

Walter T. "Wally" Herbranson

Herbert and Pearl Ladley Endowed Chair of Cognitive Science
Professor of Psychology

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
	2014-present	Professor of Psychology
	2006-2014	Associate Professor of Psychology
	2000-2006	Assistant Professor of Psychology

Academic Interests

Avian Cognition (probability learning, 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
Society for the Experimental Analysis of Behavior
American Association of University Professors
Skeptics Society

Education

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

Psychology (Cognitive and Neural Science program)

Advisor: Charles Shimp

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

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

Carleton College 1990-1994 B.A., 1994

Psychology, with concentration (minor) in Cognitive Studies.

Academic Advisor: Lloyd Komatsu

Thesis Advisor: Julie Neiworth

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

Awards

G. Thomas Edwards Award for Excellence in Teaching and Scholarship, Whitman College, 2015.

Frank A. Beach Comparative Psychology Award, 2011 (APA Division 6 award for the best new research paper)

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 - 2010. Total Costs \$184,800

"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

"Creating an interdisciplinary seminar: What is music?".
Innovation in Teaching and Learning grant, Whitman College 2012 (With Pete Crawford, Keith Farrington, Kurt Hoffman, and Matthew Prull). Total Costs \$6,000

"Mechanisms of Sequence Learning in Pigeons".
Louis B. Perry Summer Research Award. Whitman College, 20016 (With Hunter Pluckebaum). Total costs \$6,175

- "Further Investigation of Change Detection and Change Blindness in Pigeons. Louis B. Perry Summer Research Award. Whitman College, 20014 (With Eva Davis). Total costs \$5,500
- "The *Monty Hall Dilemma* as a Model of Optimal Choice in Pigeons (*Columba livia*) and Humans (*Homo sapiens*). Louis B. Perry Summer Research Award. Whitman College, 20011 (With Shanglun Wang). Total costs \$6,500
- "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
- "Defensive sleep strategies in Mallard ducks (*Anas Platyrhynchos*)". Louis B. Perry Summer Research Award. Whitman College, 2002 (With Debbie Polzin). Total costs \$7,000

Publications (* denotes Whitman student coauthor)

- Herbranson, W.T. (In press). Divided attention. In J. Vonk & T.K. Shackelford (Eds.), *Encyclopedia of animal cognition and behavior*. (pp. xxx-xxx). New York: Springer.
- Herbranson, W.T., *Karas, E., & *Hardin, G. (2017). Perception of angle in visual categorization by pigeons (*Columba livia*). *Animal Behavior and Cognition*, *4*(3), 286-300.
- Herbranson, W.T. & *Jeffers, J.S. (2017). Pigeons (*Columba livia*) show change blindness in a color change detection task. *Animal Cognition*, *20*(4), 725-737.
- Herbranson, W.T. (2017). Selective and divided attention in comparative psychology. In J. Call (Ed.), *APA handbook of comparative psychology Volume 2: Perception learning and cognition*. (pp. 183-201). Washington DC: American Psychological Association Press.
- Herbranson, W.T. (2016). Dissociation of procedural and working memory in pigeons (*Columba livia*). *International Journal of Psychological Research*, *9*, 40-51.
- Herbranson, W.T. & *Davis, E.T. (2016). The effect of display timing on change blindness in pigeons (*Columba livia*). *Journal of the Experimental Analysis of Behavior*, *105*(1), 85-99.
- Herbranson, W.T. (2015). Change blindness in pigeons (*Columba livia*): The effects of change salience and timing. *Frontiers in Psychology*, *6*:1109. doi:10.3389/fpsyg.2015.01109
- Herbranson, W.T., *Xi, P.M., & *Trinh, Y.T. (2014). Spatial variability in serial response learning and performance by pigeons (*Columba livia*). *International Journal of Comparative Psychology*, *27*(2), 280-294.
- Herbranson, W.T. & *Wang, S. (2014). Testing the limits of optimality: The effect of base rates on the Monty Hall Dilemma. *Learning and Behavior*, *42*(1), 69-82.
- Herbranson, W.T., *Trinh, Y.T., *Xi, P.M., *Arand, M.P., *Barker, M.S.K., & *Pratt, T.H. (2014). Change detection and change blindness in pigeons (*Columba livia*). *Journal of Comparative Psychology*, *128*(2), 181-187.

- Herbranson, W.T. (2012). Pigeons, humans, and the Monty Hall dilemma. *Current Directions in Psychological Science*, 21(5), 297-301.
- Shimp, C.P., Herbranson, W.T. & Fremouw, T. (2012). From momentary maximizing to serial response times and artificial grammar learning. In T.R. Zentall & E.A. Wasserman (Eds.), *Oxford handbook of comparative cognition*. (pp. 674-690). New York: Oxford University Press.
- Herbranson, W.T. & *Stanton, G.L. (2011). Flexible serial response learning in pigeons (*Columba livia*) and humans (*Homo sapiens*). *Journal of Comparative Psychology*. 125(3), 328-340.
- Herbranson, W.T. & *Schroeder, J. (2010). Are birds smarter than mathematicians? Pigeons perform optimally in a version of the Monty Hall Dilemma. *Journal of Comparative Psychology*. 124(1), 1-13.
- 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 R. Ardila, W.L. Lopez, A.M. Perez, R. Quinones, & F. Reyes (Eds.), *Manual de analisis experimental del comportamiento* [Manual for the Experimental Analysis of Behavior]. Madrid: Biblioteca Nueva.

Publications in preparation or under review

Herbranson, W.T. & Pluckebaum, H.J. (Under review). Preparing to make a deal: Reinforcement history and the Monty Hall dilemma in pigeons (*Columba livia*).

Herbranson, W.T. (In preparation). Artificial grammar learning by pigeons in a serial response time task.

Herbranson, W.T. & Turner, H. (In preparation). Search strategies in change detection by pigeons.

Herbranson, W.T. (In preparation). Pigeons show repetition priming and negative priming in matching to sample and non-matching to sample tasks.

Presentations:

Herbranson, W.T. "Procedural and associative learning in pigeons' serial response learning". Presented at the Western Psychological Association, Sacramento, 2017.

Herbranson, W.T. "Procedural and associative learning in pigeons' serial response learning". Presented at the Comparative Cognition Society, Melbourne Beach, 2017.

Herbranson, W.T. "Engaging undergraduates in research". Presented at the Comparative Cognition Society, Melbourne Beach, 2017.

Herbranson, W.T. "Search strategies in change detection by pigeons". Presented at the Western Psychological Association, Long Beach, 2016.

Herbranson, W.T. "Physiological Psychology and Animal Behavior" (Session chair). Western Psychological Association, Long Beach, 2016.

Herbranson, W.T. "Search strategies in change detection by pigeons", Presented at the Comparative Cognition Society, Melbourne Beach, 2016.

Herbranson, W.T. "Change blindness in pigeons: The effects of change salience and timing". Presented at the Western Psychological Association, Las Vegas, 2015.

Herbranson, W.T. "Cognition and Perception" (Session chair). Western Psychological Association, Las Vegas, 2015.

Herbranson, W.T. "Change blindness in pigeons: The effects of change salience and timing", Presented at the Comparative Cognition Society, Melbourne Beach, 2015.

Herbranson, W.T. "Learning variable sequences of responses based on an artificial

- grammar". Presented at the Western Psychological Association, Portland, 2014.
- Herbranson, W.T. "Learning and brain processes" (Session chair). Western Psychological Association, Portland, 2014.
- Herbranson, W.T. "Learning variable sequences of responses based on an artificial grammar", Presented at the Comparative Cognition Society, Melbourne Beach, 2014.
- Herbranson, W.T. "Change detection and change blindness in pigeons and humans". Presented at the Western Psychological Association, Reno, 2013.
- Herbranson, W.T. "Memory and Perception" (Session chair). Western Psychological Association, Reno, 2013.
- Herbranson, W.T. "Change detection and change blindness in pigeons and humans", Presented at the Comparative Cognition Society, Melbourne Beach, 2013.
- Herbranson, W.T. "Testing the limits of optimality: The effect of base-rates on pigeons' performance in the Monty Hall dilemma". Presented at the Association for Behavior Analysis International, Seattle, 2012.
- Herbranson, W.T. "Pigeons, optimal choice, and the Monty Hall dilemma". Presented at the Western Psychological Association, San Francisco, 2012.
- Herbranson, W.T. "Learning and Memory" (Session chair). Western Psychological Association, San Francisco, 2012.
- Herbranson, W.T. "Testing the limits of optimality: The effect of base-rates on pigeons' performance in the Monty Hall dilemma", Presented at the Comparative Cognition Society, Melbourne Beach, 2012.
- Herbranson, W.T. "Angle as a perceptual dimension in visual categorization by pigeons", Presented at the Western Psychological Association, Los Angeles, 2011.
- Herbranson, W.T. "Learning" (Session chair). Western Psychological Association, Los Angeles, 2011.
- Herbranson, W.T. "The effect of cue validity on serial response learning in pigeons (*Columba livia*)", Presented at the Western Psychological Association, Cancun, 2010.
- Herbranson, W.T. "Perception and Learning" (Session chair). Western Psychological Association, Cancun, 2010.
- Herbranson, W.T. "The effect of cue validity on serial response learning in pigeons (*Columba livia*)", Presented at the Comparative Cognition Society, Melbourne Beach, 2009.
- 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.

Other Presentations

- "Who are you calling *bird brain*? Avian cognition in the lab". May 2016. Blue Mountain Audubon Society.
- "The privilege we did not ask for". Spring 2014. Discussion panel at Whitman College's Power and Privilege Symposium.
- "Birds on gorilla patrol: Change detection and change blindness in pigeons (*Columba livia*)". Fall 2013, Faculty Forum.
- "Do you hear what I hear?" (With Peter Crawford, Keith Farrington, Kurt Hoffman, and Matthew Prull). Parents Weekend, Fall 2011.
- "Animals and culture" Action for Animals Discussion Panel, Fall 2011
- "What is music?" Faculty Forum (With Peter Crawford, Keith Farrington, Kurt Hoffman, and Matthew Prull). Fall 2011
- "The paradox of the left-handed batter: Statistics, historical anecdotes, and a little bit of

- neuroscience." Fall 2009 Invited TKE Scholarship Talk.
- "A bird's-eye view of cognitive science". Spring 2008, Public Lecture.
- "Are birds smarter than mathematicians? Pigeons, humans, and the 'Monty Hall dilemma'". Fall 2006, Faculty Forum.
- "Blue eyes, brown eyes" (With Melissa Clearfield & Matthew Prull). Fall 2006, Whitman College Symposium on Race.
- "The cognitive and biological effects of sleep and sleep deprivation during finals week". Spring 2005, Jewett Residence Hall.
- "Training sensorimotor neural networks for simultaneous multi-object manipulation (Learn to juggle)". January 2004. Interim course.
- "Who are you calling 'bird brain'? Markov chains, Neuropsychology and the Pigeon Mind". Fall 2003, Faculty Forum.
- "Training sensorimotor neural networks for simultaneous multi-object manipulation (Learn to juggle)". January 2003. Interim course.
- "*Raising Arizona* and American cultural assumptions relating to nativist and empiricist philosophies of mind". Spring 2002, Psychology Club Film Series.
- "*Memento* as a cinematic representation of anterograde amnesia". Fall 2002, Psychology Club Film Series.
- "*At First Sight*, a case study of recovered vision in adulthood". Spring 2002, Psychology Club Film Series.
- "Integrating lab and coursework". Fall 2002, Faculty Talks About Teaching Series.
- "Psychology of memory: A users guide for students". Fall 2002. Lyman Residence Hall.
- "Dating and marriage in the new millennium" (with Michelle Janning). January 2001. Interim course.
- "Preparing effectively for final exams". Fall 2001, Jewett Residence Hall.

Teaching Experience

Whitman College (2000-present)

- Introduction to Psychology (Psyc 110)
- Psychological Statistics (Psyc 210)
- Statistics Lab (Psyc 210L)
- Research Methods (Psyc 220)
- Comparative and Evolutionary Psychology (Psyc 339)
- Sensation and Perception (Psyc 348)
- Physiology of Behavior (Psyc 360)
- Physiological Psychology Lab (Psyc 360L)
- Psychology of Learning (Psyc 390)
- Learning Lab (Psyc 390L)
- Multivariate Statistics for Psychology (Psyc 410)
- Contemporary and Historical Issues in Psychology (Psyc 420)
- Thesis (Psyc 495/6/8)
- What is Music? (interdisciplinary Seminar; IDSC 300)

University of Utah (1994-2000)

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

Editorial / Peer Review

Journal of Comparative Psychology, manuscript reviewer
Learning and Behavior, manuscript reviewer
Animal Cognition, manuscript reviewer
Animal Behavior and Cognition, manuscript reviewer
Behavioural Processes, manuscript reviewer
Journal of the Experimental Analysis of Behavior, manuscript reviewer
International Journal of Comparative Psychology, manuscript reviewer
Comparative Cognition and Behavior Reviews, manuscript reviewer
Learning and Motivation, manuscript reviewer
Psychonomic Bulletin and Review, manuscript reviewer
Cognition, manuscript reviewer.
British Journal of Educational Psychology, manuscript reviewer
Psychologica Belgica, manuscript reviewer
Journal of Undergraduate Neuroscience Education, manuscript reviewer
Journal of Applied Mathematics and Physics, manuscript reviewer
 Allyn and Bacon, Textbook reviewer: Kalat, *Biological Psychology*, 7th ed.; Martin, *Doing Psychology Experiments*, 5th ed.

College Service

Elected Committees:

Academic Information Technology Advisory Group (AITAG), 2011-2014
 Policy Committee, 2008-2011 (Chair, 2011)
 Faculty Personnel Committee, 2006-2007
 Aid for Scholarship and Instructional Development (ASID), 2003-2006, 2016-present

Non-elected Committees:

Animal Care and Use Committee, 2001-2004; 2006-present
 Health Professions Advisory Committee, 2001-2004; 2006-present
 Science Equipment Replacement Fund (SERF), 2001-present
 Watson Fellowship Committee, 2010-present
 Information Technology Security Task Force, 2011-2014
 Faculty Athletic Representative 2013-2014
 Computer Science Steering Committee, 2014-2017
 Psychology Department Chair, 2008-2011; 2013-2014
 Maxey Hall Renovation Planning Committee, 2006-2008
 Committee on Non-Traditional Academic Appointments (Chair), 2007
 Institutional Review Board (IRB), 2001-2004; 2006-2007

Search Committees:

Psychology (Repeatedly; Chair 2008, 2009, 2010)
 Chemistry (2001)
 Technology Services (2002, 2008, 2012)
 Chief Information Officer (2011)
 Systems-Metadata Librarian (2011, 2012)
 Biology (2012, 2016)
 Associate Dean of Health and Wellness / Director of Counseling (2012)
 Women's Soccer Coach (2014)
 Computer Science / Mathematics (2014)
 Biology / BBMB (2014)

Miscellaneous Service:

Coordinated annual travel for majors to the Western Psychological Association conference, 2002 – 2017
 Whitman College Juggling Club, Faculty Advisor, 2003-2011
 Cognitive Science Discussion Group, Organizer, 2003-2010