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Henry Plotkin. *Evolutionary Thought in Psychology: A Brief History*.
Malden, MA: Blackwell, 2004, 169 pages, \$54.95 hardcover.

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In Press, *Personnel Psychology*.

1 Why should an I/O psychologist be interested in a review of a book, much less the
2 book itself, on evolutionary thought in psychology? Here are three reasons. First, if I/O
3 psychologists want to be current with what will become a dominant paradigm in
4 psychology throughout the 21st century, Henry Plotkins's marvelous book, *Evolutionary
5 thought in Psychology: A Brief History*, is a good place to start. Although evolutionary
6 theory is the theoretical bedrock of the life sciences and is now influential in many areas
7 of psychology, it has made few inroads into I/O psychology.¹ If evolutionary theory can
8 help us achieve a better understanding of human nature and human systems – and I would
9 argue that it can – then it should also help us provide more valid information to our
10 clients and students on how to manage people and systems. Second, Plotkin gives an
11 erudite and engaging account of the intellectual currents that influenced the relationship
12 between psychology and evolutionary thought over the past 100 years. The central
13 objective of Plotkin's book is to provide an account of why evolutionary thought was
14 essentially absent from psychology from the early twentieth century to the 1970s and,
15 secondarily, to explain why the social sciences were actually hostile toward biological
16 and evolutionary interpretations of psychological phenomenon. Three, Plotkin's book is a
17 good read, akin to an engaging non-fiction piece in *The New Yorker*. Interspersed
18 throughout are interesting anecdotes, colorful descriptions of personalities, and accounts
19 of twists of fate that affected careers and influenced the history of psychology.

20 Charles Darwin was interested in psychology, and he had little doubt that the
21 theory of natural selection would ultimately go a long way toward explaining human
22 psychology (Darwin, 1871, 1872). At the dawn of the 20th century, Darwin's theory of

¹ Some notable exceptions are Browne, (2002), Colarelli (2003), Nicholson, (2000), and the forthcoming special issue of the *Journal of Organizational Behavior* on evolutionary psychology and organizational behavior.

1 evolution by natural selection had become the dominant paradigm in biology, and
2 psychology was, in many quarters, allied with biology and evolutionary theory.² During
3 his early career, John B. Watson, whose behaviorism became a wedge separating
4 psychology from evolutionary theory, did research in what would now be called classical
5 ethology, a precursor to modern evolutionary psychology. Conway Lloyd Morgan, a
6 leading learning theorist, and James Mark Baldwin, a pioneering developmental
7 psychologist, were staunch Darwinists. William James also had an evolutionary
8 orientation. He argued for a more *functional* psychology, one that examined the practical
9 consequences of psychological processes and how ultimately they contributed to survival
10 and reproduction. This, of course, anticipated the concept of *adaptations*, a cornerstone of
11 modern evolutionary biology and evolutionary psychology.

12 What happened? Why did evolutionary theory almost entirely disappear from
13 psychology for the next seventy years? Plotkin provides a much-needed account of the
14 demise of evolutionary thought in psychology from the early twentieth century to the
15 1970s—a period that is "a gaping, and intellectually shameful, hole in the body of
16 psychological theory" (p. 8). Plotkin examines four reasons in some detail: the
17 dominance of behaviorism in psychology, erroneous interpretations of evolutionary
18 theory and the association of those interpretations with unsavory ideologies (eugenics and
19 social Darwinism), the rise of cultural anthropology, and underdeveloped linkages
20 between evolutionary theory, empirical research, and causal explanation.

21 Behaviorism was the dominant theoretical perspective in psychology from the
22 early 20th century until the 1960s, and it contains assumptions about the mind that are

² Much of the early work in industrial psychology – particularly in studies on selection, fatigue, and monotonous and repetitive work – incorporated the physiological along with the psychological.

1 incompatible with an evolutionary perspective. The hegemony of behaviorism was
2 partially responsible for keeping an evolutionarily oriented psychology off the map for
3 years.³ For example, behaviorists posited that the brain operates as a blank slate, a *tabula*
4 *rasa*, eschewing innate predispositions. An evolutionary perspective, in contrast, views
5 the brain as a collection of adaptive mechanisms, each designed by evolution to solve
6 problems that recurred throughout our evolutionary history. Plotkin offers some
7 interesting insights on why behaviorism had such a firm grip on academic psychologists
8 and the public at large. In academic and scientific circles, logical positivism was in its
9 heyday. It emphasized linking theoretical concepts with identifiable, measurable
10 operations; behaviorism's positivist program (focusing only on observable behavior)
11 helped a fledgling psychology gain scientific respectability. Behaviorism also fit neatly
12 into the zeitgeist of the time. The US was "a society that believed in getting things done
13 and hang the explanation" (p. 59). There are several other possibilities that Plotkin
14 overlooked. One was America's ethos of equality—any kid can grow up to be president,
15 given the right opportunities and training. Behaviorism was a natural here, and Watson's
16 behaviorism had great appeal to parents and teachers. Also, the rise of industrialism and
17 mass society created social unrest. Behaviorism offered the (false) promise that experts
18 could engineer problems out of organizations or whole societies.

³ Behaviorism's equipotentiality principle (that all stimuli have equal effects on learning) was so strongly ingrained in mainstream psychology that John Garcia's early work on the differential impact of stimuli on different species was summarily rejected by leading journals in the 1960s, and it only saw the light of day in relatively obscure journals.

Cognitive psychology eclipsed behaviorism in the 1970s and 1980s and, unlike behaviorism, acknowledged the importance of mental processes. However, cognitive psychology shared several assumptions with behaviorism that were antithetical to an evolutionary perspective: that the mind was a *tabula rasa* and a general problem solving mechanism. Also, the voluminous research on decision-making biases suggested that cognitive psychologists held additional assumptions about the mind that were incompatible with an evolutionary perspective—for example, that humans are poor decision makers (Krueger & Funder, in press).

1 The wrongheaded association of evolutionary theory with social Darwinism and
2 eugenics also helped to close off discourse and scientific progress in evolutionary
3 approaches to psychology, but not until these movements had run their course. The early
4 20th century witnessed a national debate about the causes of and solutions to social
5 problems and economic inequality. In one camp were the muckrakers, attributing social
6 problems to the environment and advocating social and economic changes to remedy
7 these problems; in the other camp were biological determinists, social Darwinists and
8 eugenicists. The social Darwinists (a term coined by the sociologist Herbert Spencer; not
9 by Darwin, who was not a social Darwinist) attributed differences in socio-economic
10 status to biological differences (people who were more biologically "fit" would naturally
11 rise to the top of the pecking order, "survival of the fittest"). Eugenics (a term coined by
12 Galton) advocated selective breeding as a means to improve society (see, e.g., Brookes,
13 2004). These were not fringe movements lead by crackpots; they were popular social
14 philosophies articulated by prominent intellectuals and academics (e.g., Yerkes at
15 Harvard; Thorndike at Columbia).⁴ These ideas arose when the state of evolutionary
16 theory was still relatively unsophisticated, and the understanding of evolutionary theory
17 by social Darwinists and eugenicists was even less sophisticated. For example, equating
18 survival of the fittest with socio-economic status reveals a misunderstanding of
19 Darwinian fitness. Fitness in classical Darwinian theory refers to the number of offspring
20 produced, not standing in the pecking order. Similarly, the eugenicists' goal of improving
21 the human race by selective breeding indicated a fundamental misunderstanding of the
22 role of unplanned variation in evolution. Variation is the engine that drives evolution and

⁴ Courses on eugenics were taught at the time at Harvard, MIT, and Chicago. By 1930, laws mandating sterilization of criminals and the insane had been introduced in 30 states.

1 adaptation: there can be no evolution without variation. Eugenics, by narrowing variation,
2 would actually reduce potentially adaptive variations.⁵ By the 1930s, support for these
3 movements began to wane, and they were soon reviled. As social Darwinism and
4 eugenics became more and more criticized, one unintended consequence was that *any*
5 evolutionary perspective on human nature became tainted by guilt by association. Of
6 course, scientific theories have always been used (sometimes foolishly) to support
7 ideologies of all sorts. Socialism and communism, for example, hold many assumptions
8 of cultural determinism. Yet, it is curious that despite the horrors of communist regimes
9 and their failed economies, cultural determinism has not suffered much guilt-by-
10 association with this totalitarian ideology.

11 The antipathy towards social Darwinism and eugenics figured prominently in the
12 development of cultural anthropology, a discipline that became a nemesis of evolutionary
13 thought in psychology and in the social sciences. Franz Boas, the founding father of
14 cultural anthropology, forged a break between the biological and cultural. Boas was a
15 liberal humanist who was also distrustful of the theory of natural selection, and he argued
16 that cultural expressions and the science of culture had little to do with biology. Margaret
17 Mead's description of life in Samoa (1928) was an example of Boas' extreme cultural
18 determinism. Mead, one of Boas' students, argued that psychological sex differences
19 were purely cultural. She described a culture in which there was no adolescent *Sturm und*
20 *Drang*, no rape or war, no frigidity or sexual jealousy. According to Mead, the Samoan
21 people were peaceful, sexually uninhibited, and happy. This was possible because of a

⁵ The gene that is linked to attention deficit hyperactivity disorder (ADHD) appears to have been caused by a mutation that occurred about 50,000 years ago. This mutation, which triggers restlessness and novelty-seeking, is now thought to have been a cause of the migration of *Homo Sapiens* out of Africa and the subsequent populating of the globe, which also began about 50,000 years ago (see Bridgeman, 2003, pp. 307 ff.).

1 peaceful culture and a permissive style of child rearing *and* because of the malleability of
2 human nature—happy and peaceful cultures lead to happy and peaceful people.⁶ Mead's
3 book had a profound impact on the social sciences, and her view on sex differences has
4 long held sway in the social sciences and continues to have strong support, despite
5 neurophysiological evidence to the contrary (Colarelli, Spranger, & Alampay, in press;
6 Geary, 2000; Taylor, Klein, Lewis, Gruenewald, Gurung, & Updegraff, 2000).

7 Finally, linking evolutionary concepts to psychological processes was difficult
8 because of early theoretical and methodological limitations. They precluded research in
9 which solid theoretical principles drove empirical studies and causal explanation. For
10 example, some of the initial associations between psychology and evolutionary thought
11 found a common ground in an impoverished "instinct" theory, which soon became
12 discredited because of its weak theoretical foundation. (Early instinct theory involved
13 calling a commonly observed behavior an "instinct," without reference to environmental
14 inputs or to conditions that may have lead to the evolution of an instinct.) Furthermore,
15 biologists were just beginning to understand the nature of genes, so early evolutionary
16 perspectives tended toward a crude genetic determinism or what Plotkin calls a "primitive
17 biologism" (p. 68). This included the misguided ideas that all phenotypic behavior and
18 complex traits (e.g., intelligence) were linked to single genes, and that genes invariantly
19 determined phenotypic traits and behaviors. It was not until the last part of the twentieth
20 century that methodologies emerged which enabled psychologists to study how brain and

⁶ A half a century after Mead conducted her research in Samoa, Derek Freeman (1999) went to Samoa and interviewed Mead's original informants who were still alive. They informed Freeman that they had been hoaxing Mead—making up stories about life on Samoa. The Samoans, it turns out, are like the rest of us. They experience sexual jealousy, have conflicts over resources, and experience teenage angst.

1 endocrine mechanisms influenced psychological processes and these in turn enabled
2 researchers to gain a better understanding of how genes interact with the environment.

3 Plotkin traces the reemergence of evolutionary thought in psychology to ethology
4 and sociobiology. After the Second World War, a group of European ethologists began to
5 make real theoretical and empirical advances in evolutionary perspectives on behavior
6 with their studies of animals in natural environments.⁷ A core assumption of the
7 ethologists was that instincts evolved in the same manner as morphological features—
8 that is, instincts evolved because they were somehow adaptive for survival and
9 reproduction. Therefore, to understand the genesis and adaptive significance of particular
10 instincts, behavior needed to be studied in environments in which it evolved.

11 Sociobiology refers to the work in a variety of disciplines that takes a "gene's-
12 eye" view of behavior. Sociobiology was not initially concerned with how a particular
13 group of genes might "cause" a particular behavior. Rather, sociobiologists were
14 interested in how certain classes of social behavior – such as altruism – could be
15 understood from the perspective of enhancing an animal's chance of passing on his or her
16 genes into future generations. Biologists had long been puzzled by the apparent anomaly
17 of altruism among the sterile insects: individuals sacrificing themselves without
18 apparently gaining any reproductive advantage. Sociobiology emerged to fill that gap.
19 Did individuals sacrifice themselves for the "good of the group" or could altruism be
20 understood from the perspective of the individual or "selfish gene." A young English
21 biologist, William Hamilton, developed an elegant mathematical model, based on the
22 behavior of the social insects, showing that altruism could be explained by the concept of

⁷ Three ethologists from this group (Konrad Lorenz, Niko Tinbergen, and Karl von Frisch) were jointly awarded the Nobel Prize in medicine in 1973.

1 *inclusive* fitness. The core ideas here were: (1) genes are the central unit of evolution, and
2 (2) the survival of genes, rather than individuals, is the key to understanding altruism.
3 Hamilton introduced the concept of *inclusive* fitness—that an individual could propagate
4 his or her genes through reproduction *and* by helping kin survive and reproduce. From
5 the gene's-eye view, altruistic behavior towards kin made sense because helping kin
6 increases the probability that some of one's own genes will be passed on into the future.

7 Evolutionary psychology emerged in the 1980s from the intellectual background
8 of ethology and sociobiology, as well as from a reaction to the cultural determinism that
9 was dominating psychology and the social sciences. Plotkin devotes one small chapter to
10 evolutionary psychology, admitting that because it emerged in the 1980s it is too early to
11 attempt an historical treatment of it. Given the American public's hostile attitude toward
12 human evolution (about 75% of the American public believes in the biblical account of
13 creation) and social scientists' hostility toward biological explanations of social behavior,
14 it is not surprising that evolutionary psychology received a cool reception in many
15 quarters. However, a number of factors made the 1980s an opportune time for
16 evolutionary psychology to come into its own. Behaviorism collapsed. The work by
17 Naom Chomsky and John Garcia supporting biological constraints on learning finally
18 gained acceptance. Studies appeared in the literature showing that young infants had
19 remarkable, apparently innate, cognitive capabilities (numerical competence, elementary
20 physical causality, facial and odor recognition). Research in cognitive psychology and
21 decision-making began to question the long-standing assumptions about the fallible mind
22 and biased decision-making. This "new rationalism" suggested that much of what was
23 thought to be learned was probably innate, that the mind contained a variety of

1 information processing modules, and that many of the so-called biases in information
2 processing and seemingly maladaptive behaviors could be explained as mismatches
3 between our evolved psychology and the modern environment.

4 Evolutionary psychology is important and relevant to I/O psychology. At a
5 general level, all of our interventions are based on implicit assumptions about human
6 nature. To the extent that our interventions are based on faulty assumptions, they are
7 unlikely to be effective. For example, much of the training literature tends to assume that
8 the training context and medium have relatively little effect on learning (the most
9 important part of training design is teaching the appropriate task or content). These
10 assumptions led to the misguided enthusiasm over web-based training. An evolutionary
11 psychological perspective would suggest that we remain skeptical of equating training via
12 the web with traditional methods. Human beings have been learning in *social*
13 environments for thousands of years, and therefore humans have probably developed
14 learning mechanisms that are more in tune with learning in a social context than learning
15 in isolation by looking at a computer monitor (Colarelli, 2003; Geary 1995). This is not
16 to say that there are no advantages to web-based training; rather, by providing a better
17 understanding of how humans learn, an evolutionary approach can help applied
18 psychologists design better training interventions and more effective web applications.

19 Any discussion of the possibility of innate differences between men and women
20 with respect to anything but childbearing opens the door to being labeled a sexist. The
21 party line among *uber*-feminists and most academics is that differences in social behavior
22 are a result of socialization practices. Yet considerable evidence is accumulating that at
23 least *some* sex differences in social behavior are due to biological differences, and these

1 evolved because of the different social and reproductive problems that men and women
2 faced over millennia (Taylor, et al., 2000). Consider, for example, sex differences in
3 power and status. The vast majority of political and business leaders are male. Why
4 should this be so and what can be done to change the situation? Traditional thinking in
5 psychology has followed the SSSM—that this is all due to socialization. If we change
6 socialization practices, we should get changes in the number of women represented in
7 positions of power.

8 While not denying the role of socialization, an evolutionary psychological
9 approach would *also* ask: could sex differences in power and influence have been
10 adaptive during the Pleistocene, is there any evidence that these differences resulted from
11 heritable biological mechanisms? If *some* differences are biological, then interventions
12 that take biological factors into account are likely to result in more *increases* in women's
13 participation in top management than interventions that assume all that is needed is
14 identical socialization practices (Colarelli, et al., in press).⁸ Differences in mechanisms do
15 not necessarily imply differences in results. However, it is important to take differences
16 into account when designing interventions.

17 I/O psychologists with an evolutionary psychological perspective would be more
18 likely to emphasize the role of kin selection (i.e., altruistic behavior towards kin) in the
19 workplace than is currently the case. For example, almost nothing is written about family
20 business dynamics in mainstream I/O journals, yet family businesses constitute a large
21 proportion of the businesses in the US—from 40 to 95%, depending on how one counts.

⁸ The increases in the number of athletic injuries to female athletes is an example of detrimental consequences of training practices based on erroneous assumptions about biological sameness between the sexes. Women and men have morphological differences in bone structure, which can result in significant injuries to female athletes if training practices are not adjusted for these sex differences (Hutchinson & Ireland, 1995).

1 One would expect that kin selection would play an important part in the selection,
2 training, development, performance management, and promotion of employees in family
3 businesses—with family employees being treated quite differently than non-family
4 employees (Spranger, 2005; Yang, Colarelli, & Han, 2005). Work-related motivation tied
5 to kin selection would be a natural for evolutionarily-oriented I/O psychologists—for
6 example, working to feed one's family or to gain status to enhance mating opportunities.
7 The growing interest in work-family issues implicitly acknowledges kin selection;
8 however, explicitly including kin selection would add a richer and more powerful
9 theoretical foundation to this important area in I/O psychology.

10 Evolutionary theory and evolutionary psychology are natural partners for I/O
11 psychology. Many of the basic areas of evolutionary psychology fit with the classic areas
12 in I/O psychology: variation and individual differences, learning mechanisms, work and
13 family, dominance hierarchies, sex differences, fairness, the pursuit of status and wealth,
14 and the relationships among self-interest, groups, and organizational structures. For those
15 of you interesting in testing the waters, Plotkin's *Evolutionary Thought in Psychology: A*
16 *Brief History* offers an engaging introduction. For any psychologist interested in the
17 history of ideas – and how intellectual currents, politics, and chance events can affect
18 scientific paradigms – it is a must read. Its lasting value is that it provides a lucid and
19 well-documented history of the intellectually shameful exclusion of evolutionary thought
20 in psychological theory during most of the twentieth century. Thankfully, that exclusion
21 is being remedied in the 21st century.

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