

Walter T. "Wally" Herbranson

Herbert and Pearl Ladley Endowed Chair of Cognitive Science

Whitman College

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Department of Psychology

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Employment

<u>Whitman College</u>	2007-present	Herbert and Pearl Ladley Endowed Chair of Cognitive Science
	2006-present	Associate Professor of Psychology
	2000-2006	Assistant Professor of Psychology

Education

University of Utah 1994-2000 M.S., 1997
Ph.D., 2000

Psychology (Cognitive and Neural Science program)

Advisor: Charles Shimp

Master's Thesis Title: *Ill-Defined Visual Concepts in the Pigeon (Columba Livia)*

Dissertation Title: *Cognitive Dissociation of Memory Systems: Implicit and Explicit Memory in Pigeons (Columba Livia)*

Carleton College 1990-1994 B.A., 1994;

Psychology, with minor (concentration) in Cognitive Studies.

Academic Advisor: Lloyd Komatsu

Thesis Advisor: Julie Neiworth

Senior Thesis Title: *The Influence of Revision Styles on the Creative Process: Effortless Intuition or Laborious Editing?*

Research Interests

Avian Cognition (particularly visual categorization, spatial attention, and response sequence learning in pigeons)

Animal Learning and Behavior

Comparative and Evolutionary Psychology

Cognitive Science

Professional Affiliations

American Psychological Association
 APA Division 2: Teaching of Psychology
 APA Division 6: Behavioral Neuroscience and Comparative Psychology
 Association for Psychological Science
 Society for the Teaching of Psychology
 Western Psychological Association
 Comparative Cognition Society
 Skeptics Society

Awards

NIH Academic Research Enhancement Award, 2006
 Louis B. Perry Research Award, 2004.
 Louis B. Perry Research Award, 2002.
 NIH National Research Service Award, 1999
 University of Utah Department of Psychology, Cognition and Neural Science Professional Development Award, 1999
 University of Utah Department of Psychology, Commendation for Excellence in Teaching, 1999
 University of Utah Department of Psychology, Commendation for Excellence in Research, 1999

Grants and Financial Support

"Sequence Learning in Pigeons (*Columba livia*)."
 Academic Research Enhancement Award 1R15 MH077888-01. Received from the National Institutes of Health 2006 - 2009. Total Costs \$184,800.00

"Dissociation of Implicit and Explicit Memory Systems."
 National Research Service Award 1F31 MH12410-01A1. Received from the National Institutes of Health 1999 - 2001. Total Costs \$40,946.00

"Delayed feedback affects category learning in pigeons (*Columba livia*)".
 Louis B. Perry Summer Research Award. Whitman College, 2004 (With Liz Karas). Total costs \$7,000.00

"Defensive sleep strategies in Mallard ducks (*Anas Platyrhynchos*)".
 Louis B. Perry Summer Research Award. Whitman College, 2002 (With Debbie Polzin). Total costs \$7,000.00

Publications

- Herbranson, W.T. & Shimp, C.P. (2008). Artificial grammar learning in pigeons. *Learning & Behavior*, *36*, 116-137.
- Shimp, C.P., Froehlich, A.L. & Herbranson, W.T. (2007). Information processing by pigeons (*Columba livia*): Incentive as information. *Journal of Comparative Psychology*, *121*, 73-81.
- Shimp, C.P., Herbranson, W.T., Fremouw, T. & Froehlich, A.L. (2006). Rule-learning, memorization strategies, switching attention between local and global levels of perception, and optimality in avian visual categorization. In E.A. Wasserman and T.R. Zentall (Eds.) *Comparative Cognition: Experimental Explorations of Animal Intelligence*. Oxford, England: Oxford University Press.
- Froehlich, A.L., Herbranson, W.T., Loper, J.D., Wood, D.M. & Shimp, C.P. (2004). Anticipating by pigeons depends on local statistical information in a serial response time task. *Journal of Experimental Psychology: General*, *133*(1), 31-45.
- Herbranson, W.T. & Shimp, C.P. (2003). "Artificial grammar learning" in pigeons: A preliminary analysis. *Learning and Behavior*, *31*, 98-106.
- Fremouw, T., Herbranson, W.T., & Shimp, C.P. (2002). Dynamics shifts of pigeon local / global attention. *Animal Cognition*, *5*, 233-243.
- Herbranson, W.T., Fremouw, T. & Shimp, C.P. (2002). Categorizing a moving target in terms of its speed, direction, or both. *Journal of the Experimental Analysis of Behavior*, *78*, 249-270.
- Shimp, C.P., Herbranson, W.T., & Fremouw, T. (2001). Avian Visual Attention in Science and Culture. R.G. Cook (Ed.), *Avian Visual Cognition*. Medford MA: Comparative Cognition Press.
- Malloy, T.E., Jensen, G.C., Song, T., Herbranson, W.T., Fremouw, T. & Shimp, C.P. (2001). Interactive demonstration of categorizing moving targets on the basis of speed and direction [computer software]. Salt Lake City, UT: University of Utah. Available: www.psych.utah.edu/shimp/Avian_categorization.htm
- Herbranson, W.T., Fremouw, T., & Shimp, C.P. (1999). The randomization procedure and categorization of multi-dimensional stimuli by pigeons. *Journal of Experimental Psychology: Animal Behavior Processes*, *25*, 113-135.
- Fremouw, T., Herbranson, W.T., & Shimp, C.P. (1998). Priming of attention to local or global levels of visual analysis. *Journal of Experimental Psychology: Animal Behavior Processes*, *24*, 278-290.
- Shimp, C.P. & Herbranson, W.T. (1998). Local temporal organization of behavior: Historical and conceptual perspectives. In Ardila, R., Lopez, W.L., Perez, A.M., Quinones, R. & Reyes, F. (Eds). *Manual de analisis experimental del comportamiento* [Manual for the experimental analysis of behavior]. Madrid: Biblioteca Nueva.
- Herbranson, W.T. (2000). Cognitive Dissociation of Memory Systems: Implicit and Explicit Memory in Pigeons (*Columba Livia*). Unpublished Dissertation.
- Herbranson, W.T. (1997). Ill-Defined Visual Concepts in the Pigeon (*Columba Livia*). Unpublished Thesis.

Presentations:

- Herbranson, W.T. "Color-based negative priming in pigeons (*Columba livia*)", Presented at the Western Psychological Association, Irvine, 2008
- Herbranson, W.T. "Color-based negative priming in pigeons (*Columba livia*)", Presented at the Comparative Cognition Society, Melbourne Beach, 2008.
- Herbranson, W.T. "Optimal performance by pigeons in the 'Monty Hall Dilemma'". Presented at the Western Psychological Association, Vancouver, 2007
- Herbranson, W.T. "Animal Learning" (Session chair). Western Psychological Association, Vancouver, 2007
- Herbranson, W.T. "Pigeons perform optimally in a version of the 'Monty Hall Dilemma'". Presented at the Comparative Cognition Society, Melbourne Beach, 2007.
- Herbranson, W.T. Pigeons (*Columba livia*) learn visual categories based on angle of movement, but not angle of orientation. Presented at the Comparative Cognition Society, Melbourne Beach, 2006.
- Herbranson, W.T. Serial response time learning in pigeons (*Columba livia*). Presented at the Western Psychological Association, Portland, 2005.
- Herbranson, W.T. Pigeons (*Columba livia*) learn visual categories based on angle of movement, but not angle of orientation. Presented at the Comparative Cognition Society, Melbourne Beach, 2005.
- Herbranson, W.T. Comparing chunk-strength and rule-based accounts of synthetic grammar learning. Presented at the Western Psychological Association, Phoenix, 2004.
- Herbranson, W.T. "Synthetic grammar learning" by pigeons (*Columba livia*). Presented at the Western Psychological Association, Vancouver, 2003.
- Herbranson, W.T. Dissociation of implicit and explicit memory systems in pigeons (*Columba livia*). Presented at the Western Psychological Association, Irvine, 2002.
- Shimp, C.P., Fremouw, T., & Herbranson, W.T. Priming of attention to local or global levels of attention. Presented at Psychonomic Society, Philadelphia, 1997.
- Shimp, C.P., Herbranson, W.T., & Fremouw, T. Optimal decision rules: A model for how pigeons categorize naturalistic visual stimuli. Presented at the International Conference on Comparative Cognition, Indialantic Beach, 1997.
- Shimp, C.P., Herbranson, W.T., & Fremouw, T. Optimal decision rules: A model for how pigeons categorize naturalistic visual stimuli. Presented at the Society for the Quantitative Analysis of Behavior, Chicago, 1997.
- Shimp, C.P., Herbranson, W.T., & Fremouw, T. Optimal decision rules: A model for how pigeons categorize naturalistic visual stimuli. Presented at the American Psychological Association, Chicago, 1997.

Publications in preparation / under review

- Herbranson, W.T. & Schroeder, J. (under review). Pigeons perform optimally in a

- version of the Monty Hall Dilemma.
- Herbranson, W.T. & Karas, E. (In preparation). Angle as a perceptual dimension in pigeons' categorization of visual stimuli.
- Herbranson, W.T. & Shimp, C.P. (In preparation). Dissociable implicit and explicit knowledge of sequence structure by pigeons.
- Herbranson, W.T. (In preparation). A computational model of reference and working memory contributions to sequence learning in pigeons.
- Herbranson, W.T. (In preparation). Pigeons show negative priming and identity priming in a four-color matching to sample procedure

Teaching Experience

Whitman College (2000 – present)

Introduction to Psychology
 Statistical Methods
 Statistical Methods Lab
 Experimental Psychology
 Sensation and Perception
 Physiology of Behavior
 Physiological Psychology Lab
 Psychology of Learning
 Learning Lab
 Comparative and Evolutionary Psychology
 Contemporary and Historical Issues in Psychology

University of Utah (1994 – 2000)

Sole Instructor:

Physiological Psychology
 Research Methods in Psychology
 Brain and Behavior
 Cognitive Psychology

Teaching Fellow:

Introduction to Psychology
 Research Methods in Psychology
 Statistical Methods in Psychology
 Physiological Psychology
 Cognitive Psychology
 Thinking in Everyday Living
 Comparative Cognition

Carleton College

Mathematics Department Statistics Lab Assistant (1992 – 1993)
 Teaching Assistant, Introduction to Linguistics (1993)

Psychology Department Computer Lab Coordinator (1993 – 1994)
 Psychology Department Computer Lab Assistant (1993)

Editorial / Peer Review

Allyn and Bacon, Textbook reviewer:

Kalat, *Biological Psychology*, 7th edition, © 2000

Martin, *Doing Psychology Experiments*, 5th edition, © 2001

College Service

Pre-Medical advisory committee, 2001 - 2004; 2006 - present

Studies Involving Human Subjects Committee, 2001 – 2004; 2006 - 2007

Animal Care and Use Committee, 2001 – 2004; 2006 - present

Science Equipment Replacement Fund (SERF), 2001 - present

Aid for Scholarship and Instructional Development (ASID), 2003 - 2006

Search Committees:

Psychology (2001, 2002, 2003, 2004, 2005)

Chemistry (2001)

Technology Services (2002)

Whitman College Juggling Club, Faculty Advisor, 2003 - present

Cognitive Science Discussion Group, Founder and Organizer, 2003 - present

Faculty Personnel Committee, 2006 - 2007

Maxey Hall Renovation Planning Committee, 2006 – 2007

Committee on Non-Traditional Academic Appointments (Chair), 2007

Policy Committee, 2008 - present

Undergraduate Research Projects Advised

David Wood, 1999 "Categorization of stimuli having perceptually integral or separable dimensions" (Undergraduate Research Opportunities Program, University of Utah)

Alyson Froelich, 2000 "Local and global measures of attention and memory in an avian serial reaction time task" (Undergraduate Research Opportunities Program, University of Utah)

Jennifer Bayer, 2001 "The effects of Ginkgo Biloba and enriched environment on learning and memory in aged rats" (Presented at Western Psychological Association)

Lu Clark, 2001 "Use of behavioral self-control in triathlon training" (Presented at Whitman Undergraduate Conference)

Brendon Nafziger, 2001 "A demonstration of imitation in pigeons"

- Kim Evanger, 2002 "Social modeling influences on pain tolerance levels and pain intensity ratings"
- Sara Amadon, 2002 "Psychology and its related disciplines: Historical and cross-disciplinary influences" (Presented at Western Psychological Association)
- Cy Eaton, 2002 "The effects of colored lighting on digit-symbol matching performance"
- Kris Rees, 2002 "The effects of dominance on social foraging in semi-tamed mallards" (Presented at Whitman Undergraduate Conference)
- Desi Sharpe, 2002 "Procedural memory in pigeons" (Presented at Whitman Undergraduate Conference)
- Debbie Polzin, 2002 "Unihemispheric slow-wave sleep asymmetry in mallard ducks" (Perry Research Award)
- Glen Tyndall, 2003 "Classical conditioning of visual perception" (Presented at Whitman Undergraduate Conference)
- Glen Tyndall, 2004 "Massed but not spaced training is associated with poor long-term retention: Fos imaging suggests a disturbance in hippocampal processing" (Presented at Western Psychological Association)
- Casey Nelson, 2004 "An investigation of pre-competition state anxiety and performance in male collegiate swimmers".
- Becca Patton, 2004 "The effects of sleep deprivation in cognitive functioning" (Presented at Western Psychological Association)
- Molly Mayes, 2004 "Apes in crisis: Gorilla gorilla gorilla nesting behavior and the commercial bushmeat trade in Cameroon, Central Africa" (Presented at Western Psychological Association)
- Jessica Lawson, 2004 "The effects of massage on closeness between people" (Presented at Western Psychological Association)
- Liz Karas, 2004 "Delayed feedback affects category learning in pigeons (*Columba livia*)" (Perry Research Award)
- Morgan Agnew, 2005 "Acquisition and generalization of probability: How (not) to learn math" (Presented at Whitman Undergraduate Conference)
- Cheol-Won Randle, 2005 "Two procedures for conditioning positive emotional responses in rats"
- Mihak Hagel, 2005 "The effect of mood on image recognition"
- Glendon Hardin, 2005 "Categorization of Shepard circles by pigeons (*Columba livia*): Separability of size from orientation"
- Liz Karas, 2005 "Categorization of multidimensional visual stimuli by humans (*Homo sapiens*) and pigeons (*Columba livia*).". (Presented at Western Psychological Association)
- David Droppo, 2005 "Cooperation decisions: Walla Walla wineries and restaurants in a real-world prisoner's dilemma"
- Charlotte Haws, 2005 "The effects of estradiol and stress-induced hormones on memory in college-aged women"
- Jenny Schwartz, 2005 "Sleep restoration improves tennis serving accuracy" (Presented at Western Psychological Association)
- Avi Hecht, 2005 "Scientific reduction and the hard problem of consciousness"

- Michael Brown, 2007 "College students' levels of implicit and explicit prejudice towards Middle-Easterners"
- Garrett Chan, 2007 "Metacognition and decision under risk" (Presented at Whitman Undergraduate Conference)
- Molly Cherkin, 2007 "The effectiveness of Girls Circle on improving characteristics commonly associated with recidivism" (Presented at Whitman Undergraduate Conference)
- Catharine Curles, 2007 "Rats as an animal model for the effects of injury threat and social support on human learning" (Presented at Whitman Undergraduate Conference)
- Chris Dorough, 2007 "Sensation-seeking as a potential link between gambling and athletic injury"
- Levi Star, 2007 "Motivations for play and addiction in massive multiplayer online role-playing games"

Other Campus Presentations

- "Preparing effectively for final exams". Fall 2001, Jewett Residence Hall.
- "Dating and marriage in the new millennium". January 2001. Interim course co-taught with Michelle Janning, assistant professor of Sociology.
- "Psychology of memory: A users guide for students". Fall 2002. Lyman Residence Hall.
- "Integrating lab and coursework". Fall 2002, Faculty Talks About Teaching Series.
- "*At First Sight*, a case study of recovered vision in adulthood". Spring 2002, Psychology Club Film Series.
- "*Memento* as a cinematic representation of anterograde amnesia". Fall 2002, Psychology Club Film Series.
- "*Raising Arizona* and American cultural assumptions relating to nativist and empiricist philosophies of mind". Spring 2002, Psychology Club Film Series.
- "Training sensorimotor neural networks for simultaneous multi-object manipulation (Learn to juggle)". January 2003. Interim course.
- "Who are you calling 'bird brain'? Markov chains, Neuropsychology and the Pigeon Mind". Fall 2003, Faculty Forum Lecture Series.
- "Training sensorimotor neural networks for simultaneous multi-object manipulation (Learn to juggle)". January 2004. Interim course.
- "The cognitive and biological effects of sleep and sleep deprivation during finals week". Spring 2005, Jewett Residence Hall.
- "Blue eyes, brown eyes" (With Melissa Clearfield & Matthew Prull). Fall 2006, Whitman College Symposium on Race.
- "Are birds smarter than mathematicians? Pigeons, humans, and the 'Monty Hall dilemma'". Fall 2006, Faculty Forum Lecture Series.
- "A bird's-eye view of cognitive science". Spring 2008.