

## FACE PECEPTION

Course Syllabus  
Fall, 2014

Course: Soc Sci 239A  
Code: 68855

Lecture: TuTh 2:00-3:30  
Room: ICS 243

TEXT: Journal articles, listed below

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### GENERAL INFORMATION

Face processing has emerged as a major research area within cognitive neuroscience. PET and fMRI studies suggest that there are areas of human cerebral cortex specialized to process faces. EEG studies reveal face-specific ERPs, some affected by prior familiarity with a face, and one that is not. Psychophysical studies document unique properties of face perception, including the observations that 2D inversion or photographic negation of a face dramatically impair recognition. Computational and neural network modelers have proposed numerous theories of face identification and emotional recognition. In this seminar we will study the recent research in each of these areas. For the first three weeks I will introduce the basic issues and theories of face processing. For the last seven weeks we will discuss one or two journal articles at each meeting, with the discussion led by a different student each time. Our goal is to know the state of the art of this field by the end of the quarter, and to propose new theories and experiments that will advance the state of the art.

Your grade will be based on the seminars you lead and on a paper due at the end of the quarter. Your grade for the seminar presentation will be based on how well you master the material you present, how clearly you present its essence, and how penetratingly you critique its strengths and weaknesses. You are, of course, expected to have read whatever material is the subject for discussion in each session, whether or not you are the primary presenter. Come prepared with questions for the discussion leader, critiques of the material, and general comments. To make sure that we all read the material, at the beginning of each class we will put all of our names in a hat and draw one out at random. The person whose name is drawn will open the class with a five-minute summary of the material for that day.

The paper should be ten-paged, double-spaced, typewritten, and should present either a new theory of some aspect of face processing, or a new experiment with a detailed design. The paper should present your theory or experiment in the context of the current research literature. Of course I expect the paper to be flawless in style, grammar, and punctuation.

## SCHEDULE OF LECTURES AND READINGS

<i>Lecture</i>	<i>Date</i>	<i>Topic</i>	<i>Paper</i>
1	Th 10/2	Introduction	—
2	Tu 10/7	Introduction	—
3	Th 10/9	Introduction	—
4	Tu 10/14	Introduction	—
5	Th 10/16	Introduction	—
6	Tu 10/21	Introduction	—
7	Th 10/23	Seminar	Daniel Stehr, 19
8	Tu 10/28	Seminar	3
9	Th 10/30	Seminar	6
10	Tu 11/4	Seminar	11, 13
11	Th 10/6	Seminar	10
12	Tu 11/11	Veterans Day	
13	Th 11/13	Seminar	2
14	Tu 11/18	Seminar	9
15	Th 11/20	Seminar	1
16	Tu 11/25	Seminar	14
—	Th 11/27	Thanksgiving Holiday	
17	Tu 12/2	Seminar	4,5
18	Th 12/4	Seminar	15
19	Tu 12/9	Seminar	12
20	Th 12/11	Seminar	18
—	Th 12/18	<b>FINAL</b> — 1:30 - 3:30	

## LITERATURE

1. Cooper E E, Wojan T J. 2000 “Differences in the coding of spatial relations in face identification and basic-level object recognition” *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 26, 470–488
2. Swallow K, Jiang Y. 2011. “The role of timing in the attentional boost effect.” *Attention, Perception & Psychophysics*, 73, 389–404.
3. Diamond R, Carey S. 1986 “Why faces are and are not special: An effect of expertise” *Journal of Experimental Psychology: General*, 115, 107-117
4. Eimer M. 2000 “Event-related brain potentials distinguish processing stages involved in face perception and recognition” *Clinical Neurophysiology*, 111, 694–705
5. Farah M J, Rabinowitz C, Quinn G E. 2000 “Early commitment of neural substrates for face recognition” *Cognitive Neuropsychology*, 17, 117–124
6. Farah M J, Wilson K D, Drain M, Tanaka J N. 1998 “What is “Special” about face perception?” *Psychological Review*, 105, 482–498
7. Gauthier I, Tarr M J. 1997 “Becoming a ‘Greeble’ expert: exploring mechanisms for face recognition” *Vision Research*, 37, 1673–1682
8. Kanwisher N, McDermott J, Chun M M. 1997 “The fusiform face area: A module in human extrastriate cortex specialized for face perception” *Journal of Neuroscience*, 17, 4302–4311
9. Khurana B. 2000 “Not to be and then to be: Visual representation of ignored unfamiliar faces” *Journal of*

Experimental Psychology: Human Perception and Performance, 26, 246–263

10. Leder H, Bruce V. 2000 “When inverted faces are recognized: The role of configural information in face recognition” *The Quarterly Journal of Experimental Psychology*, 53A, 513–536

11. Liu C H, Collin C A, Burton A M, Chaudhuri A. 1999 “Lighting direction affects recognition of untextured faces in photographic positive and negative” *Vision Research*, 39, 4003–4009

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13. Rensink R A, O'Regan J K, Clark J J. 1997 “To see or not to see: The need for attention to perceive changes in scenes” *Psychological Science*, 8, 368–373

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15. Turk M, Pentland A P. 1990 “Eigenfaces for recognition” *Cognitive Neuroscience*, 3, 71–86

16. Ullman S, Sali E, Vidal-Naquet M. 2001 “A fragment-based approach to object representation and classification” *Proceedings of the 4th International Workshop on Visual Form*, 85–100

17. Wojciulik E, Kanwisher N, Driver J. 1998 “Covert visual attention modulates face-specific activity in the human fusiform gyrus: fMRI study” *Journal of Neurophysiology*, 79, 1574–1579

18. dal Martello M, Maloney L. 2006 “Where are kin recognition signals in the human face?” *Journal of Vision*, 6, 1356–1366.

19. Peshek, D., SammakNejad, N., Hoffman, D.D., Foley, P. 2011. Preliminary evidence that the limbic ring influences facial attractiveness. *Evolutionary Psychology*, 9, 137–146.