

ACKNOWLEDGEMENTS

The author and the publishers would like to thank the following for permissions to reprint figures:

Indiana University Press for permission to reprint Figure 143 from the 1962 edition of H.S. Jennings, *Behavior of the Lower Organisms*, originally published by Columbia University Press, New York, 1906.

San Francisco Press for permission to reprint Figure 9 from B.F. Miessner, *On the Early History of Radio Guidance*, San Francisco, 1964.

Chapman and Hall for permission to reprint Figure 7.5.1 from W. Ross Ashby, *Design for a Brain*, 2nd edition, Wiley, New York, 1960.

Dover Publications, Inc. for permission to reprint Figure 3 and Figure 4 from the 1950 unabridged edition of W. James, *The Principles of Psychology*, originally published by Holt, New York, 1890; Figure 69 from A.J. Lotka, *Elements of Mathematical Biology*, New York, 1956 (1st edition, with the title *Elements of Physical Biology*, William and Wilkins, Baltimore, 1925).

Oxford University Press for permission to reprint Figure 2 from W. McDougall, A contribution towards an improvement in psychological method. II, *Mind*, 1898, 7: 159-178; Figure 1 from W. McDougall, The physiological factors of the attention-process. I, *Mind*, 1902, 11: 316-351.

University of Illinois Press for permission to reprint Figure 1 from J.M. Stephens, A mechanical explanation of the law of effect, *American Journal of Psychology*, 1929, 41: 422-431; Figure 5 from G.K. Bennett and L.B. Ward, A model of the synthesis of conditioned reflexes, *American Journal of Psychology*, 1933, 45: 339-342. Copyright © 1929, 1933 by the Board of Trustees of the University of Illinois.

Helen Dwight Reid Educational Foundation for permission to reprint Figure 2 from H.D. Baernstein and C.L. Hull, A mechanical model of the conditioned reflex, *Journal of General Psychology*, 1931, 5: 99-106; Figure 1 from R.G. Krueger and C.L. Hull, An electro-chemical parallel to the conditioned reflex, *Journal of General Psychology*, 1931, 5: 262-269; Figure 14 from N. Rashevsky, Possible brain mechanisms and their physical models, *Journal of General Psychology*, 1931, 5: 368-406; Figure 1 from D.G. Ellison, A mechanical synthesis of trial-and-error learning, *Journal of General Psychology*, 1935, 13: 212-218; Figure 1 from H. Bradner, A new mechanical 'learner', *Journal of General Psychology*, 1937, 17: 414-419. Published by Heldref Publications, Washington. Copyright © 1931, 1935, 1937

The American Psychological Association for permission to reprint Figures 5 and 6 from C.L. Hull, Goal attraction and directing ideas conceived as habit phenomena, *Psychological Review*, 1931, 38: 487-506; the Figure from T. Ross, The synthesis of intelligence. Its implications, *Psychological Review*, 1938, 45: 185-189.

Cambridge University Press for permission to reprint Figure 15.2 from P.N. Johnson-Laird, *Mental Models*, Cambridge, 1983. Copyright © 1983 by P.N. Johnson-Laird.

The British Psychological Society for permission to reprint Figure 2 from A. Tustin, Do modern mechanisms help us to understand the mind?, *British Journal of Psychology*, 1953, 44: 24-37; Figure 1 from J.A Deutsch, A new type of behaviour theory, *British Journal of Psychology*, 1953, 44: 304-317.

Gernsback Publications, Inc. for permission to reprint the cover of *Radio Electronics*, December 1951, and Figure 6 from E.C. Berkeley, Algebra in electronic design, *Radio Electronics*, February 1952: 55-58.

New Scientist for permission to reprint Figure 3 from A.M. Andrew, Machines which learn, *New Scientist*, 1958, n. 4: 1388-1391.

HMSO for permission to reprint Figure 2 from F. Rosenblatt, Two theorems of statistical separability in the Perceptron, *Proceedings of the Teddington Symposium on Mechanisation of Thought Processes*, vol. 1, London, 1959: 421-450; Figure 1 from A.J. Angyan, *Machina reproductrix*. An analogue model to demonstrate some aspects of neural adaptation, *Proceedings of the Teddington Symposium on Mechanisation of Thought Processes*, vol. 2, London, 1959: 933-943.

IEEE for permission to reprint Figure 1 from W.S. McCulloch, A.G. Oettinger, N. Rochester and O. Schmitt, The design of machines to simulate the behavior of the human brain, *IRE Transactions on Electronic Computers*, December 1956: 240-255; Figure 1 from P.L. Simmons and R.F. Simmons, The simulation of cognitive processes. An annotated bibliography, *IRE Transactions on Electronic Computers*, September 1961: 462-483. Copyright © 1956, 1961 by IRE (now IEEE).

Pearson Education, Inc. for permission to reprint Figure 2.1 from A. Newell and H.A. Simon, *Human Problem Solving*, Prentice-Hall, Englewood Cliffs, N.J., 1972.

The McGraw-Hill Companies for permission to reprint Figure 1 from H.A. Simon, The control of mind by reality: human cognition and problem solving, in S.M. Farber and R.H.L. Wilson (eds.), *Man and Civilization*, New York, 1961.

Josiah Macy, Jr. Foundation for permission to reprint Figure 8 from H. von Foerster (ed.), *Cybernetics. Circular Causal Feedback Mechanisms in Biological and Social Sys-*

tems. *Transactions of the Tenth Conference*, New York, 1953.

Intellect Books for permission to reprint Table 3.2 from J.A. Barnden and J.B. Pollock (eds.), *High-Level Connectionism Models*, originally published by Ablex, Norwood, N.J., 1991.

MIT Press for permission to reprint Figure 2 from G. Tesauro, Neural models of classical conditioning: a theoretical viewpoint, in S.J. Hanson and C.R. Olson (eds.), *Connectionist Modeling and Brain Function*, Cambridge, Mass., 1990: 74-104; Figure 1 from J.-A. Meyer and A. Guillot, Four years of animat research, *From Animals to Animals 3*, Cambridge, Mass., 1994: 2-11.

The American Association for the Advancement of Science and the Authors for permission to reprint Figure 2, C₁-C₃ from R.D. Hawkins, T.W. Abrams, T.J. Carew and E.R. Kandel, A cellular mechanism of classical conditioning in *Aplysia*: activity-dependent amplification of presynaptic facilitation, *Science*, 1983, 219: 400-405. Copyright © 1983 by American Association for the Advancement of Science.

Plenum Publishers for permission to reprint Figure 5 from A. Gelperin, J.J. Hopfield and D.W. Tank, The logic of *Limax* learning, in A. Selverston (ed.), *Model Neural Networks and Behavior*, New York, 1985: 237-261.

The author and the publishers have made very effort to contact authors/copyright holders of the material reprinted in the present book. This has not been possible in all cases, and we would welcome correspondence from those individuals/companies we have been unable to trace.

The Discovery of the Artificial
Behavior, Mind and Machines Before and Beyond
Cybernetics

Cordeschi, R.

2002, XX, 314 p., Hardcover

ISBN: 978-1-4020-0606-7