

Revised 8 February 2012 Tentative Course Outline

**Laterality and Handedness:
Brain, Mind, Culture and History**

PSYC 770R cross-listed with HIST 585, BSHE 560R, ILA 790

**Sponsored by the Center for
Mind Brain, & Culture**

Weds 1-3:40
CMBC Seminar Room (464), PAIS Building

Emory University

Spring 2012

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This graduate seminar, open also to senior honors students, will investigate the causes and consequences of human laterality in multi-disciplinary perspective as they relate to the "mind" and to the functioning of the brain. The seminar will examine laterality and the findings of neuroscience through the lens of handedness, in historical, philosophical, and psychological perspectives. Students will explore the possible ways in which seemingly contradictory explanations for laterality can be understood as complementary rather than contradictory.

The seminar is designed to enable student collaboration across disciplines and stages of education. Students are drawn from graduate programs in Psychology, History, and the Graduate Institute for Liberal Arts; undergraduate honors students in Neuroscience and Behavioral Biology (NBB), Psychology, and History; and graduate professional degree students from the Rollins School of Public Health, the School of Medicine, and the School of Law.

There is substantial reading and writing required of all students enrolled in this course. If, for any reason, you will be unable or unwilling to meet the demands of this course, you should not enroll in it.

NOTE:

- This syllabus is designed for modifications of readings and topics when appropriate

throughout the semester. THUS, you should check the blackboard course site regularly for updates.

Student Involvement:

In order to facilitate a high level of discussion, students are required to:

- Come to all class meetings on time. If you are unable to attend class, or will be late, please inform the instructor or teaching assistant in advance. Unexcused absences and lateness will impact your final grade.
- Read the assignments prior to the seminar meeting. This is absolutely mandatory.
- Write and post your weekly assignments on the course **Blackboard** site no later than 5 pm on the Tuesday prior to our class meeting.
- Participate in classroom discussions

REQUIRED TEXTS:

(Available at the Emory Campus bookstore or for purchase online)

Coren, Stanley. *The Left-hander Syndrome: the causes and consequences of left-handedness*. New York: Free Press, 1992.

Harrington, Anne. *Medicine, Mind, And The Double Brain: A Study In Nineteenth Century Thought*. Princeton University Press, 1987.

McGilchrist, Ian. *The Master and his Emissary: the divided brain and the making of the Western world*. Yale University Press, 2009. (Kindle edition is also available)

McManus, Ian C. *Right hand, Left hand: the origins of asymmetry in brains, bodies, atoms, and cultures*. London: Weidenfeld & Nicolson, 2002.

Also, assigned readings, not from the texts above, will be available on the course Blackboard site.

Recommended Texts:

Springer, Sally P. and George Deutsch. *Left Brain, Right Brain*. 5th edition. New York: Freeman and Co., 1998. Jaynes,

Julian. *The Origin of Consciousness in the Breakdown of the Bicameral Mind*, Houghton-Mifflin, 1977.

ASSIGNMENTS AND LECTURE TOPICS:

Weekly Postings:

Each week (except when noted) you will be required to post a succinct, approximately 1-page, single-space exposition of the week's readings. Initially you will be asked to identify the thesis or main claim of each reading; later you will be asked to respond to a specific question about the week's assignment. Your postings should reflect underlying themes or issues arising from the specific readings for the week in the context of issues that emerge across the semester as they are reflected in a given week's readings. Your postings must be placed on the Blackboard Discussion Board (NOT the Assignments tab) by 5:00 p.m. on the Tuesday prior to the class meeting.

Final Projects:

Students will be required to produce a final synthetic project, drawing extensively on the readings and the discussions throughout the semester. The final project will examine a question or a problem (developed by the seminar participants) on the general issues investigated throughout the course.

The specific requirements and the scope of the final paper will be elaborated on during the semester. It will vary by how students are enrolled in the course:

Grading:

1. Seminar participation, 10%
2. Weekly postings, 50%
3. Final paper project 40%

Honor Code

All students in this course will be expected to adhere to the Emory University Honor Code that is in force for all the schools at Emory. Information about the honor code can be obtained at the following web site: http://college.emory.edu/current/standards/honor_code.html. Violations of the honor code will be dealt with as dictated by policies in place at the University for the particular school that the student is attending.

Weekly Assignments

18 January 2012: Introduction

Readings:

McManus, I. C. "Dr. Watson's Problem," Chapter 1 of *Right hand, Left hand: the origins of asymmetry in brains, bodies, atoms, and cultures*, 1-15.

Coren, Stanley. "Beliefs and Stereotypes about Handedness," Chapter 1 of *The left-hander syndrome: the causes and consequences of left-handedness*. New York: Free Press, 1992, pp. 1-21.

Coren, Stanley. "The Lopsided Animal," Chapter 2 of *The left-hander syndrome: the causes and consequences of left-handedness*. New York: Free Press, 1992, pp. 22-33.

No post due.

25 January 2012: The Discovery of Laterality

Readings:

Harrington, Anne. *Medicine, Mind, And The Double Brain: A Study In Nineteenth Century Thought*. Princeton University Press, 1987. Chapters 1-4.

Post: *In no more than 2 pages, identify the take home message (or thesis) of each of Harrington's 4 chapters.*

1 February 2012: The Rise and Fall of the Double Brain

Guest speaker: Dr. Marjorie Lorch, Department of Applied Linguistics and Communication, Birkbeck College, University of London

Readings:

Harrington, Anne. *Medicine, Mind, And The Double Brain: A Study In Nineteenth Century Thought*. Princeton University Press, 1987. Chapters 5-end

Hellal, P. and Lorch, M. The validity of Barlow's 1877 case of acquired childhood aphasia: Case notes versus published reports. *Journal of the History of the Neurosciences*, 2007, 16, 378-394.

Post: *Harrington argues that studying the history of the brain tells us as much about how science works as how the brain operates. Do you agree? Do Hellal and Lorch agree? Base your answer on your understanding of her arguments in chapters 5-end.*

8 February 2012: The Left Hand: Biology or Culture?

Readings:

Lombroso, C. (1903). "Left-Handedness and Left-Sidedness." The North American Review 177(562): 440-444.

Hertz, R. (1909). La prééminence de la main droite: étude sur la polarité religieuse. *Revue Philosophique, LXVIII*, 553-580. (English Translation on Blackboard).

McManus, Ian C. "Death & the Right Hand," Chapter 2 of McManus, *Right hand, Left hand : the origins of asymmetry in brains, bodies, atoms, and cultures*. (London: Weidenfeld & Nicolson, 2002, pp. 16-40.

McManus, I. C. (2002). "Kleitz, Drept, Luft, Zeso, Lijevi, Prawy," Chapter 3 of *Right hand, Left hand: the origins of asymmetry in brains, bodies, atoms, and cultures*, pp. 60-81.

Coren, Stanley. "Does Society Make Right-Handers, Chapter 4 of *The left-hander syndrome : the causes and consequences of left-handedness*. New York: Free Press, 1992, pp. 49-71.

Coren, Stanley. "Is Handedness Inherited?" Chapter 5 of *The left-hander syndrome : the causes and consequences of left-handedness*. New York: Free Press, 1992, pp. 72-92.

Recommended Readings:

Kushner, H. (2012) Lombroso & Hertz and the Origins of Left-Handedness, submitted for publication.

Kushner, H. I. (2011). Cesare Lombroso and the pathology of left-handedness. *The Lancet*, 377(9760), 118-119.

Post: Based on this week's assigned readings, is left-handedness a biological or cultural phenomena? Make one PowerPoint slide for each reading, including the takeaway message from each article, and be prepared to elaborate on your slides for the class.

15 February: Handedness in History

Guest speaker: Dr. Lauren J. Harris, Department of Psychology, Michigan State University

Readings:

Harris, L. J. (1990). Cultural influences on handedness: Historical and contemporary theory and evidence. In S. Coren (Ed.), *Left-handedness: Behavioral implications and anomalies*. (pp. 195-258). Oxford England: North-Holland.

Weatherill et al. (2004). Is Maternal depression related to side of infant holding? *International Journal of Behavioral Development*, 28 (5): 421-27.

Harris, L. J. et al. (2006). Mothers' and fathers' lateral biases for holding their newborn infants: A study of images from the World Wide Web, *Laterality*, 12 (1), 64-86.

Harris, L. J., Cardenas, R. A., Spradlin, M. P., Jr., & Almerigi, J. B. (2009). Why are infants held on the left? A test of the attention hypothesis with a doll, a book, and a bag. *Laterality*, 15(5), 548-571.

Harris, L. J. (2009). Side biases for holding and carrying infants: Reports from the past and possible lessons for today. *Laterality*, 15(1-2), 56-135.

Recommended readings:

Harris, L. J. (1980). Left-Handedness: Early Theories, Facts, and Fancies. In J. Herron (Ed.), *Neuropsychology of left-handedness* (pp. 357). New York: Academic Press.

Harris, L. J. (2000). On the evolution of handedness: a speculative analysis of Darwin's views and a review of early studies of handedness in "the nearest allies of man". *Brain Lang*, 73(2), 132-188.

Post: Write 3 questions for Dr. Harris based on your reading of his articles and on what you have learned so far in this course. These questions should not be informational, but rather about how his history does or does not help explain the anomalies of handedness.

22 February 2012: Hands and Brains: Two Views?

Guest Speaker: Dr. William Hopkins, Professor of Psychology, Agnes Scott College and Yerkes Primate Center

Readings:

McManus, I. C. "The Dextrous and the Gauche," Chapter 7 of *Right hand, Left hand: the origins of asymmetry in brains, bodies, atoms, and cultures*, pp. 146-167.

McManus, I. C. "The Left Brain, the Right Brain, and the Whole Brain," Chapter 8 of *Right hand, Left hand: the origins of asymmetry in brains, bodies, atoms, and cultures*, pp.168-201.

Coren, Stanley. "The Two Brains," Chapter 6 of *The left-hander syndrome : the causes and consequences of left-handedness*. New York: Free Press, 1992, pp. 93-113.

Coren, Stanley. "Psycho-Neuro Astrology," Chapter 7 *The left-hander syndrome: the causes and consequences of left-handedness*. New York: Free Press, 1992, pp. 113-133

W. D. Hopkins, et al. (2011). Hand preferences for coordinated bimanual actions in 777 great apes: Implications for the evolution of handedness in Hominins. *Journal of Human Evolution*, 60, 605-611.

Hopkins et al. (2012). The neural and cognitive correlates of aimed throwing in chimpanzees: a magnetic resonance image and behavioural study on a unique form of social tool use. *Philosophical Transactions of the Royal Society- Biological Sciences*, 367, 37-47.

Post: 1) Create 3 questions for Dr. Hopkins to ask during class.

2) Do McManus and Coren agree with one another? Does Hopkins agree with either of them? How and why?

3) Submit one slide on the Hopkins 2012 article. Many of you already did this for 2/8.

29 February: Hand Preference and Left-Handedness: A Hazard to Your Health?

Guest speaker: Dr. Clare Porac, Department of Psychology, Pennsylvania State University, Erie

Readings:

Geschwind, N. and P. Behan (1982). "Left-handedness: association with immune disease, migraine, and developmental learning disorder." Proc Natl Acad Sci U S A 79(16): 5097-5100.

Coren, Stanley. Chapters 8-12, *The left-hander syndrome : the causes and consequences of left-handedness*. New York: Free Press, 1992, pp. 134-221.

Porac, C., & Searleman, A. (2002). The effects of hand preference side and hand preference switch history on measures of psychological and physical well-being and cognitive performance in a sample of older adult right-and left-handers. *Neuropsychologia*, 40(12), 2074-2083.

Porac, C., & Searleman, A. (2006). The relationship between hand preference consistency, health, and accidents in a sample of adults over the age of 65 years. *Laterality*, 11(5), 405-414.

Porac, C. (2009). Hand preference and skilled hand performance among individuals with successful rightward conversions of the writing hand. *Laterality*, 14(2), 105-121.

Post: Write 3 questions for Dr. Porac based on the week's readings and what you have learned so far in this course.

7 March 2012: Reactions

Readings:

McManus, I. C. "Vulgar Errors," Chapter 12 of *Right hand, Left hand: the origins of asymmetry in brains, bodies, atoms, and cultures*.

Annett, M. (1997). Schizophrenia and autism considered as the products of an agnostic right shift gene. *Cogn Neuropsychiatry*, 2(3), 195-214.

Corballis, M. C., Hattie, J., & Fletcher, R. (2008). Handedness and intellectual achievement: an even-handed look. *Neuropsychologia*, 46(1), 374-378.

Lindell, A. K. (2011). Lateral thinkers are not so laterally minded: Hemispheric asymmetry, interaction, and creativity. *Laterality*, 1-20.

Kushner, H. I. "Retraining Left-Handers and the Etiology of Stuttering: The Rise and Fall of an Intriguing Theory," *Laterality: Asymmetries of Body, Brain and Cognition*, prepublication early release, 20 December 2011.

Recommended Readings:

Kushner, H. I. (2011). Retraining the King's left hand. *Lancet*, 377(9782), 1998-1999.

Post: Based on this week's readings and previous discussion, how strong is the evidence that learning disorders are connected to handedness and laterality?

14 March: NO CLASS: Spring Break

21 March: Measurement: Why There are No Left-Handers in China (Kushner, Lecture)

Readings:

Coren, Stanley. "Measuring Sidedness," Chapter 3, *The left-hander syndrome: the causes and consequences of left-handedness*. New York: Free Press, 1992, pp. 34-48.

McManus, I. C. "Ehud, Son of Gera," Chapter 9 of *Right hand, Left hand: the origins of asymmetry in brains, bodies, atoms, and cultures*, pp. 202-230.

No post due, but prepare at home for in-class assignment: Working in groups of 3, make 6 PowerPoint slides outlining these two chapters. Your final 2 slides should be your evaluation of the arguments. Post slides on BB Discussion Board when finished (for the rest of the class to access).

28 March Laterality Revisited:

Readings:

McGilchrist review article, TBA

Post: TBA

4 April Laterality: Lecture on Metapsychology of Laterality

Instructor will discuss: Jaynes, Julian. *The Origin of Consciousness in the Breakdown of the Bicameral Mind*, Houghton-Mifflin, 1977

No post due, but be prepared to discuss ideas for projects, and begin to work on in class.

11 April 2012: How the Brain Has Shaped Our World

Readings:

McManus, I. C. "The World, The Small the Great, Chapter 15 of *Right hand, Left hand: the origins of asymmetry in brains, bodies, atoms, and cultures*

Post: Does the McManus chapter agree with McGilchrist's book, based on what we discussed about the review article? Why or why not?

18 April 2012: Projects

TBA

25 April 2012: Projects

TBA

2 May 2012: Final papers due by 5 pm