

Donald S. Blough -- Curriculum Vitae

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Name and Position

Donald S. Blough
Edgar J. Marston Professor Emeritus and Research Professor
Dept. of Cognitive, Linguistic & Psychological Sciences

Education

A.B. Swarthmore College 1951 - Psychology
M.A. Harvard University 1954 - Psychology
Ph.D. Harvard University 1955 - Psychology

Professional Appointments

1954-58 Scientist, Laboratory of Psychology, National Institute of Mental Health
1958- Assistant Prof. to Professor, Brown University
1966 Visiting Professor, University of Washington
1973 Visiting Professor, University of Utah
1973-1977; 1989-90 Chair, Dept. of Psychology, Brown Univ.
1980-1999 Edgar J. Marston Professor
1999 - Marston Professor Emeritus and Research Professor

Publications

- Blough, D. S. Dark adaptation in the pigeon. Doctoral dissertation, Harvard University, 1954.
- Ratliff, F., & Blough, D. S. Behavior studies of visual processes in the pigeon. USN, ONR, Technical Report, 1954
- Blough, D. S. (1955) Method for tracing dark adaptation in the pigeon. Science, 121, 703-704.
- Verplanck, W. C., & Blough, D. S. (1955) An apparatus for the presentation of visual stimuli at low intensities. Journal of General Psychology, 53, 67-77.
- Blough, D. S. (1956) Dark adaptation in the pigeon. Journal of Comparative and Physiological Psychology, 49, 425-430.
- Blough, D. S. (1956) Technique for studying effects of drugs on discrimination in the pigeon. Annals of the New York Academy of Science, 65, Art. 4, 334-344.
- Blough, D. S. (1957) Some effects of drugs on visual discrimination in the pigeon. Annals of the New York Academy of Science, 66, 733-739.
- Blough, D. S. (1957) Spectral sensitivity in the pigeon. Journal of the Optical Society of America, 47, 827-833.
- Blough, D. S. (1957) Effect of lysergic acid diethylamide on absolute visual threshold of the pigeon. Science, 126, 304-305.
- Blough, D. S. (1957) Effects of drugs on visually controlled behavior in pigeons. In S. Gattattini and V. Ghetti (Eds.), Psychotropic Drugs. Amsterdam: Elsevier; New York: Van Nostrand
- Verplanck, W. S., & Blough, D. S. (1958) Randomized stimuli and the non-independence of successive responses at the visual threshold. Journal of General Psychology, 59, 263-272.
- Blough, D. S. (1958) A method for obtaining psychophysical thresholds from the pigeon. Journal of the Experimental Analysis of Behavior, 1, 31-43.
- Blough, D. S. (1958) New test for tranquilizers. Science, 127, 586-587.

- Blough, D. S. (1958) A rise in the pigeon's threshold with a red test stimulus during dark adaptation. Journal of the Optical Society of America, 48, 274.
- Blough, D. S. (1959) Delayed matching in the pigeon. Journal of the Experimental Analysis of Behavior, 2, 151-160.
- Blough, D. S. (1959) Generalization and preference on a stimulus intensity continuum. Journal of the Experimental Analysis of Behavior, 2, 307-317.
- Blough, D. S. (1961) The shape of some wavelength generalization gradients, Journal of the Experimental Analysis of Behavior, 4, 31-40.
- Blough, D. S. (1961) Animal psychophysics. Scientific American, 205, 113-122.
- Blough, D. S. (1961) Review of M. Sidman "Tactics of Scientific Research" Contemporary Psychology, 6 279-280
- Blough, D. S., & Schrier, A. M. (1963) Scotopic spectral sensitivity in the monkey. Science, 139, 493--494.
- Blough, D. S. (1963) Interresponse time as a function of continuous variables: A new method and some data. Journal of the Experimental Analysis of Behavior, 6, 237-246.
- Schrier, A. M., & Blough, D. S. (1963) Psychophysical studies of vision in monkeys. In Proceedings of the Conference on Research with Primates Beaverton, Oregon: Tektronix.
- Blough, D. S., & Blough, P. M. (1964) Experiments in Psychology: Laboratory Studies of Animal Behavior. New York: Holt, Rinehart & Winston.
- Blough, D. S. (1965) Definition and measurement in generalization research. In D. Mostofsky (Ed.) Stimulus Generalization, Palo Alto: Stanford University Press.
- Blough, D. S., & Millward, R. M. (1965) Learning: Operant conditioning and verbal learning. In Annual Review of Psychology, Vol. 16, Palo Alto: Annual Reviews.
- Blough, D. S. (1966) The reinforcement of least-frequent interresponse times. Journal of the Experimental Analysis of Behavior, 9, 581-591.
- Schrier, A. M., & Blough, D. S. (1966) Photopic spectral sensitivity of macaque monkeys. Journal of Comparative and Physiological Psychology, 62, 457-458.
- Blough, D. S. (1966) The study of animal sensory processes by operant methods. In Honig (Ed.), Operant Behavior: Areas of Research and Application, New York: Appleton-Century-Crofts.
- Blough, D. S. (1967) Stimulus generalization as a signal detection in pigeons. Science, 158, 940-941.
- Blough, P.M., & Blough, D. S. (1968) The distribution of interresponse times in the pigeon during variable-interval reinforcement. Journal of the Experimental Analysis of Behavior, 11, 23-27.
- Blough, D. S. (1969) Attention shifts in a maintained discrimination. Science, 166, 125-126.
- Blough, D. S. (1969) Generalization gradient shape and summation in steady-state tests. Journal of the Experimental Analysis of Behavior, 12, 91-104.
- Blough, D. S., & Lipsitt, P. (1971) The discriminative control of behavior. In J. W. Kling and L. A. Riggs (Eds.), Experimental Psychology. New York: Holt, Rinehart and Winston, Pp. 743-792.

- Blough, D. S. (1972) Recognition by the pigeon of stimuli varying in two dimensions. Journal of the Experimental Analysis of Behavior, 18, 345-367
- Blough, D. S. (1972) New light on a Pavlovian idea: Review of R. A. Boakes & M. S. Halliday (Eds.) "Inhibition and Learning". Science, 178, 295-296.
- Blough, D. S., & Yager, D. (1972) Visual psychophysics in animals. In Jameson and Hurvich (Eds.), Visual Psychophysics, Vol. VII/4, Berlin: Springer-Verlag. Blough, D. S., & Blough, P. M. (1977) Animal Psychophysics. In Honig (Ed.), Operant Behavior, New York: Appleton-Century-Crofts.
- Blough, D. S. (1973) Two-way generalization peak shift after two-key training in the pigeon. Animal Learning and Behavior, 1, 171-174.
- Zuckerman, D. C., & Blough, D. S. (1974) Conditional discrimination in the goldfish. Animal Learning and Behavior, 2, 215-217.
- Blough, D. S. (1975) Steady-state data and a quantitative model of operant generalization and discrimination. Journal of Experimental Psychology: Animal Behavior Processes, 104, 3-21.
- Essock, S. M., & Blough, D. S. (1977) Effects of stimulus spacing on steady state gradients of inhibitory stimulus control. Animal Learning and Behavior, 5, 174-176.
- Blough, D. S. (1977) Visual search in the pigeon: Hunt and peck method. Science, 196, 1013-1014.
- Blough, D. S. (1977) Photoelectric recording of pigeon-peck responses to computer driven visual displays. Behavior Research Methods & Instrumentation, 9, 259-262.
- Blough, D. S. & Blough, P. M. (1977) Animal psychophysics. In Honig & Staddon (Eds.), Handbook of Operant Behavior. (pp. 514-539) Englewood Cliffs, NJ: Prentice-Hall.
- Blough, D. S. (1978) Reaction times of pigeons on a wavelength discrimination task. Journal of the Experimental Analysis of Behavior, 30, 133-137
- Blough, P. M., & Blough, D. S. (1978) The reaction-time/luminance relationship for pigeons to lights of different spectral compositions. Perception & Psychophysics, 23, 468-474.
- Blough, D. S. (1979) Effects of the number and form of stimuli on visual search in the pigeon. Journal of Experimental Psychology: Animal Behavior Processes, 5, 211-223.
- Uhlrich, D. J., Blough, P. M., & Blough, D. S. (1982) The pigeon's distant visual acuity as a function of viewing angle. Vision Research, 23, 429-431.
- Blough, D. S. (1982) Pigeon perception of letters of the alphabet. Science, 218, 397-398.
- Todrin, D. C., & Blough, D. S. (1983) The discrimination of mirror-image forms by pigeons. Perception & Psychophysics, 34, 397-402.
- Blough, D. S. (1983) Alternative accounts of stimulus control. In Commons, Herrnstein, and Wagner (Eds.), Quantitative Analysis of Behavior, Vol. 4: Acquisition II. New York: Ballinger.
- Blough, D. S. (1984) Form recognition in pigeons. In Roitblat, Bever, & Terrace (Eds.), Animal Cognition, New York: Columbia University Press.
- Blough, D. S. (1985) Discrimination of letters and random dot patterns by pigeons and humans. Journal of Experimental Psychology: Animal Behavior Processes, 11, 261-280

- Blough, P.M. & Blough, D. S. (1985) Sequential effects in dimensional contrast. Journal of the Experimental Analysis of Behavior, 44, 233-244
- Blough, D. S. & Franklin, J. (1985) Pigeon discrimination of letters and other forms in texture displays. Perception & Psychophysics, 38, 523-532
- Blough, D. S. (1985) Behavioral psychophysics. In Encyclopedia of Science and Technology (Sixth Edition). New York: McGraw Hill .
- Blough, D. S. (1986) Odd-item search by pigeons: Method, instrumentation, and uses. Behavior Research Methods, Instruments, & Computers, 18, 413-419
- Blough, D. S. (1987) Counterpoint. J. of the Experimental Analysis of Behavior, 48, 468-469.
- Blough, D. S. (1988) Quantitative relations between visual search speed and target-distractor similarity. Perception & Psychophysics, 43, 57-71.
- Blough, P. M. & Blough, D. S. (1989) Visual effects of opiates in pigeons: I. Target location in visual search. Psychopharmacology, 97, 80-84.
- Blough, P. M. & Blough, D. S. (1989) Visual effects of opiates in pigeons: II. Contrast sensitivity to sinewave gratings. Psychopharmacology, 97, 85-88.
- Blough, D. S. (1989) Odd-item search in pigeons: display size and transfer effects. J. Experimental Psychology: Animal Behavior Processes, 15, 14-22.
- Blough, D. S. (1989) Contrast as seen in visual search reaction times. Journal of the Experimental Analysis of Behavior, 52, 199-211.
- Allan, S. E. & Blough, D. S. (1989) Feature-based search asymmetries in pigeons and humans. Perception and Psychophysics, 46, 456-464.
- Blough, D. S. (1989) Form similarity and categorization in pigeon visual search. In Commons, M. L., Kosslyn, S. M. & Herrnstein, R. J. Quantitative Analyses of Behavior, VIII: Pattern Recognition and Concepts in Animals, People, and Machines, 129-143. Hillsdale, NJ: Erlbaum.
- Blough, D. S. & Blough, P. M. (1990) Reaction time assessments of visual perception in pigeons. In M. Berkley & W. Stebbins (Eds), Comparative Perception, pp. 245-276. New York: Wiley.
- Blough, D. S. (1991) Perceptual analysis in pigeon visual search. In G. Lockhead & J. Pomerantz (Eds), The Perception of Structure. (pp 213-226) Washington, DC: American Psychological Assn.
- Fujita, K., Blough, D. S. & Blough, P. M. (1991) Pigeons see the Ponzo illusion. Animal Learning & Behavior, 19, 283-293
- Blough, D. S. (1992) Effects of stimulus frequency and reinforcement variables on reaction time. Journal of the Experimental Analysis of Behavior, 57, 47-50
- Blough, D. S. (1992) Features of forms in pigeon perception. In W. Honig & G. Fetterman (Eds.), (pp. 263-277) Cognitive Aspects of Stimulus Control. Hillsdale, NJ: Erlbaum.
- Fujita, K., Blough, D.S. & Blough, P.M. (1993). Effects of the inclination of context lines on perception of the Ponzo illusion by pigeons. Animal Learning & Behavior, 21, 29-34
- Blough, D. S. (1993 a). Reaction time drifts identify objects of attention in pigeon visual search. Journal of Experimental Psychology: Animal Behavior Processes, 19, 107-120.

- Blough, D. S. (1993 b) Effects on search speed of the probability of target-distractor combinations. Journal of Experimental Psychology: Animal Behavior Processes, 19, 231-243.
- Blough, D. S. (1996) Error factors in pigeon discrimination and delayed matching. Journal of Experimental Psychology: Animal Behavior Processes, 22, 118-131
- Blough, D. S. & Blough, P. M. (1997) Form perception and attention in pigeons. Animal Learning & Behavior, 25, 1-20.
- Blough, D. S. (1998) Context reinforcement degrades discriminative control: A memory approach. Journal of Experimental Psychology: Animal Behavior Processes, 24, 185-199.
- Lacourse, D. M. & Blough, D. S. (1998) Effects of discriminability, probability of reinforcement, and handling cost on visual search and prey choice. Animal Learning & Behavior, 26, 290-298.
- Blough, D. S. (2000) Effects of priming, discriminability and reinforcement on reaction-time components in pigeon visual search. Journal of Experimental Psychology: Animal Behavior Processes, 26, 50-63.
- Blough, D. S. (2001) The perception of similarity. In R. B. Cook (Ed) Avian Visual Cognition cyber-book at <http://www.pigeon.psy.tufts.edu/avc/toc.htm>.
- Blough, D. S. (2001) Some contributions of signal detection theory to the analysis of stimulus control in animals. Behavioural Processes, 54, 127-136.
- Blough, D. S. (2002) Measuring the search image: Expectation, detection and recognition in pigeon visual search. Journal of Experimental Psychology: Animal Behavior Processes, 28, 397-405
- Blough, D. S. (2004) Reaction time signatures of discriminative processes: Differential effects of stimulus similarity and incentive. Learning & Behavior, 32, 157-172
- Blough, D. S. (2006) Reaction-time explorations of visual perception, attention and decision in pigeons. In E. Wasserman & T. Zentall (Eds), Comparative Cognition: Experimental Explorations of Animal Intelligence, Ch. 5. New York, NY: Oxford Univ.
- Blough, D. S. (2007) Reaction times in discriminations of varying difficulty: Decision modulated by arousal. Behavioural Processes, 74, 234-243.
- Kling, J. W., Blough, D. S. & Church, R. M. (2009) The Hunter Laboratory of Psychology after 50 years. American Journal of Psychology, 122, 259-266.
- Blough, D. S. (2009). Reaction times identify a Pavlovian component in a two-choice discrimination. Behavioural Processes, 81, 195-204.
- Blough, D. S. (in press). Reaction-time explorations of visual perception, attention and decision in pigeons. In E. Wasserman & T. Zentall (Eds), Comparative Cognition: Experimental Explorations of Animal Intelligence, , 2nd edition, xxx New York, NY: Oxford Univ.
- Blough, D. S. (2010). A random-walk interpretation of incentive effects in visual discrimination. Behavioural Processes, 85, 209-214.
- Blough, D. S. (2011). A random-walk model of accuracy and reaction time applied to three experiments on pigeon visual discrimination. Journal of Experimental Psychology: Animal Behavior Processes, 2011,37, 133-150.

Research in progress

Discriminative processes: Quantitative analysis of stimulus discrimination, attention, and incentive reflected in reaction time and other measures

Service**University service: general**

1968 Stultz Committee on Curricular Reform
 1969-70 Faculty Policy Group
 1970-71 Housing Committee
 1971-72 Campus Planning Committee (Chair)
 1973-77 Chair, Psychology Dept.
 1975-77 Newman Comm: Behavioral Science in Medical Education
 1977-82 Medical Council
 1981-83 Committee to review program in Bio. & Med.
 1984-85 Campus Planning Committee
 1984-85 Academic Staffing Task Force for Sciences/Engineering
 1986-88 EPC Subcommittee on homosexuality in the curriculum
 1987-88 Review committee, Center for Race & Ethnicity
 1987-90 Review panel for research grants using animals
 1989-90 Chair, Psychology Dept.
 1987-92 Review panel, Biomedical Research grants (BRSG)
 1989-96 Institutional Animal Care and Use Committee
 1993-96 Faculty Committee on Educational Legislation (Chair, 1994-96)
 1995-99 Brain and Behavior Graduate Committee
 1996- 98 Campus Planning Committee
 Regular service as Freshman and CAP advisor, Sophomore advisor prior to retirement

University service: departmental

Since 1995

1995 - 2000 Director of Graduate Studies
 Frequent service on committees for hiring, tenure review, first-year project, preliminary examination and graduate research committees.
 Since retirement, continuing service on several graduate research and PhD committees.

Service to the Profession**Research review panels:**

1963-67 Psychobiology Review Panel, NSF
 1968-72 Small Grants Review Committee, NIMH
 1975-79 Experimental Psychology Research Review Committee, then Basic Behavioral Sciences Review Committee, NIMH (Chair, 1977-79)
 1987 Special review panel, Basic Behavioral Sciences Committee, NIMH

Editorial service:

1958-70 Editorial Board, Journal of the Experimental Analysis of Behavior
 1971-73 Associate Editor, Animal Learning and Behavior
 1976-81 Board of Editors, Journal of Experimental Psychology: Animal Behavior Processes
 1981-1985 Editor, Journal of Experimental Psychology, Animal Behavior Processes
 1997-2003 Consulting Editor, Animal Learning and Behavior
 1958 – present Frequent ad-hoc reviewer for various journals

Service in professional organizations:

Board of Directors, Society for the Experimental Analysis of Behavior, 1957-1970
 Board of Directors, Eastern Psychological Association, 1977-81 and 1982-85
 Board of Governors, Psychonomic Society, 1981-87; Chair, 1987
 Publications Committee, Psychonomic Society, 1986-90 , Chair, 1989-90

Professional affiliations:

American Academy of Arts & Sciences
 American Association for the Advancement of Science (Fellow)
 American Psychological Association (Fellow)
 American Psychological Society (Fellow)
 Comparative Cognition Society
 Eastern Psychological Association
 Psychonomic Society

Academic Honors, Research Grants, Honorary Societies**Honors and honorary societies:**

Sigma Xi, Phi Beta Kappa, election in 1951
 American Academy of Arts and Sciences, election in 1962
 Society of Experimental Psychologists, election in 1968
 Comparative Cognition Society Research Award, 2004
 Fellow, American Psychological Assn., Divs. 3 & 25
 Fellow, American Assn. for the Advancement of Science
 Boards of directors, editorships - see above
 Edgar J. Marston Chair, Brown University 1980-
 Chair, Board of Governors, Psychonomic Society, 1987

Grant support

Continuous grant support for research from 1958 to 2009 through the National Institute of Mental Health and the National Science Foundation.

Special-purpose grants: NIMH - Evaluation of the LINC Computer 1964-65; NIMH - Scientific Evaluation and Planning 1977-79; American Psychological Association - Operation of the Journal of Experimental Psychology: Animal Behavior Processes 1981-85

Most recent grant support (2005-2010): Processes of Discrimination and Attention (NIMH)

Teaching

In the years prior to my retirement from teaching in the summer of 1999 I regularly taught Introductory Psychology (a large lecture with lab sections), Animal Cognition (an undergraduate/graduate seminar) and Advanced Quantitative Methods (with Prof. Church - a graduate seminar). Typically I also directed the research of one or two graduate students and served on several research committees. In earlier years I taught a number of courses in learning, perception, cognition, and social psychology at the undergraduate level, and learning, perception, quantitative methods, and specialized topics at the graduate level.

Since retirement I have stepped in as a lecturer in Psychology 1 and have participated in the graduate core seminars in learning (Psych. 207) and Advanced Quantitative Methods (Psych. 202) . As of July 2011 I was on research or PhD committees of two graduate students, and consulting in two research programs other than my own.