11th 2015.

**CLASS POLICIES**

**Academic integrity:** The University of Maryland, College Park has a student-administered Honor Code and Honor Pledge. For more information on the Code of Academic Integrity or the Student Honor Council, please visit [http://www.studenthonorcouncil.umd.edu/whatis.html](http://www.studenthonorcouncil.umd.edu/whatis.html). This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. The code prohibits students from cheating, fabrication, facilitating academic dishonesty, and plagiarism. Instances of this include submitting someone else’s work as your own, submitting your own work completed for another class without permission, or failing to properly cite information other than your own (found in journals, books, online, or otherwise). Any form of academic dishonesty will not be tolerated, and any sign of academic dishonesty will be reported to the appropriate University officials.
**Special needs:** If you have a registered disability that will require accommodation, please see the instructor so necessary arrangements can be made. If you have a disability and have not yet registered with the University, please contact Disability Support Services in the Shoemaker Building (301.314.7682, or 301.405.7683 TTD) as soon as possible.

**Religious observances:** The University of Maryland policy on religious observances states that students not be penalized in any way for participation in religious observances. Students shall be allowed, whenever possible, to make up academic assignments that are missed due to such absences. However, the must contact the instructor before the absence with a written notification of the projected absence, and arrangements will be made for make-up work or examinations.

**Course evaluations:** As a member of our academic community, students have a number of important responsibilities. One of these responsibilities is to submit course evaluations each term through CourseEvalUM in order to help faculty and administrators improve teaching and learning at Maryland. All information submitted to CourseEvalUM is confidential. CourseEvalUM will be open for you to complete your evaluations for fall semester courses between December 1 and, December 13. Please go directly to the website (www.courseevalum.umd.edu) to complete your evaluations when you are notified by Campus that the online course evaluation system is open. By completing all of your evaluations each semester, you will have the privilege of accessing online, at Testudo, the evaluation reports for the thousands of courses for which 70% or more students submitted their evaluations.

**Missed single class due to illness:** Once during a semester, a student’s self-authored note will be accepted as an excuse for missing a minor scheduled grading event in a single class session if the note documents the date of the illness, acknowledgement from the student that information provided in the note is correct, and a statement that the student understands that providing false information is a violation of the Code of Student Conduct. Students are expected to attempt to inform the instructor of the illness prior to the date of the missed class.*

**Major scheduled grading events:** Major Scheduled Grading Events (MSGE) are indicated on the syllabus. The conditions for accepting a self-signed note do not apply to these events. Written, signed documentation by a health care professional, or other professional in the case of non-medical reasons (see below) of a University-approved excuse for the student’s absence must be supplied. This documentation must include verification of treatment dates and the time period for which the student was unable to meet course requirements. Providers should not include diagnostic information. Without this documentation, opportunities to make up missed assignments or assessments will not be provided.

**Non-consecutive, medically necessitated absences from multiple class sessions:** Students who throughout the semester miss multiple, non-consecutive class sessions due to medical problems must provide written documentation from a health care professional that their attendance on those days was prohibited for medical reasons.
Non-medical excused absences: According to University policy, non-medical excused absences for missed assignments or assessments may include illness of a dependent, religious observance, involvement in University activities at the request of University officials, or circumstances that are beyond the control of the student. Students asking for excused absence for any of those reasons must also supply appropriate written documentation of the cause and make every attempt to inform the instructor prior to the date of the missed class.

January 26—Romania and child institutionalization


February 2---Class Cancelled

February 9—Early Experience


**February 16---Class Cancelled**

**February 23— Deprivation**


**March 2— Developmental Programming**


**March 9— Stress and Brain**


**March 16---Spring Break**

**March 23--- Cognition**


**March 30--- Autism and Early Experience**


**April 6--- Stress, inflammation and early experience**


glucocorticoid and increased proinflammatory signaling. Proceedings of the National Academy of Science, 106, 34, 14716-14721.


April 13--- Language


Kuhl, P. (2010) Brain Mechanisms in Early Language Acquisition, Neuron: Review. 713-


April 20--- Behavior problems/Mental Health


April 27---Attachment


May 4---Effects of Early Experience-Deprivation on Brain

Hanson, J.L., Adluru, N., Chung, M.K., Alexander, A.L., Davidson, R.J., & Pollak, S.D. (2013). Early neglect is associated with alternations in white matter integrity and cognitive functioning. Child Development...


**May 11 Final Papers Due**