HANDBOOK OF PERSONOLOGY
AND PSYCHOPATHOLOGY

Edited by
Stephen Strack

John Wiley & Sons, Inc.
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This volume comprises essays written in honor of 
Theodore Millon
Architect of, and advocate for, a comprehensive, 
integrated science of personology and psychopathology
With admiration and gratitude from his students, 
colleagues, and friends

“A lerer iz vi a boym vos trogt gute frukht”
(A teacher is like a tree that bears good fruit)
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Preface

Recorded history informs us that as long as human beings have had free time to contemplate matters beyond those of basic survival, they have been acutely interested in understanding the nature of their own behavior. Early writers from Greece, for example, were impressed by numerous redundancies among people of the same and different cultures, but they also noted specific abnormalities as well as systematic differences between groups and individuals. In trying to grasp the nature of these similarities, differences, and abnormalities, early personologists (e.g., Heraclitus, Socrates, Hippocrates, Aristotle, Galen) created theories that explained human behavior as a function of ethereal manipulation, social pressures, personal choices, and physical characteristics such as the quantity of fluids or “humors” in the body (Durant, 1939; Hergenhahn, 1992; Russell, 1945).

Progress in understanding human behavior from a scientific perspective took a giant leap forward following Darwin’s (1859) work on the evolution of species. Although Darwin did not elaborate on the origin of group and individual differences at the phenotypic level, his contemporaries and followers (e.g., Galton, Helmholtz, Wundt, James) helped create the fledgling science of psychology from philosophy as the study of human behavior. In the late nineteenth and early twentieth centuries, scientific and technological advances helped psychologists develop complex explanations for behavior as stemming from a mixture of evolutionary, biological, social, and personal variables (Goodwin, 1998; Koch & Leary, 1992).

Based on his training in neurology, clinical observations of neurotic patients, and appreciation of Darwinian theory, Sigmund Freud (1895/1966, 1915/1957) sought to develop a comprehensive model of normal and abnormal human behavior based on neurological evolution. Although many aspects of Freud’s neurobiological model did not take hold among his contemporaries, his method of understanding behavior from a psychodynamic perspective did, and later spawned rival paradigms that viewed behavior as stemming from social, familial, interpersonal, cognitive, and learning factors (e.g., Freud, 1923/1961; Goodwin, 1998; Hergenhahn, 1992).

Like Darwin, Freud provided ideas that allowed people from many disciplines to discuss human behavior from a completely new viewpoint. Freud could explain normal as well as abnormal behavior, and he could treat people with a variety of ailments using his psychoanalytic methods. However, his ideas seemed to explain some behaviors better than others; he lacked a comprehensive taxonomy; and he discouraged experimental validation.

The study of human behavior went in many directions after Freud. Gordon Allport (1937) and Henry Murray (1938) developed a science of personology that was independent of abnormal behavior. Psychiatry continued to be influenced by psychodynamic thinkers like Fenichel (1945) and Reich (1949) but never lost its focus on taxonomy and
the biological observations of those such as Kraepelin (1904), Bleuler (1924), Kretschmer (1925), and Jaspers (1948).

World War II shifted the heart of science to the United States and to theories that could explain behavior from sociocultural and interpersonal perspectives (e.g., Horney, Fromm, Sullivan). Another consequence of WW II was the proliferation of nonmedically trained mental health practitioners, particularly clinical psychologists, who helped shape the future of mental health theory and treatment.

By the last quarter of the twentieth century, students of human behavior could pick from dozens of theories that explained various forms of normal and abnormal functioning from intrapsychic, biological, behavioral, interpersonal, phenomenological, and sociocultural perspectives (Hall & Lindzey, 1979). Too often these theories focused on specific phenomena or global aspects of functioning, normal or abnormal behavior, and either etiology or treatment of dysfunction. In many ways, the person got lost in an effort to explain behavioral details or outside shaping forces.

Renewed interest in the interface between normal and abnormal behavior, personology and psychopathology was ushered in by the atheoretical and multiaxial format of the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III; American Psychiatric Association, 1980). For the first time, psychiatric pathology was separated from specific etiology (e.g., psychodynamics) as well as from personality, medical illness, and psychosocial stressors. Mental health practitioners were asked to consider the pathology they were treating from whatever vantage point they felt was appropriate, and in the context of the whole person.

Just as Darwin and Freud had galvanized the attention of scientists from many walks of life and created a flurry of new ideas and research, DSM-III radically changed the way behavioral scientists conducted themselves in the clinic and laboratory. They started examining the interface between normal and abnormal behavior, questioned the need for separate theories that focused on symptoms outside the scope of personality or health beyond the scope of pathology, and helped people begin to see the similarities in theories that previously seemed different. The hope of integrating ideas about the nature of human development, personality functioning, psychopathology, and treatment is again pushing through. People from different disciplines and schools of thought are now working toward a comprehensive, biopsychosocial understanding of normal and abnormal behavior that can encompass, or be compatible with, the many perspectives that have shown promise in the past, including biological, psychodynamic, sociocultural, and interpersonal (Strack & Lorr, 1994).

At the beginning of the twenty-first century, the study of personology and psychopathology has moved beyond the confines of the DSM (Livesley, 2001). The DSM model does not offer an empirically based taxonomy, and it has kept its categorical distinction between normality and pathology in the face of scientific evidence that argues against this. But just as contemporary personologists have moved away from atheoretical, dualistic conceptions of human behavior, they no longer expect a single model of behavior to encompass the vast array of human features, both normal and abnormal. There is greater tolerance for, and interest in, dimensional conceptualizations of personality and psychopathology that have empirical backing, as well as models that predict and demonstrate discontinuity in some behaviors and disorders.

A welcome addition to contemporary thinking is the idea of integration without the need for procrustean solutions to areas of disagreement (Livesley, 1995, 2001; Millon, 1990). This is perhaps best represented in the realm of psychotherapy. Psychological
observers were aware of the similarities between different therapeutic modalities as early as the 1930s (e.g., Rosenzweig, 1936), but until proponents of various schools could boast empirical validation during the past several years, there did not seem to be enough common ground for practitioners to admit the obvious. Of course, integrating commonalities at a theoretical level is not as easy as noting conceptual similarities (Gold, 1996).

Among active theorists, perhaps none is more exemplary of the current effort to bring together knowledge of normal and abnormal human development than Theodore Millon. As early as 1969 (Millon, 1969/1983) he was advocating for the integration of various perspectives on personality and psychopathology in the interest of understanding personality disorders. His goal was to move beyond then current conceptions of behavior that focused on specific aspects of human functioning without reference to the whole person, to create a theory-driven system for understanding human behavior at the personologic level that would draw on the best ideas from psychology and adjacent disciplines. His thinking was based on the idea that “persons” are the only organically integrated system in the psychological domain, evolved through the millennia and inherently created as natural entities rather than culture-bound and experience-derived gestalts (Millon, 1999, 2003).

Coining the term *psychosynergy* for his effort, Millon (1999) has labored for over 35 years to resynthesize and integrate science, theory, classification, assessment, and therapy so that we will have a coherent system for understanding how people develop and live their lives, that is, think, feel, behave, love, work, relate, become ill, and get well.

This *Handbook* was conceived and developed by its contributors as an overview of the science of personology and psychopathology in recognition of the central—indeed seminal—role played by Theodore Millon in shaping the field as it exists today. A Festschrift, the volume is divided into six parts that reflect Millon’s blueprint for a clinical science: First, conceptual issues (Part I) are reviewed that help define the boundaries of theoretical models (Part II) designed to provide coherent, empirically supportable propositions that can then lead to coherent taxonomies and classification systems (Part III). The value of assessment methods (Part IV) can be gauged based on how well they operationalize the theory-derived classification systems that precede them. In Part V, there is a review of therapeutic techniques that were derived from coherent theories and taxonomies and integrated with appropriate assessment methods. Finally, in Part VI, there is a review of future perspectives.

In preparing their chapters, authors were asked to write for the growing number of mental health clinicians, researchers, and students who want to know about current directions in the field of personology and psychopathology, but who may be unfamiliar with some concepts and methods. In addition to providing an overview of their particular area of expertise, authors were asked to stretch themselves to help bridge existing gaps and to suggest avenues for future inquiry.

Theodore Millon’s (2003) dream of an integrated clinical science is far-reaching and ambitious, but it is not complete. The process of synthesis and integration must continue in order to yield the end result that he envisions: a multidisciplinary system founded on the universal laws of nature that coordinates psychological theory, a derivable taxonomic classification, a series of operational assessment tools, and a flexible yet integrated group of remediation techniques.

Until the last quarter of the twentieth century, traditional boundaries kept most researchers and clinicians within academic or applied frameworks, within the scope of normality or pathology, focusing on limited aspects of human behavior. Because of progress in defining the basic structures of personality and psychopathology, we are now seeing
cross-fertilization and a willingness to expand existing models and methods across traditional lines. The current scene is marked by enthusiasm and hope for a better grasp of how all people function as personologic entities. The chapters that follow provide ample food for thought. This book both informs readers of the array of ideas and findings in the area of personology and psychopathology and inspires new opinions and avenues for inquiry.

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PART I

*Conceptual Issues*
Charles Darwin's (1859) *Origin of Species* was published a few years before the emergence of psychology as a scientific discipline. One would expect that the theory of evolution would have had a major impact on shaping psychology. Clearly, there was some impact, but the history of evolutionary thinking in psychology is very complex, even convoluted, and a definitive history has not been written. Until recently, the major impact of evolution on psychology was through the genetic/heredity route, although there were also some influences on behavioral theories in psychology developed during the past century.

One reason for the complexity of the story of evolution in psychology is the complexity of the story of evolution in biology. Evolution by natural selection had no proximal explanatory mechanism for about 50 years, until the concept of the gene was well established. The mix of genes and natural selection was supposed to provide a "grand synthesis" for biology. However, to a considerable extent, the study of genetics has remained a discipline separate from other facets of evolutionary biology, especially behavioral biology. That same separation is manifest in psychology. To a considerable extent, behavioral genetics is a discipline apart from the more recent development of evolutionary psychology.

This chapter chronicles and remains faithful to the complexity of the main areas of contact between evolution and psychology. The first section provides a brief history of some of the connections between evolution and psychology since Darwin. Before tackling evolution and modern psychology, it is useful to examine evolutionary biology briefly, the task of the second major section. We will see that the reigning paradigm for a quarter-century did try to trace a direct sequence from controlling gene all the way to complex social behavior. There were many theoretical arguments in evolutionary biology. Two issues are surveyed to give the flavor of the controversies: the unit of selection and the evolution of sex. As we will see, evolutionary biology is in a continuing state of conceptual flux.

Against this background, current work in evolution and psychology is described under the two broad categories in which such work is done: behavioral genetics and evolutionary psychology. Behavioral genetics will not make sense to most people without a minimal understanding of basic genetics. Thus, a tutorial section, "Molecular Genetics and Evolution," precedes the section on behavioral genetics.
**EVOLUTION AND PSYCHOLOGY: A BRIEF HISTORY**

One line of thinking views evolution as permeating psychology from its beginning. Another view is that the major impact of evolutionary thinking is quite recent, occurring perhaps only 25 years or so ago.

In favor of the first view, Kimble and Wertheimer (1998) named Darwin as one of the top 20 psychologists of all time. Masterson (1998) referred to Darwin as the “father of evolutionary psychology,” noting a chapter on instinct in *Origins*. Further, Darwin’s *Expressions of Emotions in Man and Animals* (1872) clearly is of psychological interest, as is *The Descent of Man, and Selection in Relation to Sex* (1871/1981). An interesting volume on evolutionary thought in the United States, edited by Persons (1950), included an extensive chapter by E. G. Boring (1950). As Boring noted, Galton’s (1869) volume on the inheritance of genius stimulated an interest in individual differences and, indirectly, psychological testing. Although Germany had the most influence on the creation of experimental psychology in the United States, people such as William James and John Dewey were tremendously influenced by Darwin. In fact, Boring claimed that evolution permeated the development of functional psychology and pragmatism. Evolution also influenced the development of comparative psychology. The notion of evolution of mind became common currency, a theme strongly echoed in somewhat modern form by Kantor (1935).

Other interesting sources on the relations between psychology and evolution include Gruber (1998), Alexander (1992), and Glickman (1992). A fascinating article by Dewsbury (2002) described the “Chicago Five,” eminent psychologists trained under Karl Lashley at the University of Chicago from 1929 to 1935: Norman Maier, Theodore Schneirla, Frank Beach, Donald Hebb, and Krechevsky (later David Krech). Dewsbury discussed nine guiding principles loosely held by the Chicago Five. Almost all of the principles have an evolutionary halo. The two most explicit are numbers 4 and 8:

4. Understanding the evolution of mind and behavior in general and its emergent characteristics in particular, is important to psychology.

8. Behavioral development is an epigenetic process resulting from the continuous, dynamic interaction of genes, environment, and organisms. (pp. 25, 28)

The notion of epigenesis is a contentious issue in some areas of evolutionary biology (see Markos, 2002, for a history of the concept of epigenesis). The current strong emphasis on molecular biology tends to deify “the gene.” Biologists who work with whole organisms, especially developmental biologists, are more likely to lean toward an epigenetic approach.

The second view of evolution in psychology is that the influence of evolutionary thinking had little impact until E. O. Wilson’s (1975) *Sociobiology*. This controversial volume soon stimulated a huge literature (e.g., see Crawford, 1989; Crawford & Anderson, 1989; Crawford, Smith, & Krebs, 1987).

Despite the richness of literature noted above for the first view, my own impressionistic view is that after the onset of Watson’s behaviorism early in the twentieth century, psychology had a long dry spell of environmentalism, with the charge led primarily by several decades of learning theory. To test such impressions, I consulted the PsychINFO database for citation counts of several terms. The term “evolutionary theory” appeared in the database 638 times (as of February 5, 2003). From the beginning in 1887 through 1980, evolutionary theory appeared only 77 times. The pace picked up from 1981 to 1990 (132 times). From 1991 to February 2003, the term appeared 428 times. Clearly,
the interest in evolutionary theory has grown strongly in psychological literature, particularly over the past dozen years.

Other terms give a fuller picture. Psychologists were very interested in genetics; this term appeared 15,860 times. “Evolution” appeared 18,614 times, but the number doesn’t mean much because evolution is also used generically for change of any kind. Psychologists were relatively interested in sociobiology; the term appeared 735 times, more than for evolutionary theory. It seems clear that evolution is of rapidly growing interest in many areas of psychology and will increasingly affect psychological theorizing. In fact, it already has; the term “evolutionary psychology” appears to have been coined only in the 1980s (e.g., Tooby, 1988).

There are many ways that evolutionary concepts may affect psychological theorizing. In fact, there will undoubtedly be much fragmentation in conceptual approaches over the next several years. Why? Because the various disciplines that form evolutionary biology are in fractious disagreement, ranging from the role of the gene to the place of the ecological habitat in evolution. Before focusing on psychology, it will be useful to make a modest excursion into biology.

**EVOLUTIONARY BIOLOGY: A BRIEF EXCURSION**

**The Reigning Paradigm**

As is famously known, Darwin had no mechanism to explain how natural selection led to species formation and change over time. He was unaware of Mendel’s experiments, and it was well into the twentieth century before genetics was joined with natural selection. During the 1930s, several volumes were published connecting genetics to Darwinian evolution, culminating in Dobzhansky’s (1937) *Genetics and The Origin of Species*, the defining volume of what was named the neo-Darwinian synthesis (Fisher, 1991). During the 1950s, molecular biology developed strongly, beginning with the discovery of the double helix form of the genome (Watson & Crick, 1953). Molecular biology gradually became a dominant intellectual force in the study of evolution. For biologists who viewed everything about an organism as under genetic control, evolution could be simply defined as relative change in gene frequency within a population over time. The processes for genetic change include gene mutation, genetic drift, migration of organisms across populations, and natural selection (construed as differential reproduction). Natural selection is by far the most important process for evolutionary change, according to most evolutionary biologists. Differential reproduction goes hand in hand with better adaptations in the environment in which selection occurs.

During the 1960s, a spate of theorizing about behavior and evolution (especially social behavior) occurred, stimulated by Hamilton’s (1964a, 1964b) pair of articles on the genetic evolution of social behavior. His concept of inclusive fitness allowed limited altruism toward genetic relatives, in addition to one’s own children. These relatives also carry some portion of one’s genes. So, genes may be propagated both by direct descendants and indirectly by other genetic relatives.

Following Hamilton’s papers, a flood of writing on social behavior occurred. Some of the more important work included the parental investment model (Trivers, 1972), evolution of reciprocal altruism (Trivers, 1971), parent-offspring conflict (e.g., Alexander, 1974), evolution of deception strategies (Alexander, 1974; Trivers, 1971), and the evolution of sexuality (Symons, 1979). This sequence of thought that traces a linear trend from
6 Conceptual Issues

the controlling gene to social behavior might be called the “hard-line” approach to the evolution of social behavior. Loosely construed, this approach is the “standard model” for behavioral evolution. This hard-line approach is, by and large, the set of assumptions for what became evolutionary psychology.

There have always been dissents from and questions about the standard model of organismic evolution. Two illustrations (from many possible ones) are discussed briefly: the unit of selection and the issue of why sexual reproduction evolved.

What Is the Unit of Selection?

The unit of selection is a time-honored debate in biology, a debate that is far from closure. For most of the era since Darwin, biologists considered the group, or perhaps the species, as the unit for which evolution selected. One main reason for this assumption was the existence of sexual reproduction. In a sense, sex is costly to the individual because only 50% of the genes are passed on. So sex must be for the benefit of the species, or group, because it speeds up the evolutionary process, presumably leading to ever better adaptations. An extreme version of group selection views a set of behaviors as benefiting the group (altruism) without any benefit to the individual (e.g., see Wynne-Edwards, 1962). After a few years, group selection theory was severely criticized. Although most biologists would allow for some kinds of group or kin selection, they were not viewed as important forces in evolution (e.g., Ridley, 1996).

In a very influential book, Williams (1966) argued for the individual organism as the basic unit of selection, with the gene as the underlying basis for that selection. The “unit” organism is basically selfish, although altruistic behavior is recognized. Much ink has been spilled over how evolution produces altruism out of the selfish organism. Dawkins (1976) skirted this issue by claiming the “selfish gene” as the basic unit of selection. Dawkins received much criticism for his view (see Stove, 1992, for a particularly pungent critique). It soon became clear, however, that Dawkins was using “gene” as an abstract concept to designate the unit that replicates. Dawkins (1982) made clear that any part of a chromosome, large or small, could serve as a replicator. The concept of replicator in turn spawned its own literature (e.g., see Richards, 2002). A good review is given by Godfrey-Smith (2000).

Waller (1999) proposed a more extreme version of Dawkins’s idea. Waller argued that the gene is not the unit of selection. Rather, the part of the genome concerned with reproduction is the basic unit of selection. It is assumed that these sexual reproduction genes (SRGs) are carried by the most successful members of a breeding group. Variation in genetic diversity provides SRGs the best prospects for future replication. The individual organism counts for nothing in this approach:

Proportionate transfers of parental genetic material have no relevance whatsoever. The fundamental effect of sexual reproduction is the perpetuation of SRGs. Individuals are puppets, not puppeteers. (p. 9)

One might suppose that SRGs are well-defined molecular units on a chromosome. Kimura (1983) developed a neutral theory of molecular evolution that argued that at the molecular level changes are random and more or less cancel out. Positive Darwinian selection must operate at a higher level, presumably at the organismic level. Neutral theory generated an explosion of literature. Current thinking appears to be that there can be non-neutral molecular evolution, but its nature is far from clear (e.g., Golding, 1994).
Among biologists, one can note a trend toward broader thinking, even as molecular biology continues to make great strides. Harold (2001), a cell biologist, tried to mediate between the extremes of molecularism and holism inherent in evolutionary and ecological biology. That mediating link is the cell. In a pithy chapter title, Harold (p. 99) made the important point that “it takes a cell to make a cell,” suggesting that the minimal unit that makes sense as life is the cell.

Even a hard-line biologist such as Maynard Smith (1998) has softened his original position. He argued that we need to consider both developmental genetics and the holistic tradition of self-organization with the complex behavior patterns that can emerge from dynamical systems. We must “pay attention to dynamical processes as well as to genetic control” (p. 2). Still more extreme, Avital and Jablonka (2000) argued that selection at the level of genes is not sufficient to account for behavior. Evolutionary explanations must take into account the transmission of learning across generations. Thus, the authors argue for a behavioral inheritance system as an addendum to Darwinism evolution.

The question of the unit of selection has not yet been answered. D. S. Wilson (2001) titled his review of L. Keller’s (1999) edited volume on levels of selection “Evolutionary Biology: Struggling to Escape Exclusively Individual Selection.” Many other volumes have been written on the issue of selection during the past two decades, with no resolution in sight. The concept of the gene has become equally nebulous. In an edited volume, Beurton, Falk, and Rheinberger (2000) presented many varied conceptions of the gene, so many, in fact, that Griffiths (2002) titled his review of the volume “Lost: One Gene Concept. Reward to Finder.” We must conclude that currently there is no consensus on what the unit of selection might be, and there is confusion about the nature of “the gene.” This lack of closure should be kept in mind when we examine possible contributions of evolution to psychological theory.

Evolution of Sex

When Williams (1966) and others settled on the individual as the unit of selection, sexual reproduction immediately became a problem. Why? In the backhanded language of biologists, sex is “expensive,” relative to asexual reproduction (e.g., Lewis, 1987). First, as noted previously, a sexual individual can pass on only 50% of its genetic material to its offspring. Second, the mixing of two gametes may easily lead to bad outcomes. Third, finding a suitable mate, reproducing, and caring for the young is very effortful. If genes are truly selfish, one would expect asexual reproduction to be more common.

A large literature was soon generated attempting to account for why sexual reproduction evolved. Williams (1975) presented several possible models; Maynard Smith (1978) also described a diverse set of models. No single model fully satisfied theorists (e.g., see Ghiselin, 1988), and by the 1990s, 20 different theories had been proposed to account for the evolution of sex (Fehr, 2001).

Three concepts are crucial in conceptualizing sex: genetic recombination, reproduction of offspring (or replication), and gender (Stearns, 1987). Recombination is not an automatic part of reproduction. “The production of offspring can occur sexually or asexually, with or without recombination” (Stearns, 1987, p. 16). For species with differing genders, gender “is the principal consequence of a history of sexual selection” (p. 17).

Sexual reproduction is viewed as an important adaptation by biologists. But exactly what its adaptive significance is no one can yet say. “No one has yet given a convincing, single-generation, micro-evolutionary and experimental demonstration of the advantages of sex, which must nevertheless exist” (Stearns, 1987, pp. 26–27). Space precludes discussion of
the many advantages theorized for sex. However, for each advantage, a disadvantage can be proposed. Some excellent readings are included in edited volumes by Abramson and Pinkerton (1995), Michod and Levin (1988), and Stearns (1987). One interesting theory of sex evolution, the parasite hypothesis, is explored in fascinating detail by the science writer Matt Ridley (e.g., 1993a, 1993b).

Despite the fact that biologists cannot yet explain why sex is an evolved adaptation, many writers nevertheless focus on reproduction as the overwhelming fact of life. For example, “Reproduction is the sole goal for which human beings are designed; everything else is a means to that end” (Ridley, 1993b, p. 4). Although not usually so boldly stated, this assumption is one major cornerstone of the new discipline of evolutionary psychology (e.g., Buss, 1999; Kenrick & Trost, 1989; Kirkpatrick, 1998).

We should tread carefully in accepting this assumption as fact. We should remember the “costs” of sexual reproduction. Taking the classic view of genes as relatively discrete units, the major cost of mating is that only half of our remaining genes will be passed on in each succeeding generation. Assuming mating as a random process over generations, in only 25 human generations (about 500 years) only 0.5^{25} of our genes would remain in our descendants, a very small fraction indeed! The notion of “genetic immortality” through one’s genes is a cultural myth (e.g., Hendrick, 2002). On the other hand, if we were bacteria, undergoing cell division every 20 minutes, we would soon have (assuming no mutations) 2^{25} copies of ourselves, or about 33 million genetic replicas. If we lust for genetic immortality, asexual reproduction is clearly the way to go. The notion of selfish genes and related ideas of replicators need serious rethinking. There is nothing wrong with some anthropomorphism: It can stimulate new ideas. But when we project such thinking to the molecular level, we are easily led astray, especially when such thinking is projected back to the everyday level of human life.

As these two excursions on units of selection and the evolution of sexuality make clear, evolutionary biology is in a state of continuous theoretical ferment and change. That is good for biology; disciplines must grow and change or become moribund. Such continuous change, however, can become a problem for a borrowing discipline such as psychology. To not fixate at a certain level of conceptual development in biology, psychologists must stay abreast of the ongoing changes in biological knowledge. To do so is extremely difficult, and the process may transform psychology into something other than what it is now. Whether such transformation is good or bad is ultimately a question of values.

EVOLUTIONARY IDEAS AND MODERN PSYCHOLOGY

I noted previously that genetics appeared in the PsychINFO database over 15,000 times. Clearly, psychology has historically had a keen interest in genetics, inheritance, and the like over the past century. Most of this interest has little to do with evolution per se; rather, the interest stems from possible heritability of behavioral patterns such as criminality, retardation, and mental illness.

The section that follows provides an overview of genetics and evolution; the second section deals with behavioral genetics; and the third section gives an overview of evolutionary psychology.

Molecular Genetics and Evolution

According to E. F. Keller (2000), the terms “genetics” and “gene” were coined in 1906 and 1909, respectively. At first, the gene was only a hypothetical entity, but by the