

INTRODUCTION

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The theory of evolution by natural selection is bearing fruit in studies of the mind. A main line of inquiry has been a concerted effort to rethink cognitive psychology. So-called “*evolutionary psychology*,” like cognitive psychology, aims to discover the information-processing mechanisms that underwrite our psychological capacities. The concepts and methods, however, are distinct, appealing to our understanding of the natural processes of evolution by natural selection and sexual selection. The present volume refines those concepts and methods, offering new ways of conducting inquiry.

This anthology contains all original peer-reviewed contributions to improving Darwinian perspectives on human behavior. They offer balance in devising innovative research methods that respond to conceptual challenges in evolutionary psychology. Leading researchers report their scientific findings or reflect on the methods and claims in the literature, thereby providing a mix of empirical and theoretical analyses. I solicited contributions from individuals in various sub-disciplines of psychology, in anthropology, and in philosophy of science, insuring a healthy spread of disciplinary perspectives. With chapters from both practitioners and critics of the larger project, this volume is for readers who are skeptical about the field as well as those who like the paradigm and use it. Some people avoid the field because they view anything friendly to the field as dogma or else find flaws in its concepts or methods. They forget that we can simultaneously do evolutionary psychology and challenge it to be better. For instance, the volume addresses crucial topics that critics find omitted in the most well known literature.

Basic to all evolutionary thought is a distinction between the fact, processes, and the course of evolution. This distinction is important for understanding research based on the factual premise that our minds,

not just our bodies, evolved. All contributors to this volume agree on the *fact* of psychological evolution: Our psychological capacities are the products of evolutionary processes. All share a consensus on the *processes* of psychological evolution: Modern theory enjoys a consensus on how natural selection and sexual selection operate, and they played a vital role in our evolutionary history, shaping specialized reproductive tasks for our minds just as they do for our bodies.

The standard rationale for doing evolutionary psychology derives from this consensus. Bodies that exhibit a general capacity for behavior but whose behavior did not lead to reproductive success could not have evolved by selection. Similarly, minds having general capacities to think, feel, learn, and fit into a culture, but whose capacities did not lead to reproductive success, could not have evolved by selection. Attaining reproductive success requires executing a host of specialized tasks that require specialized and not just general capacities (Barkow, Cosmides, & Tooby, 1992). Those who abandon evolutionary psychology because of their criticisms, whether or not their criticisms are well taken, must have some view of human evolution. Does that assumed view hold up any better than evolutionary psychology? Upon inspection, it usually, or always, fails as an alternative. In criticizing the new work, people rely on older views of human evolution, which typically depicted us as evolving only general capacities for cognition and culture. Such views can be proved obsolete on the basis of current evolutionary knowledge (Crawford & Krebs, 1998). Although we know the difficulties inherent in identifying the selection pressures that long ago shaped the specialized tasks of the human mind, our commitment to make evolutionary sense of ourselves cautions us not to abandon Darwinism in studying the mind. If a critic has a view of human psychological evolution that can be tailored to fit current evolutionary knowledge, then evolutionary psychologists are happy to pursue it. It is moot whether the critic's view is called "evolutionary psychology" or something else, for the field should be broadly conceived as guided by this commitment rather than narrowly conceived as a doctrine.

All contributors acknowledge that we cannot reconstruct a detailed *course* of evolution; we try to do the best science we can, given what we know and do not know about the evolutionary history of the human species involving mind and behavior. This raises a problem for explaining human mind and behavior using as explanatory factors the *processes* of evolution (natural and sexual selection) together with evolved psychological mechanisms (task-specialized information-processing devices which count as unobservable, hypothesized entities).

The *processes* of evolution (which we have a lot of theoretical knowledge about) do not apply directly to current behaviors, but govern the *course* of mental evolution (which we know little about, especially historical events in hominids, primates, and mammals that occurred long before humans existed). Given this blend of knowledge and ignorance, it is not easy to decide the standards for what counts as an explanatory achievement or a compelling conclusion. Contributors with different perspectives address the problem of how to develop and combine various types of new methods and evidence across many psychological and biological sub-disciplines in the face of limitations on the available evidence about our evolutionary past.

The result is a mix of advocacy and skepticism, of results and ruminations—a mix that should interest anyone trying to understand the mind using a naturalistic approach to inquiry. My aim here is to sketch briefly the problems and ideas that frame the chapters, highlighting what is distinctive and novel in the various views so as to underscore the volume's significance and unity. My introductions to each part of the volume provide fuller elaboration of individual chapters. Collectively, the introductions provide a guide to many different aspects of the readings and take a position on long-standing key issues in order to promote critical discussion that pushes debate in new directions suggested by the chapters. The real substance is contained in the chapters themselves.

Evolutionary psychology encompasses all areas of psychology that make use of the biological theory of evolution. The field is too young to have a single dominant paradigm, but has a variety of related standard approaches. My introductions highlight the import of the challenges and innovations in these scientific studies for how to conduct research on the evolution of mind, constructing a philosophy of evolutionary psychology.

NARROW AND BROAD VISIONS OF EVOLUTIONARY PSYCHOLOGY

To call something “innovative” is to describe it as new and different, showing a marked departure from previous practice. So, we need an idea of standard practice. People wrongly assume that there is one dominant approach in evolutionary psychology, the Darwinian perspective popularized by Robert Wright in *The Moral Animal* (1994), whose trajectory is exemplified by only a handful of leading scientists in the field: Martin Daly and Margo Wilson's *Homicide* (1988), Jerry

Barkow's, Leda Cosmides' and John Tooby's *The Adapted Mind* (1992), Steven Pinker's *The Language Instinct* (1994) and *How the Mind Works* (1997), and David Buss's *The Evolution of Desire: Strategies of Human Mating* (1994) and *Evolutionary Psychology: The New Science of the Mind* (1999). To elevate the shared overlap of doctrines or themes in these works to the status of "the dominant approach" does an injustice to a host of other researchers whose work is vital to advancing the field, such as the scientists contributing to this volume. Public perception is largely shaped by the fact that reporters seek out the "leaders of the field" and report on their work. These same figures are referred to again and again because they were the subjects of previous reports. This media pattern leads to a narrow vision of the field; the so-called "dominant approach" is constructed by over-emphasizing the work of some scientists and under-emphasizing the work of others.

The problem is exacerbated by the fact that any description of the field is biased toward the interests and work of the researcher describing it. D.S. Wilson highlights this point in his (1999) review of Buss's textbook, *Evolutionary Psychology* (1999), the first text purporting to cover the field. D.S. Wilson's title "Tasty Slice—But Where is the Rest of the Pie?" conveys his worry: If the public identifies "evolutionary psychology" with "Buss-style research" and Buss's empirical work is guided by research strategies that ignore topics central to psychology, even the true information he reports will not be accepted until it is seen in the context of a larger story. In fact, some evolutionists want to avoid the term "evolutionary psychology" because they think it refers exclusively to a very specific innatist-adaptationist interpretation of how evolution operates: The mind is a set of evolved adaptations, encoded in discrete modules under genetic control and inherent in the human species, and identified by evidence of adaptive design. The whole pie is evolutionary psychology defined as "the study of mind and behavior from an evolutionary perspective." How much of the pie did Buss omit? "Using his index as a guide, Buss devotes six pages to 'culture,' six pages to 'development,' two pages to 'norms,' two pages to 'individual differences,' one page to 'learning,' and no pages to 'morality,' 'religion,' 'behavior genetics,' or, for that matter, 'brain'" (Wilson, 1999). Given the typical reader's preconceptions about human mind and behavior—involving culture, individual development, norms, learning and so forth—that seem to conflict with assumptions behind Buss's interpretations of the empirical findings, people often find it is more reasonable to retain their assumptions and

reject his conclusions than to throw out their entrenched preconceptions and accept Buss's findings.

The present volume does not seek to cover the whole pie, but does aim to redress this imbalance by including contributions that pay attention to the particular omissions D.S. Wilson points out. Let me summarize how each part of the volume does so.

Part One is entitled, "Naturally Selected Development of Behavior, Personality, and Cognition," in order to emphasize views in evolutionary psychology that reveal Buss's approach as only a part of a larger story about what makes us human. Buss's text is committed to a universal human nature of behavioral strategies so strong that there is little need to discuss existing heritable variation (behavior genetics) or individual differences apart from sex differences. By contrast, in the first chapter Linda Mealey devises a general methodology that unites the ethological study of universal human nature with the behavioral genetics of heritable variation and individual differences. To emphasize the importance of behavioral genetics' findings, in the second chapter Frank Sulloway shows how personality development yields individual differences based on the family environment niches determined by birth order and sibling competition. Buss's text is committed to Cosmides' and Tooby's view that all our cognitive evolution took place in the distant past, emphasizing their metaphor for the mind as a jukebox of specialized mechanisms that are played when pushed by environmental buttons. By contrast, in the third chapter Denise Cummins shows that the ever-changing social environment of dominance hierarchies plays a very large role in how and whether certain biological predispositions get expressed. Connecting the topics of development to norms, learning, and brain neurophysiology, she provides an alternative to the Cosmides-Tooby view that complex social animals inherit modules fully formed; instead, fast-track acquisition of social rules is part of our biological preparedness to develop social norms quickly for classes of problems critical to survival and reproductive success.

Part Two is entitled, "Sexually Selected Decision-Making in Mating and Parenting," in order to emphasize views in evolutionary psychology that reveal Buss's approach to mating as a part of a larger story about how these evolved psychological mechanisms actually operate to yield behavior. Buss's text expounds the theory that the mate preferences that drive selection of mates are mainly based on resources (material benefits such as food, direct parental care, physical protection from predators or other members of the same species,



<http://www.springer.com/978-1-4020-0133-8>

Conceptual Challenges in Evolutionary Psychology
Innovative Research Strategies

Holcomb III, H.R. (Ed.)

2001, XXIX, 401 p., Hardcover

ISBN: 978-1-4020-0133-8