

Nature & Nurture: The Science of Self-Discovery
Spring 2016
Psych 198

Wednesday, 6:00 - 8:00 PM
101 Wheeler
2 units
naturenurturedecal.weebly.com

Facilitators:

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Faculty Sponsor:

Professor Mahesh Srinivasan

Course Objectives:

What makes us who we are? Nature or nurture? The debate has raged on for over a century, and it now seems clear; both are essential. During this class, we aim to deconstruct nature v. nurture, step by step, in an effort to understand ourselves a little bit better. We'll break down genetic mechanisms and hidden environmental influences. We will look at ways in which our genes influence our environment, and ways in which our environment influences our genes. We'll dive into genetic factors in human psychology--personality, traditions, childhood development. And finally, we will examine the ethical and political implications of the information at hand, discussing public policy, genetic determinism, and "designer babies." Each class will consist of one hour of lecture, interspersed with one hour of discussion, group activities, and/or debate. We hope that students will walk away with a general understanding of human behavioral genetics and the ability to confidently dissect current events in this field.

This course assumes no prior knowledge of genetics or psychology, so everyone is welcome!

Enrollment:

Students who wish to enroll should fill out our survey:

<http://tinyurl.com/naturenurturedecal2016>

Two units will be given for Psych 198.

Enrollment will be processed on a first-come, first-served basis. After completing the survey, you will receive a confirmation message about your enrollment status. CCNs will be distributed after our first class session, on **Wednesday, January 20**, and enrollment will be finalized during the fourth week of instruction (2/8-2/12). The remainder of our classes will take place on Mondays, from 4-6 pm.

Grading Policies:

Students will be graded on a pass/no pass basis.

- Lecture attendance - 30%
- Homework submission - 35% (2.7% x 13 assignments)
- Debate participation - 15% (5% x 3 debates)
- Final project & final project planning - 20%

A grade of 65% or above is considered passing. Students can miss up to 2 lectures, no questions asked. Missing three or more lectures or failure to complete a final project will result in an NP grade.

Homework:

Each week, students are responsible for completing the reading, as outlined in the syllabus, and answering assigned questions about the material. All readings and homework can be found on our class website. Homework is due by 6 PM on class days, submitted by Google Form. Late homework will not be accepted.

Debate:

Students will prepare for and actively participate in three debates over the course of the semester. A participation grade will be given for each.

- Debate 1: Twin Studies: Many studies identify genetically vulnerable twins at a young age, and then follow them throughout life. Overall, do you see twin studies as ethically sound practices? Are we just encouraging self-fulfilling prophecies and stigma? (*February 10th*)
- Debate 2: Free Will: Given all that we have learned, do you believe that free will exists? Does it have a place within this field of study? What about genetic determinism? (*April 13th*)
- Debate 3: Neurolaw: In extraordinary circumstances where a criminal defendant has all the cards stacked against him/her (genetic predisposition, abuse as a child, variations in brain function), should the justice system be more accommodating? In the absence of illness, can biological factors be used as a criminal defense? (*April 20th*)

Final Project:

For our final project, students will perform a short presentation on a behavior genetics study that we have not covered in class. This study must link a specific gene (or genes, or epigenetic process, or gene by environment interaction/correlation) to a specific behavior or trait (coffee drinking, autism, etc.). The information can be sourced from a non-research publication, as long as the original study is accessible. The final presentation will include the methods, findings, and implications of the study. We will cover these requirements in detail during class.

By April 13th, students must submit the project planning assignment:

Students will identify and briefly summarize two studies that they are considering for the final project. They will then select one of these studies to present.

Final project presentations will take place on April 27th.

Date	Lecture	Topics Covered	Reading Due
January 20	1. Introduction to Human Behavior Genetics	nature/nurture problem, historical background, eugenics	
January 27	2. Human Behavior Genetics II	heritability, gene x environment correlations/interactions	“Time to Retire the Simplicity of Nature v. Nurture” (Gopnik)
February 3	3. Epigenetics	methylation, imprinting, histone modification	Class survey form due; “Behavioral Genetics” (Baker)
February 10	4. The Twin Study	debate #1 ; twin studies, GWAS, adoption studies, non-Mendelian inheritance	“Grandma’s Experiences Leave a Mark on Your Genes” (Hurley)
February 17	NO CLASS		
February 24	5. Personality	big five, extraversion, altruism, aggression	“Two Lives--One Personality?” (Wright)
March 2	Movie: GATTACA	IQ, genius, temperament, parenting styles	“Siblings Share Genes, but Rarely Personalities” (Spiegel)
March 9	6. Development & IQ	dual inheritance theory, religion, tradition, self-concept	“Nature Trumps Nurture When it Comes to Academic Achievement” (Healy)
March 16	8. Culture, Family, and Social Relationships	dual inheritance theory, religion, tradition, self-concept, attachment patterns, friendships & romance	“What Twins Reveal about the Science of Faith” (Spector) EXTRA CREDIT: “Are Your Genes Choosing Your Friends?” (Netter & Malajian)
March 23	NO CLASS		
March 30	9. Language & Cognition	cognitive scaffolding, language acquisition	“How Language Seems to Shape One’s View of the World” (Yu)
April 6	10. Psychopathology	mood disorders, schizophrenia, psychopathy, stigma	“A Neuroscientist Uncovers a Dark Secret” (Hagerty)
April 13	11. Ethics	debate #2 ; genetic determinism, fatalism, free will	Project planning assignment due; “Genetic and Generic Determinism: A New Threat to Free Will?” (Lipton)
April 20	12. Ethics II	debate #3 ; genetic testing, public policy, political agendas, neurolaw	“Ethical issues in predictive genetic testing” (Fulda & Lykens)
April 27	13. Presentations & Final Remarks	nature, nurture & noise, randomness	All final projects due; “Time to Retire the Simplicity of Nature v. Nurture” (Gopnik)

