

# Evolutionary Psychology as Maladapted Psychology

**Robert C. Richardson**

A Bradford Book  
The MIT Press  
Cambridge, Massachusetts  
London, England

© 2007 Massachusetts Institute of Technology

All rights reserved. No part of this book may be reproduced in any form by any electronic or mechanical means (including photocopying, recording, or information storage and retrieval) without permission in writing from the publisher.

MIT Press books may be purchased at special quantity discounts for business or sales promotional use. For information, please e-mail [special\\_sales@mitpress.mit.edu](mailto:special_sales@mitpress.mit.edu) or write to Special Sales Department, The MIT Press, 55 Hayward Street, Cambridge, MA 02142.

This book was set in Times Roman and Syntax by SNP Best-set Typesetter Ltd., Hong Kong, and was printed and bound in the United States of America.

Library of Congress Cataloging-in-Publication Data

Richardson, Robert C., 1949–.

Evolutionary psychology as maladapted psychology / by Robert C. Richardson.

p. cm.—(Life and mind)

“A Bradford book.”

Includes bibliographical references and index.

ISBN 978-0-262-18260-7 (hardcover : alk. paper)

1. Evolutionary psychology. I. Title.

BF698.95.R44 2007

155.7—dc22

2006030807

10 9 8 7 6 5 4 3 2 1

# Index

- Abrams, P., 111–112  
Acquired characteristics, inheritance of, 57, 118–120  
Adaptation, 17, 58, 94, 89–110, 141–158, 173–176  
  ancestral environments, 13, 145, 148  
  in cave environments, 117–124  
  as comparative concept, 148–150  
  and complexity, 17–19, 136, 146, 170, 182, 185  
  constraints/conditions on, 11, 80, 85, 97–105, 108–110, 141–158, 173–175  
  defined, 97, 145, 146–148  
  and design, 65, 71  
  dynamic models, 99–104  
  and evolutionary history, 96, 104, 145–151, 155–157, 187  
  historical concept, 41–44, 74–85, 95–98, 145  
  and psychology, 13–20, 29, 60–61, 89–91, 98–99, 136–139, 142, 146, 178–179  
Adaptationism/adaptationist methodology, 12, 53–88, 97, 108–117, 143  
  and optimality, 53, 108, 110–112  
Adaptive explanations. *See* Adaptation  
Adaptive thinking, 22–23, 42, 43, 66, 96, 143, 148, 174  
Agassiz, L., 82, 119, 120  
Aggression, 14–15  
Ahlquist, J. E., 159  
Alberch, P., 54  
Alcock, J., 23–24, 31, 45, 54, 110, 113, 187  
Allometry/allometric, 54, 58, 80, 113, 125–126  
*Amblyopsis spelaea*, 119–120  
Amundson, R., 66, 187  
Ancestral environments, 12–13, 16, 17, 21, 29, 41, 60, 64–65, 98, 107, 128–131, 137–139, 141, 146–147, 150, 174  
Ancestral traits, 146, 150–158, 159, 165–167, 190. *See also* Trait polarity  
Andrews, P., 159  
Anolis lizards, 156–157, 174–175  
*Anthoxanthum*, 105–107  
Antonovics, J., 105–107  
Apes, 17, 95, 158–161, 191  
*Archaeopteryx*, 44–54, 73–77, 85–87, 98, 145, 148–150, 169, 187  
Arnold, S., 99, 100  
*Astyanax faciatus*, 120, 189  
*Australopithecus*, 126, 133, 158–165  
Barash, D., 113  
Barr, T., 122, 125  
Baum, D. A., 150  
*Bauplan*, 54–55, 187  
Bazzaz, F. A., 134  
Beatty, J., 42–43, 66–67  
Bechtel, W., 22, 81  
Bernoulli, D., 70  
Bernoulli's principle, 70–71  
Bloom, P., 18, 89, 124–125, 132, 137, 144, 164, 168, 178, 180, 187  
Bock, W., 48  
Bradshaw, A. D., 105–107  
Brandon, R., 68–70, 97, 99, 105–108, 114–116, 145, 188  
“Broken stick” model, 73  
Brooks, D. R., 150–157  
Browne, J., 185  
Brush, A. H., 51, 181  
Buller, D., 14–15, 42, 53, 54, 96, 186, 187, 188  
Burian, R., 19, 57, 97, 145  
Burkhardt, F., 137  
Buss, D., 15–18, 24, 58, 65, 86, 88, 178, 185, 187, 188  
  *The Dangerous Passion*, 59–64  
*Cepaea nemoralis*, 79  
Chagnon, N., 15, 21  
Chamberlain, A. T., 160  
Chambers, R., 4–5  
Chapman, J., 6

- Chimpanzees *Pan*, 27, 127, 130, 159, 160, 167, 178, 189
- Chomsky, N., 25, 26, 93, 125, 129, 166, 178, 189, 191
- Cladism, 51–52, 151–165, 181, 182, 190, 191
- Coddington, J., 150, 156
- Cognition  
as an adaptation, 20, 89–96, 136–137, 142, 163–166, 171–182, 189  
as a complex capacity, 91–92, 98
- Cognitive mechanisms, 75, 84, 91, 98, 127, 189
- Cognitive programs, 135
- Comparative method, 148–158, 168–171
- Complexity, 17–19, 89, 93, 114, 124, 127–129, 136–137, 144, 164, 166, 178–182
- Constraints on evolution or design, 18, 42, 53–59, 66–68, 87–88, 108, 110, 115, 138, 155–156, 174  
*a posteriori*, 73–74, 86  
*a priori*, 70–73, 84–85
- Convergent evolution, 104, 142, 143, 155, 168
- Cosmides, L., 13–14, 17–26, 30, 44, 46, 59, 66, 86, 89, 91–92, 98, 100–103, 132–138, 141–143, 146–147, 168, 176–178, 180, 187, 188, 189, 190
- Cronin, H., 57, 185, 186, 187
- Culver, D. C., 121–124
- Daly, M., 24, 60, 186
- Darwin, C., 1–8, 17, 23, 26, 87, 137, 142, 145, 149, 173–174, 179  
on common descent, 1–3, 78, 83  
“Darwin’s gift,” 13–20, 145  
and Dennett, 44–46, 178–179  
the *Descent*, 2–3, 82  
on human evolution, 1–3  
and Huxley, 6–8  
on natural selection, 2–3, 82–83, 89, 104, 124, 185  
the *Origin*, 1–3, 17, 82–83  
on psychology, 1–4  
on regressive evolution, use and disuse, 119–120, 123, 185  
on sexual selection, 2–3, 64  
and Spencer, 3–6
- Darwinian algorithms, 20–26
- Darwinian histories, 76–78
- Davies, P., 187
- Dawkins, R., 18–20, 26, 54, 64, 110, 115, 154, 186, 187
- Dawkins’ gambit, 18–20
- Day, T., 134
- Deacon, T., 125, 161, 163, 165–167, 189, 191
- Decision making, 32–35, 186
- deKay, J. E., 119
- Dennett, D. C., 44–52, 59, 65–67, 85–88, 110, 132, 134, 142–145, 150, 168–170, 178–179, 187, 191
- Design, argument from, 9, 17–18, 86, 89, 92, 132
- Desmond, A., 185
- Development, 17–19, 54–58, 72, 78, 80, 83–84, 97, 100, 154, 156, 191
- Donaghue, M., 153
- Ecological factors, 42, 69, 98–99, 105–106, 122, 127–128, 132–134, 165–166, 168
- Eldredge, N., 185
- Ellis, B., 75–84, 88, 188
- Endler, J., 78, 117
- Engineering design, 22, 44, 49, 65–67, 70–71, 84, 85, 147, 150, 154, 155, 174
- Environment of evolutionary adaptedness, 20, 29, 146, 149, 154
- Epicycles, 75–85
- Evans, M. (George Eliot), 6
- Evolutionary explanations, 11, 17, 19, 20, 38–39, 53, 97–105, 145–147, 168–171, 174, 178–179, 182–183, 190, 191  
constraints on, 84–88, 94, 96, 99, 107, 118, 125, 147, 151–155, 187  
falsifiability of, 75–83
- Eye loss, 117–124
- Feathers, origin of, 47, 51–52, 181–182
- Fedducia, A., 181
- Fisher, R. A., 155–156, 187
- Fitness, 29, 36, 41, 64, 68–70, 90, 97, 98–99, 103–106, 109, 111–112, 115, 120, 122, 126, 134, 141, 145–146, 183, 186, 189, 192
- Feagle, J. C., 160
- Flight, origin of, 44, 47–52, 73, 181–182
- Fodor, J., 21, 23, 92
- Fong, D. W., 121–124
- Frequency-dependent selection, 111–112
- Functions, 10, 13, 18, 20, 22, 31, 38, 41–87, 123, 138, 149, 164, 180–181, 187
- Futuyma, D., 185
- Galton, F., 102
- Gammarus minus*, 120–124, 148
- Genetic determinism, 29–30, 145
- Genetic variance, 101–103, 129, 130, 176–178, 188, 189–190
- Ghiselin, M., 65–66
- Gigerenzer, G., 20, 132, 188
- Gossip, D., 157
- Godfrey-Smith, P., 110, 111, 114, 187
- Gorillas, 130, 160
- Gould, S. J., 27, 31, 42, 46, 53–59, 65, 66, 75, 79, 80–81, 97, 112–113, 137–138, 150, 163, 176–178, 187, 188, 191

- Grammars, 25, 124, 128–129, 178  
 Grantham, T., 18, 19, 54  
 Gray, A., 2  
 Griffiths, P., 26, 42, 53, 69, 87, 97, 142, 143, 145  
*Gymnocladus*, 46  
*Halobates*, 71–73, 85, 87–88, 174  
 Hand, human, 2, 54, 55, 65, 74, 75, 84–87, 128, 190  
 Haplodiploidy, 115  
 Hardcastle, V., 186  
 Harvey, P. H., 150  
 Heavy metal tolerance, 105–108, 110  
 Heilmann, G., 181  
 Hennig, W., 151  
 Heritability, 98, 100–103, 106–107, 123, 129–130, 132, 135, 145, 175, 188, 189  
 Herre, E. A., 115  
 Heterozygote superiority, 78–79, 101, 109, 116  
 Hodge, M. J. S., 87, 188  
 Holden, C., 164  
 Holling, P. S., 42–43  
 Holloway, R., 163, 164  
 Hominid phylogenetics, 11, 158–168  
 Hominids, 20, 95, 125–132, 133–136, 138, 142, 158–161, 164–168, 171, 174–175, 182, 189, 191  
 Hominoids, 158–159  
*Homo*, 125–129, 160–166, 171, 174, 175, 182, 190, 191  
   enlarged brains, 125–126, 128, 131–134, 160, 163  
   various species of, 95, 160–162  
 Hull, D., 153  
 Human reasoning, 20, 25–26, 89, 132–136, 141–145  
   as an adaptation for social exchange, 19–20, 24, 25, 84, 91–92, 132, 134–135, 141–142  
   as a general purpose capacity, 22, 132, 137  
 Hume, D., 37, 39, 86–88, 188  
 Huxley, T. H., 6–12, 159–160, 173, 187  
   on *Archaeopteryx*, 46–47  
   on evolutionary ethics, 6–8  
   *Man's Place in Nature*, 9  
*Hylobates*, 159, 160  
*Hymenoptera*, 19, 107, 115  
 Incest taboos, 27–29  
 Inductive inference, 20, 76, 90–91  
 Innateness, 25, 26, 129, 167, 178  
 Irschick, D. J., 157  
 Jackman, T. R., 157  
 Jain, S. K., 105–107  
 James, W., 4, 20, 21  
 Jayne, B., 185  
 Jealousy, 3, 20, 59–64, 80, 88  
 Jones, D., 121–124  
 Kane, T., 120–124  
 Kant, Immanuel, 25, 26  
 Kauffman, S., 19  
 Ketelaar, T., 75–84, 88, 188  
 Kingsland, S., 188  
 Kingsolver, J. G., 99  
 Kin selection, 81, 83  
 Kinship, 21, 27–28, 107, 138, 183  
 Kitcher, P., 27–35, 62–63, 76–79, 112, 176, 183, 185, 186, 192  
 Knight, F., 186  
 Kottler, J. J., 185  
 Kuhn, T., 14, 80, 81, 84  
 Lactose tolerance, 101, 147  
 Lakatos, I., 80–84  
 Lamarck, J. B., 4, 57, 118–119  
 Lamarckism, 57  
 Lande, R., 51, 99, 103  
 Larson, A., 150, 156, 158  
 Lauder, G., 66–68, 70, 72, 74, 168, 187, 188  
 Leroi, A. M., 168  
 Levins, R., 134  
 Lewes, G. H., 6  
 Lewontin, R., 46, 53–59, 65–66, 75, 79–81, 94, 97, 99, 106, 112–113, 134, 135, 145, 150, 156, 176–178, 183, 186, 187, 188  
 Lieberman, D., 125, 191  
 Logical positivism, 75–76  
 Losos, J. B., 156–158, 175  
 Love, 61–62  
 Lumsden, C., 26, 31, 137, 186  
 Lyell, C., 2, 4, 175  
 Lyons, S., 187  
 MacArthur, R., 73–74, 187  
 Machado, C. A., 115  
 MacNair, M., 106  
 Macroevolution, 148  
 Maddison, D. R., 153  
 Maddison, W. P., 153  
 Malarial resistance, 79, 101, 109, 147  
 Mantids, 42–44  
 Martin, L., 159  
 Martineau, H., 6  
 Mayr, E., 23, 51, 85, 110, 113, 177, 187  
 McLennan, D. A., 150, 157  
 Microevolution, 148  
 Miles, D. B., 156  
 Mill, J. S., 6  
 Mitchell, S., 19  
 Modularity, 21, 92, 188  
*Montanoa*, 157  
 Moore, J., 185

- Naturalism, 8–9  
 Natural language, 2–3, 41, 93–96, 124–132, 144–147, 178–180, 182, 185, 187, 188, 189, 190, 191  
 as an adaptation, 89–97, 124–125, 137, 158, 164–171, 178–179  
 anatomical structures, 127, 131, 189  
 as a complex capacity, 89, 92–94, 124, 127–128, 136–137, 144–145, 169  
 explained by natural selection, 125–132, 137  
 as facilitating communication, 144, 189  
 learning, 25, 124–125, 166–167  
 Natural selection, 1–3, 8–9, 79, 94, 99, 141–147, 161, 163–164, 167–170, 173, 178–182, 185  
 alternatives to, 53–55, 57–58  
 and optimality, 108–111  
 and psychological capacities, 13–20, 26, 93  
 relative to environment, 68–70  
 and variation, 11–12, 74–75  
 Nichols, S., 18, 19  
 Nisbett, R., 63  
 Nozick, R., 89–91, 132, 134, 137, 188
- Orgel, L., 144  
 Orzack, S., 108–117  
 Ospovat, D., 82–83, 188  
 Ostram, J. H., 47–51
- Padian, K., 47–48, 51, 181–182  
 Page, R., 19  
 Pagel, M. D., 150  
 Pagel, W., 17, 43–44, 65, 86, 89  
 Palmer, C., 36–37, 186  
 Parental investment, 15, 41, 60–61, 64, 83, 155, 183, 191  
 Parent–offspring conflict, 16  
 Parkes, K. C., 181  
 Pentadactyl limb, 55, 74, 84, 87, 147, 190  
 Phylogenetic analysis, 104, 115, 130, 151–158, 190  
 Phylogenetics, 148–158, 175, 182, 190  
 Pinker, S., 16, 18, 89, 92–94, 124–129, 132, 137, 141–144, 164–170, 178–180, 186, 187  
 Pleistocene, 20, 88, 92, 128, 146, 165, 166, 175  
 Pleistocene overkill, 14  
*Pongo*, 159–160  
 Popper, K., 75–76, 80–82  
 Population growth, 4–5, 188, 189  
 Population structure, 103–104, 130–131, 175  
 Prairie dogs, 70–71, 87  
 Pregnancy “sickness,” 46  
 Pritchard, J., 134  
 Profet, M., 45, 46  
*Proteus*, 118  
*Protoarchaeopteryx*, 52
- Proximate explanations, 23  
 Prum, R. O., 51, 181
- Raff, R., 57  
 Rape, 36–37, 186  
 Rausher, M. D., 114  
 Reciprocal altruism, 16, 81, 84  
 Regression, 2, 102  
 Regressive evolution, 117–124, 189  
 Reverse engineering, ch. 2 *passim*, 147, 150, 155, 174, 178, 187, 191  
 Richards, R., 2, 6, 185  
 Richardson, R. C., 19, 22, 53, 54, 81  
 Ridley, M., 15, 19, 30, 64, 186  
 Rose, S., 168, 186  
 Ross, L., 63  
 Ruse, M., 188
- Sahelanthropus tchadensis*, 159  
 Salamanders, 67–68  
 Schank, J., 55  
 Schluter, D., 134  
 Sex ratios, 111, 115, 155  
 Sexual differences, 15, 20, 61–63, 100  
 Sexual preferences, 10–12, 15, 20, 27–29, 62, 143  
 evolutionary explanations of, 11–12, 24, 60, 65, 107  
 Sexual rivalry, 15, 21  
 Sexual selection, 3, 64, 81, 84, 126, 154  
 Sibley, C. G., 159  
 Sickle cell genes, 78–79, 101, 109, 189  
 Smith, A., 5  
 Smith, J. M., 54, 84, 112, 187  
 Snakes, fear of, 16, 60  
 Sober, E., 97, 108–117, 145  
 Social cognition, 20, 24, 26, 92, 167–168  
 Social evolution, 4–7, 15, 134  
 Social exchange, 20, 22–25, 92, 132–134, 142  
 Social psychology, 61, 63, 88  
 Social reform, 34–37  
 Social sciences, 21, 24  
 Sociobiology, 26–32, 37, 137, 146, 176, 180  
 Spandrels, 18, 53–59, 75, 79, 83, 92  
 Spencer, H., 4–9, 12, 20, 26  
 the “development hypothesis,” 5  
 the poor laws, 5–7  
 Spiders, fear of, 16, 27, 60, 185, 188  
 Standard Social Science Model (SSSM), 23, 30, 176, 190  
 Steiner, H., 181  
 Sterelny, K., 26, 53, 188  
 Sultan, S. E., 134  
 Symons, D., 10–12, 21–22, 143
- Tenrecs, 76–78  
 Therapods, 50–51

- Thornhill, R., 36–37, 65, 186, 187
- Tooby, J., 13–14, 17–26, 30, 44, 46, 59, 66,  
86, 89, 91, 92, 98, 100, 101, 103, 132, 134,  
135, 137, 138, 141–143, 146–147, 168,  
176–178, 180, 187, 188, 189, 190
- Trait polarity, 104, 107, 124, 131, 136, 190.  
*See also* Ancestral traits
- Trivers, R., 16, 60, 64, 186
- Troglomorphy/troglomorphic, 118, 121–123
- Turner, R. G., 105–107
- Uetz, G., 185
- Velociraptor*, 150
- Vera causa*, 87–88, 188
- Vickers, A. L., 62–63, 186
- Vogel, S., 65, 70, 72
- von Baer, K. E., 82
- Wallace, A. R., 3–4, 173, 185
- Ward, S., 159
- West, S. A., 109, 115, 121–123
- Whewell, W., 87
- Wilkens, H., 120
- Williams, G. C., 57, 65, 74, 125
- Wilson, E. O., 26–27, 30–31, 137, 186
- Wimsatt, W., 55
- Wood, B. A., 160–161

