

## Animal Learning (PSYC 305)

Mr. John E. Kelsey  
Office: Pettengill 359 (6184)

Winter, 2011  
11:00 MTWF

Office Hours: 9-10 T & 9:30-11:30 Th  
and by appointment

**Texts:** Bouton, M. E. (2007). *Learning and behavior*. Sunderland, MA: Sinauer.  
Alloway, T., Wilson, G., & Graham, J. (2005). *Sniffy the virtual rat: Pro version 2.0*. Belmont, CA:  
Wadsworth/Thompson.

**Reserved Reading:** (on back)

Jan.	10	<b>Introduction to Learning Theory</b>	
	12	a. History, paradigms, and central issues. (Ch. 1; Olton, 1979; Sniffy, Chs. 1 & 2)	
	14	<b>Non-associative Learning: Habituation and Sensitization</b> (Domjan, 2003, Ch. 2, 35-51; Sniffy, Ch. 8 [19])	
		<b>Classical/Pavlovian Conditioning</b>	
	18	a. Learning and adaptation (Ch. 2; Domjan et al., 1998; Siegel et al., 1982)	
	19	b. Phenomena (Ch. 3, 73-89; Sniffy, Chs. 3 [1-5] & 6 [12, 20, & 13,21])	
	24	c. Conditioned inhibition (Ch. 3, 89-93; Kearns et al., 2005; Sniffy, Ch. 5 [10 & 11])	
	28	d. Information value (Ch. 3, 93-102; Gamzu & Williams, 1971; Sniffy, Ch. 4 [6-8])	
Feb.	1	e. Theories of conditioning	<b>Quiz</b>
	2	(1) Rescorla-Wagner (Ch. 4, 103-130; Williams & McDevitt, 2002; Sniffy, Chs. 4 [9])	
	7	(2) Comparator model and others (Ch. 4, 130-144; Sniffy, Ch. 7 [15 & 17])	
	8	f. Memory, context, extinction, and response modulation/occasion setting (Ch. 5, 145-169; Davis et al., 2005; Schiller et al., 2010)	
	11*	<b>Exam 1</b>	
	14	g. Nature of CRs (Ch. 5, 169-184; Siegel et al., 1982; Siegel, 2008)	
	16	<b>Generality of the Laws of Conditioning</b> (Ch. 6; Garcia & Koelling, 1966)	
		<b>Instrumental/Operant Conditioning</b>	
	28	a. Phenomena, issues and schedules (Ch. 7, 224-239; Sniffy, Chs. 9, 10 [22-27], 12 [31-35], & 14)	
March	2*	b. Choice and self-control (Ch. 7, 239-251; Johnson et al., 2007)	
	7	c. Behavioral economics (Ch. 7, 248-251; Jensen et al., 2007)	
	9	d. Theories of reinforcement (Ch. 7, 251-266)	
	11	e. Stimulus control	
	14	(1) Generalization and discrimination (Ch. 8, 278-292; Sniffy, Ch. 13 [37-42])	
	15	(2) Concept formation (Ch. 8, 267-278 & 292-298; Wasserman, 1995)	
	18	f. Memory (Ch. 8, 296-306 & 314-328; Menzel, 1973; Olton, 1979; Pravosudov & Clayton, 2002)	
	21	g. Timing, serial pattern learning, and counting (Ch. 8, 306-313; Hauser, 2000; Brannon & Terrace, 1998; Miller, 2010)	
	22	h. Role of motivation (Ch. 9; Sniffy, Ch. 12 [36])	
		<b>A Synthetic Perspective</b>	
	23	a. Avoidance behavior (Ch. 10, 371-389; Mobbs et al., 2007)	
	25	b. Learned helplessness (Ch. 10, 389-395; Maier & Watkins, 2005; Baratta et al., 2007)	
	30	c. Misbehavior, superstition, and punishment (Ch. 10, 395-403; Sniffy, Ch. 11 [28-30])	
April	1	d. Cognitions (Ch. 10, 403-420; Blaisdell et al., 2006; Dally et al., 2006; Raby et al., 2007)	
	6	e. Imitation and culture (Zentall, 2003; Whiten et al., 2005; Paukner et al., 2009) <b>Paper Due</b>	
	8	f. Language learning (Ch. 12, pp. 374-385; Kaminski et al., 2004; Zentall, 2000)	
	12	<b>Final Exam: 3:45 PM</b>	

\*I will be out of town on February 11 and March 4.

## Tentative Grading Percentages

First Exam	20%
Second Exam	20%
Paper	15%
Quizzes and Class Participation	15%
Final Exam	<u>30%</u>
	100%

## References

- Baratta, M. V., Christianson, J. P., Gomez, D. M., Zarza, C. M., Amat, J., Masini, C. V., et al. (2007). Controllable versus uncontrollable stressors bi-directionally modulate conditioned but not innate fear. *Neuroscience*, *146*, 1495-1503.
- Blaisdell, A. P., Sawa, K., Leising, K. J., & Waldmann, M. R. (2006). Causal reasoning in rats. *Science*, *311*, 1020-1022.
- Brannon, E. M., & Terrace, H. S. (1998). Ordering of the numerosities 1 to 9 by monkeys. *Science*, *282*, 746-749.
- Dally, J. M., Emery, N. J., & Clayton, N. S. (2006). Food-caching western scrub-jays keep track of who was watching whom. *Science*, *312*, 1662-1665.
- Davis, M., Myers, K. M., Ressler, K. J., & Rothbaum B. O. (2005). Facilitation of extinction of conditioned fear by D-cycloserine. *Current Directions in Psychological Science*, *14*, 214-218.
- Domjan, M. (2003). *The principles of learning and behavior* (5<sup>th</sup> ed.). Belmont, CA: Wadsworth/Thompson.
- Domjan, M., Blesbois, E., & Williams, J. (1998). The adaptive significance of sexual conditioning: Pavlovian control of sperm release. *Psychological Science*, *9*, 411-415.
- Gamzu, E., & Williams, D. R. (1971). Classical conditioning of a complex skeletal response. *Science*, *171*, 923-925.
- Garcia, J., & Koelling, R. (1966). Relation of cue to consequence in avoidance learning. *Psychonomic Science*, *4*, 123-124.
- Hauser, M. D. (March/April, 2000). What do animals think about numbers? *Scientific American*, 144-151.
- Jensen, K., Call, J., & Tomasello, M. (2007). Chimpanzees are rational maximizers in an ultimatum game. *Science*, *318*, 107-109.
- Johnson, M. W., Bickel, W. K., & Baker, F. (2007). Moderate drug use and delay discounting: a comparison of heavy, light, and never smokers. *Experimental and Clinical Psychopharmacology*, *15*, 187-194.
- Kaminski, J., Call, J., & Fischer, J. (2004). Word learning in a domestic dog: Evidence for “fast mapping”. *Science*, *304*, 1682-1683.
- Kearns, D. N., Weiss, S. J., Schindler, C. W., & Panlilio, L. V. (2005). Conditioned inhibition of cocaine seeking in rats. *Journal of Experimental Psychology: Animal Behavior Processes*, *31*, 247-253.
- Maier, S. F., & Watkins, L. R. (2005). Stressor controllability and learned helplessness: the roles of the dorsal raphe nucleus, serotonin, and corticotropin-releasing factor. *Neuroscience & Biobehavioral Reviews*, *29*, 829-841.
- Menzel, E. W. (1973). Chimpanzee spatial memory organization. *Science*, *182*, 943-945.
- Miller, G. (2010). Cognition research. investigation leaves field in the dark about a colleague's work. *Science*, *329*, 890-891.
- Mobbs, D., Petrovic, P., Marchant, J. L., Hassabis, D., Weiskopf, N., Seymour, B., Dolan, R. J., & Frith, C. D. (2007). When fear is near: Threat imminence elicits prefrontal-periaqueductal gray shifts in humans. *Science*, *317*, 1079-1083.
- Olton, D. S. (1979). Mazes, maps, and memory. *American Psychologist*, *34*, 583-596.
- Paukner, A., Suomi, S. J., Visalberghi, E., & Ferrari, P. F. (2009). Capuchin monkeys display affiliation toward humans who imitate them. *Science*, *325*, 880-883.
- Pravosudov, V. V., & Clayton, N. S. (2002). A test of the adaptive specialization hypothesis: Population differences in caching, memory, and the hippocampus in black-capped chickadees (*Poecile atricapilla*). *Behavioral Neuroscience*, *116*, 515-522.
- Raby, C. R., Alexis, D. M., Dickinson, A., & Clayton, N. S. (2007). Planning for the future by western scrub-jays. *Nature*, *445*, 919-921.
- Schiller, D., Monfils, M. H., Raio, C. M., Johnson, D. C., Ledoux, J. E., & Phelps, E. A. (2010). Preventing the return of fear in humans using reconsolidation update mechanisms. *Nature*, *463*, 49-53.
- Siegel, S., Hinson, R. E., Krank, M. D., & McCully, J. (1982). Heroin "overdose" death: contribution of drug-associated environmental cues. *Science*, *216*, 436-437.
- Siegel, S. (2008). Learning and the wisdom of the body. *Learning & Behavior : A Psychonomic Society Publication*, *36*, 242-252.
- Wasserman, E. A. (1995). The conceptual abilities of pigeons. *American Scientist*, *181*, 246-255.
- Whiten, A., Horner, V., & de Waal, F. B. (2005). Conformity to cultural norms of tool use in chimpanzees. *Nature*, *437*, 737-740.
- Williams, B. A., & McDevitt, M. A. (2002). Inhibition and superconditioning. *Psychological Science*, *13*, 454-459.
- Zentall, T. R. (2000). Symbolic representation by pigeons. *Current Directions in Psychological Science*, *9*, 118-123.
- Zentall, T. R. (2003). Imitation by animals: How do they do it? *Current Direction in Psychological Science*, *12*, 91-95.