

About Perception

Have you ever speculated about the people who feel like they are always late, while others (like us) feel like we have all the time in the world? Or, have you tried to guess what Fido notices about the way you play guitar, or what he watches about you when you dance? Or, whether blue-eyed people see the same colors that brown-eyed people do? Or, how the migrating sea turtles find their way back to Florida and to Brazil year after year (and you can just about find your way to Rivington and Ludlow)?

This might come as a surprise, but these musings are about perception. It might also surprise you to learn that there is a long tradition of pondering these questions—not these exact questions, but questions that have the same theme. There is a briefer scientific tradition that concerns us immediately, of direct experimental investigation of the psychology of perception. These studies cross disciplines, among them optics and acoustics, chemistry, sensory physiology, neuroscience, linguistics and philosophy, artificial intelligence, ecology and evolution, ethology, cognitive psychology, and gastronomy. This variety of scientific knowledge has been fundamental to perceptual psychologists precisely because the goal of such studies is to explain the causal processes, beginning with objects and events, through the senses and the nervous system, which culminate in *the apprehension of the world by the mind*: Perception.

Learning Objectives

Every course has intellectual or scholastic aims, and in Perception these include the knowledge, skills and perspectives that a student might expect to command as a consequence of conscientious participation. There are several:

- to describe the ways an animal notices the properties of objects and events;
- to distinguish sensory samples from attributes of objects noticed by looking, listening, touching, tasting, and smelling;
- to explain the merging of senses into unified experience;
- to recount the causal sequence by which objects and events evoke perceptual impressions;
- to contrast differing points of view in perceptual explanation (skepticism, idealism, realism, structuralism);
- to recognize the use of scientific evidence to establish and to refine a principled explanation;
- to connect scientific knowledge of perception to everyday instances of perception.

Along the way, you will learn to use the pertinent technical and anatomical details in explaining the causes of perception, to become acquainted with methods of calibrating sensory acuity and identifying the dimensions of sensitivity of each of the modalities, and to learn the conceptual and material motivation that has characterized the scientific study of perception.

About Psychology 1110x

The text required for the course is available at Book Culture (536 West 112th Street) and at the University Bookstore (2922 Broadway):

Yantis, S., & Abrams, R. A. (2017). *Sensation and Perception, Second Edition*. New York: Worth Publishers. [ISBN: 978-1-4641-1170-9]

In addition to the text, a selection of articles on perceptual topics is required. The articles can be found through the Courseworks site for *Perception*.

Alper, *Antinoise creates sounds of silence*.
Arlettaz et al., *Effects of acoustic clutter on prey detection by bats*.
Beck, *Perception of surface color*.
Békésy, *The ear*.
Breughel et al., *Mosquitos use vision to associate odor plumes with thermal targets*
Clark, et al., *Preliminary experiments on aural significance...*

Cowell, *The perfect bacon sandwich decoded*.
DeCampi, *The limits of manned space flight*.
Doty, *Communication of gender from human breath odors*.
Gauger & Sapiejewski, *Voyager pilots avoid hearing loss on historic flight*.
Johansson, *Visual motion perception*.
Kaitz, *Recognition of familiar individuals by touch*.

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| Kendrick, & Baldwin, <i>Cells in the temporal cortex of conscious sheep...</i> | Ohmes et al., <i>Sensory and physical properties of ice creams...</i> |
| Konkle et al., <i>Motion aftereffects transfer between touch and vision.</i> | Pons, et al., <i>Massive cortical reorganization after sensory deafferentation...</i> |
| Kourtzi & Kanwisher, <i>Representation of perceived object shape...</i> | Quiroga et al., <i>Invariant visual representation by single neurons in the human brain.</i> |
| Labows, <i>What the nose knows.</i> | Roueché, <i>All I could do was stand in the woods.</i> |
| Lichtenstein et al., <i>Headphone use and pedestrian injury and death in the United States, 2004-2011</i> | Roueché, <i>Impression: Essentially normal.</i> |
| Michel et al., <i>A taste of Kandinsky.</i> | Strassman, <i>Menstrual synchrony: Cause for doubt</i> |
| Miller, <i>Brain scans of pain raise questions for the law.</i> | Wurtz, Goldberg & Robinson, <i>Brain mechanisms of visual attention.</i> |

Agenda

At each class meeting, we will discuss a particular topic in the psychology of perception. An agenda of lectures and reading assignments is listed on an accompanying page.

Quizzes

Each week, a quiz on the chapters in the textbook reading assignment will be available at the Canvas site for *Perception*. Each quiz pertains to a single chapter, and will contain 10 questions; over the course of the semester, you can accumulate 150 points by completing all of the quizzes on the fifteen chapters assigned from the textbook. You may complete these quizzes using your textbook as a direct resource (the quizzes may be taken “open book”). The quiz or quizzes assigned for each week must be completed by 2 A.M. on Sunday evening before the Monday that begins a new academic week. After the stroke of 2 A.M., access to that week’s quizzes will end, and the opportunity to earn the points for that quiz will end. Due dates and times are posted for each quiz in the syllabus and on the Canvas site.

Exams

There will be three exams during the semester, covering material from the lectures, the reserve readings, and portions of the textbook if the lectures have discussed these. Each exam will be worth 50 points. Slides from the lectures will be posted to the Canvas site for *Perception* as they become available; these will be pdf (portable document format) files, and you may read them in a browser or download them to read in Acrobat Reader or another utility. Exams will be composed of questions of varied formats (several kinds of short answer). Exams will be taken in class.

The dates of the first and second exams are already designated (see the agenda). Please review your plans for the Fall Term to determine whether you can be present in class when the exams are scheduled to occur. If you cannot be present in class at the appointed exam times, you may not enroll in this course.

THERE WILL BE NO MAKE-UP EXAMS UNDER ANY CIRCUMSTANCES.

Grades

The course grade is a summary of performance on quizzes (150 points possible) and exams (150 points possible). No student will receive a grade of “Incomplete” without documented medical justification.

How to Get Into Perception

The enrollment for *Perception* (PSYC BC 1110x) and for *Perception Laboratory* (PSYC BC 1109x) will be set at the first class meeting on Wednesday, September 5. You must attend the first class meeting on Wednesday, September 5 to be admitted to *Perception Laboratory*. Although *Perception Lecture* and *Laboratory* are registered separately and have individual call numbers, no student may receive credit for *Laboratory* without enrolling concurrently in *Perception (Lecture)* and earning a passing grade. The first meetings of *Perception Laboratory* will occur in 410 Milbank on Tuesday, September 18 (Section 1) and on Thursday, September 20 (Section 2).

On Classroom Decorum, #1: You may take notes in class with a laptop computer set in mute mode. Yet, you might be intrigued to learn that a student who takes notes by hand retains information better than one who takes notes on a laptop. At least, some fair studies point to this conclusion. One reason that this finding is plausible is that taking notes on paper allows enormous flexibility in the manner and mode of the inscribed details. In contrast, taking notes on a laptop forces the note taker to compress everything into a condensed narrative, even if photos or diagrams are added afterwards to supplement the text. Of course, taking any note is better than taking none, inasmuch as the act of thinking and then describing something presents a chance to formulate a premise to be learned in the first place. The conclusion: You might care to go old school for the sake of learning, but it is your choice.

On Classroom Decorum, #2: The use of a flash camera, cell phone, pager, personal digital assistant or other beeping, buzzing, vibrating, chiming, ringing, clicking, or blinking technology is **not** permitted during class meetings of *Perception* unless it is required to preserve your life. A student whose technological accessories disrupt class (by beeping, buzzing, vibrating, chiming, ringing, clicking, or blinking, etc.) will be dismissed from class and a grade of **W** will be assigned for the semester.

Please Note: A student who requires accommodation for a specific disability must notify the Office for Disability Services and the instructor at the close of the first class meeting.

Agenda

Date	Lecture Topic	Reading Assignment, Quiz Schedule
9/5	Greetings and Introduction	van Breughel
9/10	Foundations	Y & A: 1; Quiz Y & A 1
9/12	Beginning to see the light	Y & A: 2
9/17	Elementary sensations	Y & A: 3; Quiz Y & A 2, 3
9/19	Your face in the place	Y & A: 4; Quiroga; Kendrick & Baldwin
9/24	Color	Y & A: 5; Beck; Quiz Y & A 4, 5
9/26	Within arm's length...	Y & A: 6; Kourtzi & Kanwisher
10/1	The mobile eye, the object in motion	Y & A: 7; Johansson; Quiz Y & A 6, 7
10/3	✍ FIRST EXAMINATION ✍	
10/8	Perception and action	Y & A: 8; Quiz Y & A 8
10/10	Looking or seeing?	Y & A: 9; Wurtz
10/15	Riding the wave	Y & A: 10 (pp. 329-349); Alper; Gauger; Quiz: Y & A 9, 10
10/17	Place and volley	Y & A: 10 (pp. 349-365); Békésy
10/22	Auditory analysis: Timbre!	Y & A: 11 (pp. 367-372); Quiz Y & A 11
10/24	Feast of the bats; An Auditory Scene	Y & A: 11 (pp. 372-399); Arlettaz; Lichenstein
10/29	Wadja say?	Y & A: 12 (pp. 401-422); Quiz Y & A 12
10/31	Where's the melody?	Y & A: 12 (pp. 422-435); Saldanha & Corso
11/5	ACADEMIC HOLIDAY	
11/7	✍ SECOND EXAMINATION ✍	
11/12	Touched	Y & A: 13 (pp. 437-451); Pons; Quiz Y & A 13
11/14	Ow! Hot!	Y & A: 13 (pp. 451-452); Miller
11/19	Get the feel of it	Y & A: 13 (pp. 452-471) Kaitz; Konkle
11/21	Perception does not meet: Thanksgiving Travel Day	
11/26	Which end is up?	Y & A: 13 (pp. 471-479); DeCamppli; Roueché (1958): <i>Impression: Essentially normal</i>
11/28	A plume of odorants	Y & A: 14 (pp. 481-499) Labows; Quiz Y & A 14
12/3	A haunting fragrance	Y & A: 14 (pp. 500-502)
12/5	Animal attraction	Y & A: 14 (pp. 503-511); Strassman
12/10	Good Taste, Dynamic Flavor	Y & A: 15; Roueché (1977): <i>All I could do was stand in the woods</i> ; Cowell; Ohmes; Michel; Quiz Y & A 15
12/11-13	REQUIRED READING PERIOD	
	✍ THIRD EXAMINATION OCCURS DURING FINAL EXAM PERIOD ✍ (most likely date and time: December 17, 2018 at 9:00 AM)	

RESERVE READINGS ARE AVAILABLE THROUGH COURSEWORKS/CANVAS

- Alper, J. (1991). Antinoise creates sounds of silence. *Science*, 252, 508-509.
- Arlettaz, R., Jones, G., & Racey, P. A. (2001). Effects of acoustic clutter on prey detection by bats. *Nature*, 414, 742-745.
- Beck, J. (1975). The perception of surface color. *Scientific American*, 233 (2), 62-75.
- Békésy, G., von (1957). The ear. *Scientific American*, 197 (2), 66-78.
- Breughel, F. v., Riffell, J., Fairhall, A., Dickenson, M. H. (2015). Mosquitoes use vision to associate odor plumes with thermal targets. *Current Biology*, 25, 2123-2129.
- Clark, C., Luce, D., Abrams, R., Schlossburg, H., & Rome, J. (1963). Preliminary experiments on the aural significance of parts of tones of orchestral instruments and on choral tones. *Journal of the Audio Engineering Society*, 11, 45-54.
- Cowell, A. (2007). London Journal: The perfect bacon sandwich. *The New York Times*, April 11, 2007.
- DeCampi, W. M. (1986). The limits of manned space flight. *The Sciences*, 26 (5), 47-52.
- Doty, R. L., Green, P. A., Ram, C., & Yankell, S. L. (1982). Communication of gender from human breath odors: Relationship to perceived intensity and pleasantness. *Hormones and Human Behavior*, 16, 13-22.
- Ehrsson, H. H., Spence, C., & Passingham, R. E. (2004). That's my hand! Activity in premotor cortex reflects feeling of ownership of a limb. *Science*, 305, 875-877.
- Gauger, D., & Sapiejewski, R. (1987). Voyager pilots avoid hearing loss on historic flight. *Sound and Vibration*, X, 10-12.
- Gibson, J. J. (1962). Observations on active touch. *Psychological Review*, 69, 477-491.
- Johansson, G. (1975). Visual motion perception. *Scientific American*, 232 (6), 76-88.
- Kaitz, M. (1992). Recognition of familiar individuals by touch. *Physiology & Behavior*, 52, 565-567.
- Kendrick, K. M., & Baldwin, B. A. (1987). Cells in the temporal cortex of conscious sheep can respond preferentially to the sight of faces. *Science*, 236, 448-450.
- Konkle, T., Wang, Q., Hayward, V., & Moore, C. I. (2009). Motion aftereffects transfer between touch and vision. *Current Biology*, 19, 1-6.
- Kourtzi, Z., & Kanwisher, N. (2001). Representation of perceived object shape by the human lateral occipital complex. *Science*, 293, 1506-1509.
- Labows, J. N., Jr. (1980). What the nose knows. *The Sciences*, 20, 11-13.
- McGinnies, E. (1949). Emotionality and perceptual defense. *Psychological Review*, 56, 244-251.
- Michel, C., Velasco, C., Gatti, E., & Spence, C. (2014). A taste of Kandinsky: Assessing the influence of the artistic visual presentation of food on the dining experience. *Flavour*, 3, 2-10.
- Miller, G. (2009). Brain scans of pain raise questions for the law. *Science*, 323, 195.
- Ohmes, R. L., Marshall, R. T., & Heymann, H. (1999). Sensory and physical properties of ice creams containing milk fat or fat replacers. *Journal of Dairy Science*, 81, 1222-1228.
- Pons, T. M., Garraghty, P. E., Ommaya, A. K., Kaas, J. M., Taub, E., & Mishkin, M. (1991). Massive cortical reorganization after sensory deafferentation in adult macaques. *Science*, 252, 1857-1860.
- Quiroga, R. Q., Reddy, L., Kreiman, G., Koch, C., & Fried, I. (2005). Invariant visual representation by single neurons in the human brain. *Nature*, 435, 1102-1107.
- Roueché, B. (1958). Impression: Essentially normal. *The New Yorker*, 34(7), 71-90.
- Roueché, B. (1977). All I could do was stand in the woods. *The New Yorker*, 53(30) 97-117.
- Strassman, B. I. (1999). Menstrual synchrony: Cause for doubt. *Human Reproduction*, 14, 579-580.
- Wurtz, R. H., Goldberg, M. E., & Robinson, D. L. (1982). Brain mechanisms of visual attention. *Scientific American*, 246, 124-135.