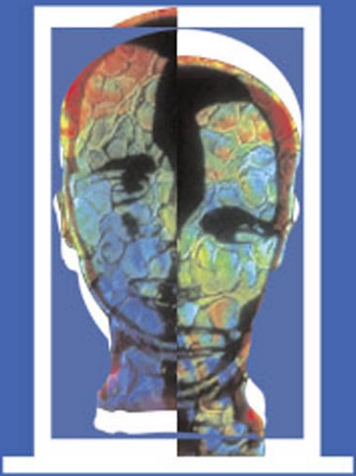
Second Edition

Differentiating Normal and Abnormal Personality



Stephen Strack, Editor

Differentiating Normal and Abnormal Personality

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Differentiating Normal and Abnormal Personality

Edition 2

Editor
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SPRINGER PUBLISHING COMPANY
New York

Springer Publishing Company, Inc.
11 West 42nd Street
New York, NY 10036

Acquisitions Editor: Sheri W. Sussman
Production Editor: Print Matters, Inc.
Cover design by Joanne Honigman
Typeset by Compset

06 07 08 09 10 / 5 4 3 2 1

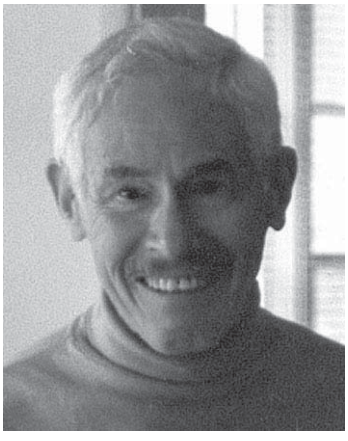
Library of Congress Cataloging-in-Publication Data

Differentiating normal and abnormal personality / Stephen Strack, editor.—2nd ed.
p. cm.
Includes bibliographical references and indexes.
ISBN 0-8261-3206-5
1. Personality tests. 2. Personality disorders—Diagnosis. 3. Personality assessment. I. Strack, Stephen.

BF698.5.D54 2006
155.2'8—dc22
2005057903

Printed in the United States of America by Maple-Vail Book Manufacturing Group.

This book is dedicated
to the memory of Maurice Lorr (1910–1998),
gentle giant in the field of personality psychology.



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Foreword

This second edition of *Differentiating Normal and Abnormal Personality* is a timely sequel to its distinguished predecessor published a dozen years ago. Based on my own reading, I can say that Dr. Strack and his co-authors have given us a thoroughly and thoughtfully updated revision. It surveys, as intended, three connected subjects: (a) major current theories about the contrasts, continuities, and commonalities between normal and abnormal personality; (b) potentially powerful analytic methods for future explorations and developments; and (c) available assessment instruments intended to map the basic individual differences defining this vast domain.

I expect the information-rich, yet concisely written, chapters of this book will motivate professionals, as they did in my case, to reflect on recent developments and ponder future trends and changes. However, as Dr. Strack stresses in his Introduction, this volume is definitely also written to be "accessible to neophytes." Those who are ready to explore and appraise diverse perspectives and approaches with open minds and energy will find this to be true.

In my Foreword to the first edition of this book, I took note of the variety of viewpoints found in it. The same holds for this second edition. Striking pluralism continues to characterize the field of normal–abnormal personality. Given its basic subject matter, namely, human nature viewed from the perspective of its marked adaptive and maladaptive range, and given the many different ways an inventive thinker can make sense of her observations by initially focusing on different salient aspects, the existing diversity of viewpoints and methods cannot be surprising. I also noted that a personality psychology harboring a wide variety of perspectives might worry psychologists who wish it to be a cumulatively progressive discipline but fear that divisions will compromise its credibility.

But diverse models provide opportunities for empirical comparisons allowing informed choices,which can be especially consequential if the subject matter itself is important. In fact, had there been no alternative models we would have had to invent them. Vigorous and repeated advocacy of a single favorite model, while admissible if it is reasonably plausible, is not enough (Paul Meehl once told me that the great philosopher of science Paul Feyerabend called it the Big Mouth strategy). And certainly, advancing one's model as if there were no serious alternatives would bring back the cultism of earlier days.

Furthermore, the increasing emphasis on "evidence-based practice," including evidence-based assessment, reminds us that comparative evaluations of alternative

approaches are critical not only to the continued health and growth of personality psychology as a scientific discipline but also to its acceptance as a societally useful enterprise. The two concerns are related. Demonstrated comparative usefulness in diverse real-world settings confers greater credibility on the underlying constructs.

As Dr. Strack points out, very few rigorous and potentially decisive "head-to-head" comparisons have so far appeared in the literature. Such studies are much needed. The tripartite organization of this book (and of its predecessor) underscores the value of combining conceptual creativity, the use of strong methods for modeling and testing one's conceptions, and the development of measures that implement these constructs in real-world settings. It instructs the reader that all three are essential to maximally informative and decisive comparisons. The built-in endorsement of this integrative three-pronged approach is one of its important contributions.

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Introduction

Study of the interface between normal and abnormal personality was brought center stage following publication in 1980 of the third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-III*; American Psychiatric Association, 1980). There, for the first time, personality was separated from other mental disorders, and clinicians were asked to consider additional forms of psychiatric pathology (e.g., depression) in the context of their patients' enduring patterns of experience and behavior. *DSM-III* and subsequent editions (now *DSM-IV-TR*; American Psychiatric Association, 2000) authorized clinicians to diagnose personality disorders (PDs), not normal personality styles, but definitional criteria for PDs assumed knowledge of healthy functioning:

> Personality traits are enduring patterns of perceiving, relating to, and thinking about the environment and oneself that are exhibited in a wide range of social and personal contexts. Only when personality traits are inflexible and maladaptive and cause significant functional impairment or subjective distress, do they constitute Personality Disorders. (American Psychiatric Association, 2000, p. 686)

The personality types diagnosed as disorders in the current manual (*DSM-IV-TR;* American Psychiatric Association, 2000) were not derived from an empirically based taxonomy or comprehensive theory. Rather, they are the product of a consensus of opinion among the scientists and practitioners who made up the PDs work group authorized by the American Psychiatric Association to develop Axis II. Reports from those who participated in the work groups for *DSM-III* (Millon, 1981) and *DSM-IV* (Livesley, 1995) indicated that their decisions about which PDs to include were informed by then current summaries of personality theory and empirical research. For example, the *DSM-IV* PD work group used empirically based reports to become informed about such issues as definitional clarity of the PDs, overlap and relationship with each other, and the appropriateness of categorical versus dimensional classification. Extensive literature searches were conducted, and both published and unpublished data were scrutinized (in some cases they were reanalyzed). Although field trials were advocated, only one was actually carried out (for the antisocial disorder), and it proved to be controversial. The reports that were issued skillfully documented existing problems, but minimal changes were actually made because the task force was asked to be conservative and to make changes

only when clear empirical support was available. Because most of the research directly relevant to the *DSM* was begun after 1980, there were few opportunities to make research-based calls for change (Livesley, 1995).

By the standards of most scientists, Axis II of the *DSM* remains a failure in many respects. It is not a taxonomy because it lacks a coherent structure and a sound empirical base. There are still many problems with definition, overlap of diagnostic criteria, and differentiation of PDs from normal personality. There is amazing agreement about these problems (see Kupfer, First, & Regier, 2002; Widiger & Simonsen, 2005). Essentially all believe that, in general, personality style is more a matter of degree than kind, meaning that dimensionalized traits are more useful for understanding personality than categorical distinctions. They argue that a sound foundation is needed to conceptualize the nature and range of PDs, and that diagnostic criteria must be linked more closely than they are now to their definitional base as pervasive, inflexible, and maladaptive patterns of feelings, thoughts, and behaviors.

The path to DSM-V is clear. We are searching for an empirically validated taxonomy that will encompass the range of personalities seen in the clinic, an articulate set of diagnostic criteria that includes a rationale for fuzzy boundaries and inevitable overlap, and a clear understanding of the relationship between normal and abnormal personality functioning (Livesley, 2001a; Kupfer, First, & Regier, 2002; Widiger & Simonsen, 2005).

The purpose of this book is to inform readers about the central issues that are now being addressed by researchers and clinicians in the realm of normal–abnormal personality, with the aim of providing individuals new to this area some of the basic tools they need to become participants in this important area of scientific inquiry. Written with graduate students and novice professionals in mind, contributors were asked to provide state-of-the-art summaries of their topic areas. They were instructed not to simply report on their subject matter, but to *teach* what is essential and important so that readers can become comfortable with terminology, ideas, and methods that are unique to this scientific arena.

Divided into three parts, the volume offers an overview of major theories, statistical methods, and measurement instruments being used by today's researchers in their quest to understand and differentiate normal and abnormal personality. Part I, Theoretical Perspectives, covers seven influential models of personality and psychopathology that take a variety of perspectives in addressing their common subject matter; that is, dimensional, categorical, interpersonal, cognitive, biological, and evolutionary. Part II, Methodology, offers accessible introductions to four statistical methods that have proved useful in answering many questions about taxonomy, diagnosis, similarities and differences between normal and abnormal personality, and the genetic and environmental influences that cause some people to develop PDs when others do not. To assist beginning researchers, the first chapter of Part II identifies problems and pitfalls that commonly face those who design empirical studies in the realm of normal–abnormal personality. Part III, Measurement and Assessment, includes empirically based introductions to five widely used instruments for assessing normal–abnormal personality, and a review of measures used to study the interpersonal circumplex. Although self-report questionnaires are clearly the most popular type of instrument employed by today's researchers, interviews and performance-based assessments are also important because of the unique behavioral samples they yield. These methods are highlighted in a chapter on

the Rorschach, and the first chapter of Part III that discusses a variety of structured and semi-structured interviews as well as some important issues to consider when selecting instruments to measure various personality traits, types, and styles.

Normal and Abnormal Personality in Historical Context

Anthropologists and sociologists speculate that the behavioral consistencies we refer to as *personality* were recognized by the prehistoric peoples who formed the first stable groups and societies. Philosophical accounts of individual differences in human character appeared over 2500 years ago (e.g., Thales, Empedocles, Plato), and by the time of Christ several writers from Greece (e.g., Heraclitus, Socrates, Hippocrates, Aristotle, Galen) had created sophisticated theories that explained normal and abnormal behaviors as a function of ethereal manipulation, social pressures, personal choices, and physical characteristics such as the quantity of fluids or "humors" in the body. Although many of the observations made by these pioneers were eclipsed long ago, several important ideas remain current in the twenty-first century; for example, the concepts of temperament, type, taxonomy, and continuity between normal and abnormal behaviors (Durant, 1939; Hergenhahn, 1992; Millon, 2004; Russell, 1945).

Progress in understanding personality from a scientific perspective took a giant leap forward following Darwin's (1859) discovery of the evolution of species. The process of natural selection provided an intriguing explanation for the development of complex behavior patterns as means for survival, adaptation, and procreation. Although Darwin did not elaborate on the origin of group and individual differences at the phenotypic (observed) 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 behavioral consistencies 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 behaviors 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 gave us 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 personality went in many directions after Freud. In America, the psychologists Gordon Allport (1937) and Henry Murray (1938) developed a science

of personology that was independent of abnormal behavior. European psychologists continued to be influenced by psychodynamic thinkers like Fenichel (1945) and Reich (1949), but some rejected Freud and his followers in favor of the taxonomic, biological observations of those such as Kraepelin (1904), Bleuler (1924), Kretschmer (1925), and Jaspers (1948). The comprehensive models of normal and abnormal personality begun in the 1930s and 1940s by Cattell (1946) and Eysenck (1947) exemplify this latter group.

The Second World War (WWII) shifted the heart of science to America as well as to theories that could explain behavior from sociocultural and interpersonal perspectives (e.g., Fromm, Horney, Sullivan). Another consequence of WWII 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; Lanyon & Goodstein, 1997). 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.

The atheoretical, multiaxial *DSM-III* (American Psychiatric Association, 1980) separated personality from other mental disorders and asked practitioners to consider the pathology they were treating from whatever vantage point they felt was appropriate, 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. Like deregulation in the modern economic marketplace, by cutting itself loose from the past *DSM-III* gave free reign to the scientific community to step in and fill the knowledge gaps created by the new system. This alone brought a stampade of new theorists and researchers into the area. But just as central is that by giving PDs their own axis, and asking clinicians to consider the stable trait characteristics of all their patients, personality was elevated to a level of importance it had never had before. A consequence of this is that many more patients were diagnosed with PDs (e.g., Loranger, 1990). With more PD patients to treat, better treatments were needed. More money poured into PD research, and of course, this attracted more people into the area.

After *DSM-III* researchers began focusing on the interface between normal and abnormal behaviors. They started questioning the need for separate theories that addressed 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 behaviors 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, 1994a).

In the first decade of the twenty-first century the study of personality has moved beyond the confines of the *DSM* (Livesley, 2001a; Widiger & Simonsen, 2005). As noted

previously, 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 (e.g., schizotypy; Lenzenweger & Korfine, 1992).

Developments in Normal–Abnormal Personality Science Since 1994

In our survey of the field in 1994 (Strack & Lorr, 1994a), Maurice Lorr and I marveled at the integrative process spawned by *DSM-III* (American Psychiatric Association, 1980). Previously segregated groups of theorists and researchers, academics and clinicians, psychologists and psychiatrists, were brought together on the new playing field of normal–abnormal personality. We envisioned a bright future where the entire spectrum of personality might eventually be understood, but we also recognized that the complex problems and issues facing researchers might take generations to resolve. We called for tolerance of diverse theories, methods, and measures, and greater clarity in how researchers specified their assumptions and goals.

At that time we made a number of specific suggestions for improving the field (Strack & Lorr, 1994b):

- Although a variety of personality theories and personality assessment measures were available to researchers, many showed lopsided treatment of either normal or abnormal functioning (i.e., focused on one side or the other but not both). We believed that these theories and measures should be expanded to encompass a full range of normal and abnormal personality features.
- Although considerable progress had been made in identifying a taxonomy of normal personality traits (e.g., Five-Factor Model [FFM]), there was no counterpart in the realm of PDs. We argued that researchers should focus their attention on mapping the domain of traits in clinical samples to see if a taxonomy could be developed that would encompass normal *and* abnormal personality.
- Although the stability of normal personality had been well documented by the 1990s, we did not know how PDs faired over time. We encouraged the start of longitudinal studies to map the course of PDs over the life span.
- Given the variety of competing personality theories, measures, and statistical techniques, studies should be launched to compare and contrast some of these in well-matched groups of normals and patients, to help determine which are best for addressing particular questions and issues.
- Because most people in the field agree on the problems in the *DSM* model of personality, *DSM-V* should be updated to reflect dimensional traits (not just personality categories) as well as the importance of normal personality in understanding psychiatric pathology.

In the past dozen years significant progress has been made in each of these areas. In fact, there have been enough new developments in theory and research to spawn several recent books and journal issues to review the progress (see, for example, Cloninger, 1999; Livesley, 2001; Strack, 2005; Widiger & Simonsen, 2005). Focusing on the improvement areas just presented, let me summarize the major changes.

Today's theories, models, and measures of normal–abnormal personality are improved over what they were a dozen years ago because many now focus more evenly on normal and abnormal behaviors. For example, Millon (1996, this volume, chapter 1) and Cloninger (2004, this volume, chapter 3) have expanded their views to include more sophisticated, detailed descriptions of the domain of normal behavior and how personality pathology is differentiated from it.[1] Interpersonal theory has also expanded (Pincus & Gurtman, this volume, chapter 4), and dimensional approaches like the Five-Factor Model (FFM) are now more thoroughly linked to traits in the clinical range (McCrae, this volume, chapter 2). We now have more, and better, measures of normal–abnormal personality, including interviews and self-report forms addressing whole theories and models, as well as specific personalities, traits, and subtraits. For reports on changes to major instruments, see the chapters in Part III as well as Clark and Harrison (2001), Widiger and Coker (2002), and Morey (2003).

In the previous edition of this book, Harkness and McNulty (1994) introduced their counterpart to the FFM, called the PSY-5 (Psychopathology-5), a set of five dimensions encompassing abnormal personality. Since then the PSY-5 have been incorporated as standard measures in the Minnesota Multiphasic Personality Inventory-2 (MMPI-2; Ben-Porath, this volume, chapter 14; Butcher et al., 2001), making them accessible to a wide audience of clinicians and researchers. As well, a number of studies have examined the dimensional trait structure of personality in both normal and abnormal populations. Findings indicate that there are at least four dimensions relevant across the board, namely neuroticism/emotional stability, agreeableness/disagreeableness, introversion/extraversion, and conscientiousness (Livesley, 2005; Mulder & Joyce, 1997; O'Connor & Dyce, 1998). Because major factor-based models of personality encompass these dimensions in one form or another, none have become obsolete as a consequence of the new findings. Much of the work now focuses on the hierarchy of traits needed to encompass normal-abnormal personality, that is, the combination of higher order and lower order traits and facets needed to address individual differences in behavior, cognition, and experience (Markon, Krueger, & Watson, 2005; Paunonen, 1998).

It is remarkable that in just 12 years a handful of longitudinal studies have been launched to examine the course of PDs over time (e.g., Gunderson, et al., 2000). Results of a 2-year study of avoidant, obsessive-compulsive, borderline, and schizotypal PDs gave us evidence for strong trait stability during this time interval "even though noteworthy changes in the categorical diagnosis . . . were observed in these patients." (Warner et al., 2004; p. 224). Other studies covering a 2- to 6-year time frame hint that at

[1]The personality theories of Cattell (e.g., 1946; Cattell & Bolton, 1969) and Eysenck (e.g., 1947, 1994) continue to be important in research on normal–abnormal personality, but the deaths of these pioneers in 1998 and 1997, respectively, put an end to additional theorizing, and thus possible changes since the last edition of this book. Readers can refer to chapters by Krug (1994, on Cattell) and Eysenck (1994) for a summary of their work as it applies to differentiating normal and abnormal personality.

least some PD traits, and psychosocial functioning in persons with borderline PD, are not as stable as previously thought (Shea & Yen, 2003; Zanarini, Frankenburg, Hennen, Reich, & Silk, 2005). We will have to wait another 5–10 years before data from longer periods of time can be analyzed and described.

Numerous comparative studies have been published since 1994 but very few of them provided head-to-head comparisons of theories, models, measures, and statistical techniques with normal and abnormal subjects, to predict specific outcomes. The most common among these were those assessing factor structure of traits in various samples (see above; Livesley, 2005; O'Connor & Dyce, 1998). Tests of specific hypotheses concerning genetic, biological, and molecular connections to personality traits and styles have also been relatively common (Kluger, Siegfried, & Ebstein, 2002; Livesley, 2005; Plomin & Caspi, 1999), but these have yielded conflicting, rather than clarifying, results. Except for the stable finding that broad personality traits have a genetic (heritable) basis, hypothesized connections between traits and molecular and biological variables have not been unequivocally borne out (Loehlin, 1992; Livesley, 2005). For example, a hypothesized link between novelty seeking and dopamine was tested in over 20 studies but no clear relationship has thus far emerged (Kluger, Siegfried, & Ebstein, 2002).

Axis II of the current diagnostic manual (*DSM-IV-TR*; American Psychiatric Association, 2000) was informed by research findings that accumulated after 1980, but a dimensional model was not adopted because there were many unanswered questions about such fundamental issues as how many traits should be included (Livesley, 1995, 2001). A concerted effort is now underway to see if a validated dimensional model of PDs can be used in place of the categorical model for *DSM-V* (Livesley, 2005; Widiger & Simonsen, 2005). Unfortunately, it appears that much less progress has been made in convincing clinical scientists of the importance of normal functioning for understanding PDs (Sabshin, 2005), so it seems unlikely at the moment that *DSM-V* will concern itself with nondisordered personalities, or criteria for what is normal and healthy.

This latter conclusion is bothersome because it is obvious to many that a definition of abnormality is incomplete without reference to what is normal. Perhaps because of its medical heritage psychiatry has avoided focusing on the domain of healthy functioning: "In psychiatry . . . the concepts of normality have been distinctly secondary to concepts of pathology" (Sabshin, 2005, p. 233). PDs are diagnosed when trait-related behaviors and experiences are viewed as *problematic* by the individual or *deviate markedly* from what is expected by those who make up his or her social milieu. This skirts the issue of what is normal, yet as Sabshin (2005), former Executive Director of the American Psychiatric Association, recognizes, "as psychiatry develops toward a more objectifiable etiological system in the twenty-first century, it must begin to find a more rational conceptual basis for normality" (p. 233). From early history personality models have addressed both normal and abnormal behaviors. The two realms of functioning seem to be inherently intertwined, so it seems highly unlikely that abnormal personality can ever be fully explained without reference to what is normal and healthy. As Widiger and Simonsen (2005) recently observed,

> The inclusion of normative, adaptive traits [in *DSM-V*] will facilitate the provision of a more comprehensive (and accurate) description of each patient's general personality structure; it will facilitate an integration of the diagnostic manual with basic science research on general

> personality structure; and it will facilitate treatment decisions through the recognition of traits that contribute to an understanding of treatment responsivity. (p. 126)

Concepts of Normality and Pathology

In the first edition of this book Maurice Lorr and I cited five models of normality–abnormality described by Offer and Sabshin (1991b) that encompass the viewpoints of practically all people in the field. The first of these conceptualizes *normality as health and pathology as illness.* Consistent with the traditional medical model, this perspective defines disorder by symptoms, syndromes, and physical and/or laboratory abnormalities. To be healthy is to be reasonably free of bothersome symptoms or disease—and this includes most people. Optimal or ideal functioning is not considered.

Normality as pathology, health as utopia is a viewpoint that conceptualizes the large majority of persons as being to some extent unhealthy. Health is defined as a perfect condition that few ever attain. According to this perspective, the average person falls considerably short of the ideal and is therefore viewed as suffering at least some pathology (e.g., possessing neurotic traits; Freud, 1937/1959).

Defining *normality as average and pathology as deviant* takes into account cultural definitions of what is normal and healthy and what is not. In this perspective, behavior is defined according to what is acceptable and unacceptable within a given culture. The term "normal" is applied to typical or average behavior, whereas the term "abnormal" is applied to behavior outside this range.

The fourth model, *normality and pathology as transactional systems,* defines health and disorder according to an individual's ability to change and adapt within a social system that also changes. Patterns of adjustment are observed over long periods of time. Normal, healthy behavior is ascribed to those who adapt and respond effectively to ongoing internal (biological, psychological) and external (social) demands. Abnormal, unhealthy behavior occurs in persons who fail to adapt or respond adequately.

Normality and pathology as pragmatism asserts that consensual definition determines what is normal and what is abnormal. Relativistic in nature, this model suggests that any condition we recognize and treat as unhealthy or maladaptive is abnormal, whereas conditions that rarely, if ever, bring people in for help are normal. According to this perspective, normality and pathology are in the eye of the beholder and a given culture may have several definitions of what is healthy and unhealthy.

In addition to these broad, philosophical perspectives, most clinicians and researchers hold one of four views concerning the interface between normal and abnormal personality. The first asserts that *normal and disordered personalities are categorically distinct*. Holders of this viewpoint assert that normal and abnormal personalities can be readily distinguished based on objective (ultimately biological or genetic) criteria. This perspective underlies the current system of *DSM* (American Psychiatric Association, 2000) PD diagnosis. A second point of view holds that *normal and abnormal personalities are dimensionally linked*; that is, they exist on the same plane and merge at some point on one or more sets of trait dimensions. Proponents of this viewpoint would agree that healthy and disordered personalities can sometimes be distinguished according to consensual

definitions, but that these definitions are inherently arbitrary because no sharp line of demarcation separates normal from abnormal.

Two additional perspectives combine elements of the categorical and dimensional approaches. The third viewpoint asserts that *quantitative differences in dimensional traits can produce qualitatively different normal and abnormal personality types*. For example, certain combinations of extraversion, introversion, and emotional stability can lead to habitual patterns of behavior that are so pervasive and distinct that they can be defined as particular normal and abnormal personality styles (e.g., compulsive, histrionic). A fourth view holds that *normal personality is based on dimensional traits, but abnormal personality results from biological processes and/or genetic elements that interact with these traits to produce categorically distinct disorders*. For example, the presence of a genetic marker for schizophrenia in an otherwise normal introvert might result in disturbed thinking, a predisposition to psychotic breakdowns, and a schizotypal PD.

The conceptual systems just described are not always mutually exclusive, and some researchers may espouse beliefs that are a hybrid mixture of different perspectives. As normal–abnormal personality research becomes more advanced and sophisticated, the empirical reality that emerges is likely to encompass multiple points of view. For example, current evidence suggests that most PDs can be accounted for by a set of dimensional traits, yet the field is also becoming convinced that schizotypal PDs develop only in persons who have a particular genetic makeup. Not all persons with this genetic makeup actually develop problems. Other factors, including dimensional traits and psychosocial stressors, are likely to be important in determining who becomes abnormal and who does not (Lenzenweger & Korfine, 1992; Livesley, 2001b, 2005; Millon, 1996).

Toward the Future

Readers of this book have an opportunity to make meaningful contributions to the rapidly evolving field of normal–abnormal personality. Although answers to some of our questions may take generations to obtain, studies conducted in this area over the next several years will significantly impact what is contained in the next diagnostic manual (*DSM-V*). Unlike many "closed" areas of science that require contributors to have highly specialized knowledge and experience, normal–abnormal personality is wide open to creative contributions by students and novice professionals. Many of the testable hypotheses, statistical methods, and measures are accessible to neophytes, and I particularly believe that open mindedness, which is a characteristic of people new to the field, is a good fit to the mélange of ideas and methods found here.

In this regard, I do not agree with a few observers who see a mounting crisis in the gap between our empirical knowledge base and the awesome requirements of a valid diagnostic manual. The extraordinary progress in the field since 1980, and especially during the past 10–12 years is, I believe, akin to what Kuhn (1996) called a *scientific revolution*. The old paradigms in this area do not fit with the data, and new ones are emerging to take their place. Shifts in science like this take time to evolve, and it is often impossible to see the process clearly until after the dust has settled. I trust that in another 10–15 years significant progress will be made in establishing the empirical foundation needed to have a valid taxonomy of normal and abnormal personality traits, styles, types, and disorders, as well as knowledge of

how people develop personality problems and how individuals with PDs can be restored to healthy functioning. Readers of this book will help pave the way.

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Acknowledgments

The death of Maurice Lorr, co-editor of the first edition of this book, in 1998, was a tremendous loss to the field of personality psychology and to me as an individual. Maury was a pioneer in developing psychometrically sound measures of psychopathology, interpersonal behavior, and mood, and for creating empirical models of psychotic syndromes and personality. Like many gifted persons, Maury had abundant talents. He was a sculptor who created a number of bronze busts of prominent people in psychology and psychiatry, as well as family members and friends. He was a wonderful teacher who inspired two generations of budding psychologists. He was a warm, gentle man who made people feel welcome and comfortable in his presence, and he had a great sense of humor.

With Maury gone a follow-up volume seemed to be out of the question. It was only through the encouragement and inspiration of colleagues and friends that this edition was made possible. First among these supporters was Dr. Joan Lorr, Maury's widow and a talented psychologist in her own right. Maury's spirit lives on in the pages of this book, and I thank Joan for her giving me thumbs-up. Dr. James Hennessy of Fordham University was a fan of the first edition. His steadfast interest in a second edition and help in formulating the content of, and target audience for, this volume, were important contributions. Thank you, Jim. Readers who are familiar with the first edition will note that many of the contributors returned to write follow-up pieces. This vote of confidence was very important to me during the early phases of the project, and I thank each of them for their support and advice: Y. S. Ben-Porath, G. Claridge, C. R. Cloninger, L. R. Goldberg, M. B. Gurtman, T. Millon, R. R. McCrae, L. C. Morey, A. L. Pincus, and T. A. Widiger. Finally, my chief at the VA Outpatient Clinic in Los Angeles since 1993, Dr. Gary Wolfe, helped in providing necessary resources for my work on both editions—including the most precious, time. Thank you, Gary.

1

Theoretical Perspectives

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Millon's Evolutionary Model for Unifying the Study of Normal and Abnormal Personality

Theodore Millon
Seth D. Grossman

This is a time of rapid scientific and clinical advancement, a time that seems propitious for ventures designed to bridge new ideas and syntheses. The intersection between the study of "psychopathology" and the study of "personality" is one of these spheres of significant intellectual activity and clinical responsibility. Theoretical formulations that bridge this intersection would represent a major and valued conceptual step, but to limit efforts to this junction alone will lead to overlooking the solid footings necessary for fundamental progress, and which are provided increasingly by more mature sciences (e.g., physics and evolutionary biology). By failing to coordinate propositions and constructs to principles and laws established in these advanced disciplines, psychological science will continue to float, so to speak, at its current level, an act that will ensure the need to return to this task another day.

The goal of this chapter is to connect the conceptual structure of personology to its foundations in the natural sciences. What is proposed herein is akin to Freud's (1895) abandoned *Project for a Scientific Psychology* and Wilson's (1975) highly controversial *Sociobiology*. Both were worthy endeavors to advance our understanding of human nature; this was to be done by exploring interconnections among disciplines that evolved ostensibly unrelated bodies of research and manifestly dissimilar languages.

It is necessary, we believe, to go beyond current conceptual boundaries in psychology, more specifically to explore carefully reasoned, as well as "intuitive" hypotheses that draw their principles, if not their substance, from more established, "adjacent" sciences. Not only may such steps bear new conceptual fruits, but also they may provide a foundation that can undergird and guide our own discipline's

explorations. Much of personology, no less psychology as a whole, remains adrift, divorced from broader spheres of scientific knowledge, isolated from firmly grounded, if not universal principles, leading one to continue building the patchwork quilt of concepts and data domains that characterize the field. Preoccupied with but a small part of the larger puzzle, or fearing accusations of reductionism, many fail thereby to draw on the rich possibilities to be found in other realms of scholarly pursuit. With few exceptions, cohering concepts that would connect this subject to those of its sister sciences have not been developed.

Despite the shortcomings of historic and contemporary theoretical schemas of most sciences, systematizing principles and abstract concepts can "facilitate a deeper seeing, a more penetrating vision that goes beyond superficial appearances to the order underlying them" (Bowers, 1977). For example, pre-Darwinian taxonomists such as Linnaeus limited themselves to "apparent" similarities and differences among animals as a means of constructing their categories. Darwin was not "seduced" by appearances. Rather, he sought to understand the principles by which overt features came about. His classifications were based not only on descriptive qualities but also on explanatory ones.

We see our task in the evolutionary model to be that of peeling back the manifest character of the observable personological and clinical world of overt behaviors, thoughts, and emotions, to jettison its veneer, and to expose its latent or underlying functions. In so doing we hope to discover and articulate a set of coherent principles and procedures that may advance and facilitate our understanding and assessment of both normal and abnormal subject domains. Some have said that our evolutionary model seeks "to read the mind of God"; we would rather acquire a somewhat less presumptuous characterization, that of seeking "to read the mind of human nature."

A unifying model for personology and psychopathology must coalesce the field's disparate schools of thought, not, however, in a haphazard way that simply identifies the alternatives or records their separate contributions, but in a manner that truly integrates each of these seemingly contradictory perspectives at a "deeper level," that is, one that synthesizes the alternative components intrinsically. Although, random, eclectic, or broad-based theories have, as their benefit, the advantages of open-mindedness and comprehensiveness, they are likely to be generative of little more than providing a measure of illusory psychic comfort. A substantively unifying paradigm will interweave fundamental relationships that exist among the cognitive, biological, intrapsychic, and behavioral components that are inherent in the person. This will, in effect, generate integrative theoretical and assessment strategies. This desirable advantage has been achieved partially in psychotherapy by efforts to employ combinatorial treatment approaches (e.g., CBT, pharmacological/family interventions). However, even more synergy is possible and desirable. A unified paradigm for the science of normal and abnormal personology must be based conceptually and pragmatically on interweaving the "whole person."

It may be a useful digression to refer to scientific developments of this character in other person- and treatment-oriented fields. Medicine, for example, has recently begun to focus on matters beyond surface symptomatology. Diseases in the past were "understood" and named only in accord with their overtly observable qualities (e.g., smallpox), in much the same way as we now refer to psychiatric entities such as "dysthymia" or "anxiety." Late in the 19th century, a paradigm shift occurred when biologists and

physicians recognized that unseen "infectious agents" were central to the etiology and understanding of disease manifestation. Symptom-labeled entities such as "smallpox" were no longer to be approached with superficial palliatives (e.g., bloodletting), but as infiltrating microbial agents in otherwise healthy individuals and, as further technical knowledge advanced, to be treated at their roots with appropriately targeted antibiotics.

An additional conceptual development in medical science occurred this past quarter of a century in response to the HIV/AIDS epidemic. Never before had the immune system been known to play so vital a role in differentiating normal versus abnormal functioning. It has been illustrated recently, for example, that constitutional differences exist among individuals in their susceptibility to the immunodeficiency virus; some are resistant to its effects whereas others will succumb to full-blown AIDS. Here again we may draw a parallel to our personological model from our sister science of medicine. Personality disorders may be seen as representing different vulnerabilities in people's "psychic immune system," that is, defects or deficiencies in a person's longstanding pattern of perceiving and coping with the psychic stressors in his or her mental life. The different personality disorders are signs of different psychic vulnerabilities. The task of personologists is to decode (diagnose) these vulnerabilities on the basis of a patient's symptoms, and then engage in therapy that not only removes the symptoms but also works through the individual's underlying vulnerabilities. Assessing and understanding the vulnerabilities—the patient's weakened intrapsychic defenses, neurochemical imbalances, cognitive misinterpretations, and interpersonal difficulties—will enable us to take steps to effect, with all these domains of vulnerability in focus, a synergisitic and "personalized therapy."

The desire for and potential in personological unification calls for at least one additional consideration. Again, the parallel between medicine and personology points to an issue often alluded to, but rarely addressed directly: On what basis should a unifying paradigm of a "personality" science be grounded?

In our view, all basic or applied sciences (physics, engineering, personology) are expressions of common functions grounded and understood from the conceptual principles of evolution theory. All disciplines of science, once achieving sufficient maturity, are natural outgrowths of, as well as demonstrations of, the operation of evolutionary processes. Formally structured, each of these sciences is composed of *subject-relevant theories* (e.g., particle physics, personology), *component classified taxonomies* (e.g., synaptic neurochemicals, International Classification of Diseases), *operational measuring tools* (e.g., cyclotrons, Minnesota Multiphasic Personality Inventory [MMPI]), and, when required, *efficacious instruments* of effecting change (e.g., locomotives, cognitive therapy). As we see it, only when all four of the preceding elements that provide a structure to a science are articulated and coordinated can our assessment tools and our therapeutic techniques demonstrate or achieve full empirical validity and instrumental efficacy.

Unfortunately, most of our theories and studies have existed largely as independent and often contradictory approaches to a modestly formed science; that is, they have little to no relationship to the assessment measures we employ to identify interventional targets, nor do they stem from explanatory principles of theories employed to understand the individuals who seek our clinical efforts. We lack the means found in subjects such as physics where physicists possess the ability to apply the equations of theory to their

taxonomy of elementary particles and possess measurement instruments that can test whether theoretically generated properties exist in fact.

It is our belief that we are reaching a time when we can begin to systematize our knowledge of personology in a manner akin to more advanced sciences. Specifically, it is our judgment that we would do well to employ the universal principles of evolutionary theory to guide our understanding of the properties of human functioning, that is, to enable us to formulate theoretical propositions that "explain" our subject domain. These principles should also enable us to construct a taxonomic system that is derived from such a theory, which, in turn, will facilitate the development of assessment tools that identify properties composing the taxonomy, and then point to those clinical characteristics that should serve as therapeutic targets. In effect, a unified personological paradigm such as this will serve as an ever-present guide as to where, how, and which assessment tools and interventions are best employed.

A few words should be said at the outset outlining the logic and steps we will follow as we proceed in this chapter. First, let us note that the ontological position of the personality *prototypes* is unchanging and invariant. They are derived by a series of direct and simple deductions from the evolutionary model, resting on what we believe to be the three fundamental and indispensable essentials of life: "existential *survival*" (pleasure/pain), ecological *adaptation* (active/passive), and species *replication* (propagation/nurturance). As an inevitable deduction, the several derived personality prototypes are the final word, real and definitive, given that they neither change nor can be altered by the impact of such extrascientific conditions as social or political considerations. That the *prevalence* of prototypal personalities can and will vary as a function of cultural influences is both possible and expected, but their enduring and inextinguishable character, as derived from the essentials of evolution, is immutable.

Second, what *is* variable are what we refer to as personality *subtypes.* Personality subtypes are essentially combinations of the several immutable prototypes. The subtypes are not derived directly from the imperatives of evolution's processes. They take shape as the adventitious impact of life's experiences generate admixtures of composites of the prototypes, compounds, and blendings that result from the influence of familial and cultural forces. Also among these mosaic amalgamations are subtype variants that differ in their degree of "normality or abnormality." Thus, the exigencies of evolution can sequentially and ultimately generate, in interaction with sociocultural experiences, several pure prototypes, numerous subtypes, and well as any number of levels of healthy and unhealthy multiforms.

Third, there is a need to develop a schema of trait characteristics and associated quantitative tools by which we can differentiate and assess the personality types and subtypes. Numerous theories have been advanced from which selective trait features are highlighted; for example, those that give primacy to interpersonal relations, or cognitive beliefs, or intrapsychic processes, or neurologically based dispositions. Each of these is productive as a source of personological or clinical study. But, the singularity of their focus is severely limiting. We believe a trait format should incorporate and subsume all of these part function characteristics in an overarching schema of *trait domains*, e.g., interpersonal conduct, cognitive style, mood temperament. Similarly, mathematical efforts have been employed to deduce traits from covariant data sources, the most popular of these being several factorial procedures. As will be noted later, numerical procedures, in our judgment, of either a simple arithmetic character or a more complex algebraic

formula, are likely to be a more productive methodological resource than factor analysis for assessing quantitative gauges of the several trait domains. These will be touched upon in later paragraphs as well.

To restate our essential thesis, and sound somewhat Mosaic about the matter, let us be reminded that "Nature is One." We humans, understandingly, have subdivided nature's intrinsic oneness into spheres of attention and focus in order to simplify our task of understanding it; hence, we have physics, chemistry, geology, and the like. In doing so, however, *we have overlooked or bypassed those deeper and essential commonalities they share*. As addressed in earlier books and articles of ours, we judge that principles of an evolutionary character underlie all of them, that is, laws and processes that all our man-made distinct sciences share in common. Though "discovered" initially in the biological sciences, evolution reflects a set of natural laws applicable to both the physical and the psychological sciences. To us, these common rudiments and universal operations of nature also undergird our science's study of the problems of persons, as well as the logic we should follow, when needed, to select the focus and modes for their treatment. It is our view that much of psychological science remains adrift, obsessed with horizontal refinements and passing fads, a patchwork quilt of dissonant concepts and methods, rather than a unified tapestry that interweaves (unifies) its components to these deeper fundamental and common principles of nature. Table 1.1 provides an outline of the five components the senior author has articulated as a unifying paradigm for the

Table 1.1

Personology and Psychopathology Cohering the Science of Clinical Psychology

I. *Universal scientific principles* (evolution)
   Grounded in ubiquitous laws of nature
   A guiding framework for diverse subject realms
II. *Subject-oriented theories* (personology/psychopathology)
   Heuristic structure of explanatory propositions
   Deduction and understanding of clinical conditions
III. *Classification of styles and syndromes* (nosology/taxonomy)
   Theory-derived traits, typologies and pathologies
   Prototypes differentiated, grouped, and interrelated
IV. *Clinical instruments* (assessment/diagnosis)
   Empirically-grounded and quantitatively sensitive tools
   Identify/measure prototypes/syndromes/domain attributes
   Investigate theory validity and utility
V. *Personalized interventions* (treatment/therapy)
   Plan goals and strategies
   Balance polarities/counter perpetuations
   Select domain modalities (neurochemical/cognitive, etc.)
   Synergize therapeutic integrations

subject domains of personology and psychopathology. It recommends that these fields be grounded in evolutionary principles and be designed thereby to cohere the elements and functions that comprise a science of clinical psychology.

To fail to build such a unifying paradigm of personology and psychopathology will keep us on the same unprogressive course that has plagued the field since time immemorial. Brilliant theoretical ideas have been proposed in the past, articulate classification systems and quantitatively sensitive assessment instruments have been generated, as well as imaginative therapies developed, but we remain stuck in a babble of conflict and confusion in which little is synthesized or structured logically. Integrating the several prime components comprising a clinically oriented personological science, grounded in the generative paradigm provided by evolutionary principles, will provide an undergirding framework for integrative assessment and treatment interventions. It is a task worthy of collaborative efforts on our part.

Differentiating Normal and Abnormal Personality

Numerous attempts have been made to develop definitive criteria for distinguishing personological normality from abnormality. Some of these criteria focus on features that characterize the so-called normal, or ideal, state of mental health, as illustrated in the writings of Offer and Sabshin (1974, 1991); others have sought to specify criteria for concepts such as abnormality or psychopathology. The most common criterion employed is a statistical one in which normality is determined by those behaviors that are found most frequently in a social group, and pathology or abnormality by features that are uncommon in that population. Accordingly, normality and pathology may be seen as relative concepts; they represent arbitrary points on a continuum or gradient. No sharp line divides normal from pathological behavior. Moreover, personality is so complex that certain areas of personological functioning operate normally, although others do not. In addition, behaviors that prove adaptive at one time fail to do so at another. As the focus of this chapter is on personality, both normal and abnormal, we should ask at the outset, how do we conceive the subject of personality?

The word *personality* derives from the Greek term *persona* and was chosen to represent the theatrical mask used by dramatic players. This meaning has changed. As a mask assumed by an actor it suggested a pretense of appearance, that is, the possession of traits other than those which actually characterized the individual behind the mask. In time, the term persona lost its connotation of pretense and illusion, and began to represent, not the mask, but the real person, his/her apparent, explicit, and manifest features. A third meaning that the term personality acquired delves "beneath" the surface impression of the person and turns the spotlight on the inner, less revealed, and hidden psychological qualities of the individual. Thus, the term shifted from meaning external illusion to surface reality, to opaque or veiled inner traits. This third meaning comes closest to contemporary psychoanalytic use. *Personology*, a term coined by Murray (1938), was selected to represent a field of study, one that sees the subject as a complex pattern of deeply embedded psychological characteristics that cannot be eradicated easily and express themselves automatically in most facets of functioning. Intrinsic and pervasive, they are composed of traits that emerge from a complicated matrix of biological

dispositions and experiential learnings and now comprise the individual's distinctive pattern of perceiving, feeling, thinking, and coping.

Murray also stressed the developmental perspective of personology. As he and his followers saw it, each child displays a wide variety of behaviors in the first years of life. Although exhibiting a measure of consistency consonant with his or her constitutional disposition, the way in which the child responds to and copes with the environment tends to be largely spontaneous, changeable, and unpredictable. These seemingly random and capricious behaviors serve an important exploratory function. The child is "trying out" a variety of behavioral alternatives for dealing with his/her environment. Over time the child begins to discern which of these actions enable him to achieve his or her desires and avoid discomforts. Endowed with certain capacities, energies, and temperaments, and through experience with parents, sibs, and peers, the child learns to discriminate which activities are both permissible and rewarding, and which are not.

Tracing this personological sequence of development over time, be it normal or abnormal, shows that a shaping process has taken place in which the child's initial range of diverse behaviors gradually becomes narrowed, selective, and finally crystallized into preferred ways of relating to others and coping with this world. These learned behaviors not only persist but also are accentuated as a result of being repetitively reinforced by a limited social environment. Given continuity in constitutional equipment and a narrow band of experiences for learning behavioral alternatives, the child acquires a pattern of traits that are deeply etched and difficult to modify. These characteristics comprise his/her personality—that is, ingrained and habitual ways of psychological functioning that emerge from the individual's entire developmental history, and which over time come to characterize the child's "style."

It is important to note that the traits of which both normal and abnormal personalities are composed are not a potpourri of unrelated perceptions, thoughts, and behaviors but a tightly knit organization of attitudes, habits, and emotions. Although all of us may start in life with more or less random and diverse feelings and reactions, the repetitive sequences of reinforcing experiences to which we are exposed narrow our repertoire to particular behavioral strategies that become prepotent and characterize our personally distinctive way of coping with others and relating to ourselves.

This conception of personality breaks the long-entrenched habit of conceiving syndromes of abnormal personality, or what are called "disorders" in the *Diagnostic and Statistical Manual of Mental Disorders (DSM)*, to be one or another variant of a disease as if some "foreign" entity or lesion intruded insidiously within the person to undermine his or her so-called normal functions. The archaic notion that mental disorders represent external intrusions or internal disease processes is an offshoot of prescientific ideas such as demons or spirits that ostensibly "possess" or cast spells on the person. The role of infectious agents and anatomical lesions in physical medicine has reawakened this archaic view. Of course we no longer see demons, but many still see some alien or malevolent force as invading or unsettling the patient's otherwise healthy status. This view is an appealing simplification to the layman, who can attribute his/her irrationalities to some intrusive or upsetting agent. It also has its appeal to the less sophisticated clinician, for it enables him or her to believe that the insidious intruder can be identified, hunted down, and destroyed.

Such naive notions should carry little weight among modern-day medical and behavioral scientists. Given our increasing awareness of the complex nature of both normality

and abnormality, we now recognize, for example, that most abnormalities, physical and psychological, result from a dynamic and changing interplay between individuals' capacities to cope and the environment within which they live. It is the patients' overall constitutional makeup that serves as a substrate that inclines them to resist or to succumb to potentially troublesome environmental forces. To illustrate: Infectious viruses and bacteria proliferate within the environment; it is the person's immunological defenses that determine whether or not these microbes will take hold, spread, and, ultimately, be experienced as illness. Individuals with robust immune activity will counteract the usual range of infectious microbes with ease, whereas those with weakened immune capacities will be vulnerable, fail to handle these "intrusions," and quickly succumb. Psychic pathology should be conceived as reflecting the same interactive pattern. Here, however, it is not the immunological defenses but the patient's personality pattern—that is, coping skills and adaptive flexibilities—that will determine whether or not the person will master or succumb to his/her psychosocial environment. Just as physical ill health is likely to be less a matter of some alien virus than it is a dysfunction in the body's capacity to deal with infectious agents, so too is psychological ill health likely to be less a product of some intrusive psychic strain than it is a dysfunction in the personality's capacity to cope with life's difficulties. Viewed this way, the structure and characteristics of personality, normal or abnormal, become the foundation for the individual's capacity to function in a mentally healthy or ill way.

Abnormal personality results from the same forces as involved in the development of normal personality. Important differences in the character, timing, and intensity of these influences will lead some individuals to acquire pathological traits and others to develop adaptive traits. When an individual displays an ability to cope with the environment in a flexible manner, and when his or her typical perceptions and behaviors foster increments in personal satisfaction, then the person may be said to possess a normal or healthy personality. Conversely, when average or everyday responsibilities are responded to inflexibly or defectively, or when the individual's perceptions and behaviors result in increments in personal discomfort or curtail opportunities to learn and to grow, then we may speak of a pathological or maladaptive pattern. Despite the tenuous and fluctuating nature of the normality–pathology distinction, certain features may be abstracted from the flow of personality characteristics to serve as differentiating criteria; notable among them are an adaptive inflexibility, a tendency to foster vicious or self-defeating circles, and a tenuous emotional stability under conditions of stress (Millon, 1969, 1981, 1991).

No less significant for a science of personology and psychopathology is the specification of useful personological and clinical realms in which the characteristics of persons can be systematically differentiated and compared. We have termed these as functional and structural trait domains, for example, interpersonal conduct, cognitive style, and self-image (Millon & Davis, 1996).

Similarly, we have recently articulated 15 different personality *spectra*, each based on evolutionary deductions (e.g., passive-self). Each of the 15 spectra comprises a distinctive continuum of personality variants or subtypes that range from normal/healthy styles to those who are conceived as abnormal/disordered. For example, one spectrum reflects the evolutionary active-detached pattern. Among those at the normal end of the spectrum continuum are those referred to as "shy" personalities, whereas at the abnormal extreme we find those termed as "avoidant" personalities.

As noted previously, we will attempt to present several key topics comprising our approach in sequence. First, we intend to outline the orientation we have taken to conceptualize personality, an orientation that argues in favor of grounding a prototypal concept in a firm theoretical foundation. We contend that the most sturdy scaffolding for understanding personality, normal or abnormal, will be best constructed with reference to the principles of evolutionary theory. We will record the 15 personological/clinical spectra with reference to a *circulargram* figure, and then record their functional and structural domains on two additional figures. Finally, we will describe, albeit briefly, a number of "operational" instruments to gauge these constructs, that is, assessment tools that take the form of specific instruments and quantitative measures.

Conceptualizing Personality

How can we best conceptualize and organize the data that comprise normal and abnormal personality?

Clearly, personality characteristics express themselves in a variety of ways. Not only are they complex, but also they can be approached at different levels and can be viewed from many frames of reference. For example, behaviorally, personality can be conceived as complicated response patterns to environmental stimuli. At phenomenological or emotional levels, they can be understood as experiences of joy or anguish. Approached physiologically, they can be analyzed as sequences of complex neural and chemical activity. And intrapsychically, they can be inferred as unconscious processes that enable the person to enhance life or to defend against anxiety and conflict.

Given these diverse possibilities, we can readily understand why both normal and pathological states or processes may be classified in terms of any of several data levels we may wish to focus on, and any of a variety of attributes we may wish to identify and explain. Beyond this, each data level lends itself to a number of specific concepts and categories, the usefulness of which must be gauged by their ability to help solve the particular problems and purposes for which they were created. That the subject matter of personality is inherently diverse and complex is precisely the reason why we must not narrow the data comprising a conceptual scheme to one level or one approach. Each source and each orientation has a legitimate and potentially fruitful contribution to make. It should be clear from these considerations that no single classification of personality traits or disorders will "carve nature at its joints," that is, an inevitable representation of the "real world." Rather, our classifications are, at best, interim tools for advancing knowledge and facilitating scientific or clinical goals. They serve to organize our scientific work in a logical manner, and function as explanatory propositions to give meaning to our clinical experiences.

The subject areas that subdivide the natural world differ in the degree to which their phenomena are inherently differentiated and organized. Some areas are "naturally" more articulated and quantifiable than others. To illustrate: The laws of physics relate to highly probabilistic processes in many of its most recondite spheres, but the features of our everyday physical world are highly ordered and predictable. Theories in this latter realm of physics (e.g., mechanics, electricity) serve largely to *uncover* the lawful relationships that do, in fact, exist in nature; it was the task of turn-of-the-century physicists

to fashion a network of constructs that faithfully mirrored the universal nature of the phenomena they studied. By contrast, probabilistic realms of physical analysis (e.g., short-lived elementary particles) or systems of recent evolutionary development (e.g., human interactions) are inherently weakly organized, lacking either articulated or invariant connections among their constituent elements. In knowledge domains that relate to these less ordered spheres of nature (the softer sciences), classifiers and theorists find it necessary to *impose* a somewhat arbitrary measure of systematization; in doing so, they construct a degree of clarity and coherence that is not fully consonant with the naturally unsettled and indeterminate character of their subject. Rather than equivocate strategically, or succumb to the "futility of it all," noble or pretentious statistical or theoretical efforts are made to arrange and categorize these inexact and probabilistic elements so that they simulate a degree of precision and order transcending that which they intrinsically possess. To illustrate: In fields such as economics and personology, categories and classifications are, in considerable measure, splendid fictions, compelling notions, or austere formulas devised to give coherence to their *inherently imprecise* subjects.

Is conceptual definition and classification possible in organizing the data of normality and abnormality? Can these most fundamental scientific activities be achieved in subjects that are inherently inexact, of only modest levels of intrinsic order, ones in which even the very slightest variations in context or antecedent conditions—often of a minor or random character—produce highly divergent outcomes (Bandura, 1982)? Because this "looseness" within the network of variables in normality and psychopathology is unavoidable, are there any grounds for believing that such endeavors could prove more than illusory? Persuasive answers to this question of a more philosophical nature must be bypassed in this all-too-concise chapter; those who wish to pursue this line of analysis would gain much by reading, among others, Hempel (1965), Meehl (1978), and Pap (1953). Let us touch, albeit briefly, on a more tangible and psychologically based rationale for believing that formal classification in normal and abnormal personality may prove to be at least a moderately fruitful venture.

There is a clear logic to classifying "syndromes" in medical disorders. Bodily changes wrought by infectious diseases and structural deteriorations repeatedly display themselves in a reasonably uniform pattern of signs and symptoms that "make sense" in terms of how anatomic structures and physiological processes are altered and dysfunction. Moreover, these biological changes provide a foundation not only for identifying the etiology and pathogenesis of these disorders but also for anticipating their course and prognosis. Logic and fact together enable us to construct a rationale to explain why most medical syndromes express themselves in the signs and symptoms they do, as well as the sequences through which they unfold.

Can the same be said for personality classifications? Is there a logic, perhaps evidence, for believing that certain traits (e.g., behaviors, cognitions, affects, mechanisms) cluster together as do medical syndromes, that is, not only covary frequently, but also make sense as a coherently organized and reasonably distinctive group of characteristics? Are there theoretical and empirical justifications for believing that the varied features of personality display a configurational unity and expressive consistency over time? Will the careful study of individuals reveal congruency among attributes such as overt behavior, intrapsychic functioning, and biophysical disposition? Is this coherence and stability

of psychological functioning a valid phenomenon, that is, not merely imposed upon observed data by virtue of clinical expectation or theoretical bias?

There are reasons to believe that the answer to each of the preceding questions is yes. Stated briefly and simply, the observations of covariant patterns of signs, symptoms, and traits may be traced to the fact that people possess relatively enduring biophysical dispositions which give a consistent coloration to their experience, and that the range of experiences to which people are exposed throughout their lives is both limited and repetitive (Millon, 1969, 1981). Given the limiting and shaping character of these biogenic and psychogenic factors, it should not be surprising that individuals develop clusters of prepotent and deeply ingrained behaviors, cognitions, and affects that clearly distinguish them from others of dissimilar backgrounds. Moreover, once a number of the components of a particular clinical pattern are identified, knowledgeable observers are able to trace the presence of other, unobserved but frequently correlated features comprising that pattern.

A related question that must be addressed may be phrased best as follows: Why does the possession of characteristic A increase the probability, appreciably beyond chance, of also possessing characteristics B, C, and so on? Less abstractly, why do particular behaviors, attitudes, mechanisms, and so on, covary in repetitive and recognizable ways rather than exhibit themselves in a more or less haphazard fashion? And, even more concretely, why do each of the following: behavioral defensiveness, interpersonal provocativeness, cognitive suspicion, affective irascibility, and excessive use of the projection mechanism, co-occur in the same individual, rather than be uncorrelated and randomly distributed among different individuals?

The "answers" are, first, that temperament and early experience simultaneously affect the development and nature of several emerging psychological structures and functions; that is, a wide range of behaviors, attitudes, affects, and mechanisms can be traced to the *same origins*, leading thereby to their frequently observed covariance. Second, once an individual possesses these initial characteristics, they set in motion a series of derivative life experiences that shape the acquisition of new psychological attributes causally related to the characteristics that preceded them in the sequential chain. Common origins and successive linkages increase the probability that certain psychological characteristics will frequently be found to pair with specific others, resulting thereby in repetitively observed trait clusters, or what we term "personality styles" or "clinical syndromes."

The following paragraphs will provide a reasonably balanced overview of the alternate and rival methods of personality conceptualization, but it is our bias that "natural" and scientific classifications are best derived from the systematic principles of a theoretical schema (Hempel, 1965). As is well known, classifications have been proposed in personality since time immemorial. Why is it that only a small number of schemas in most fields of science endure and prove informative, whereas others are patently useless or fail to withstand the test of time?

In the early stages of knowledge, conceptual categories rely invariably on observed similarities among phenomena (Tversky, 1977). As knowledge advances, overt similarities are discovered to be an insufficient, if not false basis for cohering categories and imbuing them with scientific meaning (Smith & Medin, 1981). As Hempel (1965) and Quine (1977) have pointed out, it is theory that provides the glue that holds concepts

together and gives them both their scientific and clinical relevance. In his discussion of classificatory concepts, Hempel (1965) wrote that

> The development of a scientific discipline may often be said to proceed from an initial "natural history" stage . . . to subsequent more and more "theoretical stages. . . . The vocabulary required in the early stages of this development will be largely observational. . . . The shift toward theoretical systematization is marked by the introduction of new, "theoretical" terms . . . more or less removed from the level of directly observable things and events. . . .
>
> These terms have a distinct meaning and function only in the context of a corresponding theory. (pp. 139–140)

More will be said in later paragraphs concerning our view that scientific concepts and classifications must *ultimately* be based on theoretically anchored constructs (Wright & Murphy, 1984).

No issue in personality, be it normal or abnormal, has raised deeper or more persistent epistemological questions than those related to classification. The present chapter touches on a few of these questions, but it cannot undertake a thorough examination of the deeper and more problematic philosophical issues involved in the elements of the subject. No matter how noble and compelling the goal it may be, there is no hope that a universal conceptual system can be achieved; different purposes (e.g., diagnostic, administrative, statistical) call for different solutions. There is a complex network of purposes and a correspondingly varied set of contexts and methods, both pragmatic and theoretical, which will bear on the efficacy and utility of a categorical, dimensional, or prototypal schema. It is hoped that the remainder of this chapter will guide the reader to recognize more clearly the delicate balance required among these complexities and alternatives.

Important differences separate medical from psychological traditions in their approach to classifying their primary subject domains. Psychology's substantive realms have been approached with considerable success by employing methods of dimensional analysis and quantitative differentiation (e.g., intelligence measures, aptitude levels, trait magnitudes, etc.). By contrast, medicine has made its greatest progress by increasing its accuracy in identifying and categorizing discrete "disease" entities. The issue separating these two historic approaches as it relates to the subject domain of normal and abnormal personality may best be stated in the form of a question: Should personality be conceived and organized as a series of *dimensional* traits that combine to form a unique profile for each individual, or should certain central characteristics be selected to exemplify and *categorize* personality types found commonly in clinical populations?

The view that personality might best be conceived in the form of dimensional traits has only recently begun to be taken as a serious alternative to the more classic categorical approach. Certain trait dimensions have been proposed in the past as relevant to these disorders (e.g., dominance–submission, extraversion–introversion, and rigidity–flexibility), but these have not been translated into the full range of personality syndromes. Some traits have been formulated so that one extreme of a dimension differs significantly from the other in terms of their clinical implications; an example here would be emotional stability versus emotional vulnerability. Other traits are psychologically curvilinear such that both extremes have negative implications; an example of this would be found in an activity dimension such as listlessness versus restlessness.

Despite their seeming advantages, dimensional systems have not taken strong root in the formal diagnosis of abnormal personality. Numerous complications and limitations have been noted in the literature.

First is the fact that there is little agreement among dimensional theorists concerning the number of traits necessary to represent personality. Historically, for example, Menninger (1963) contended that a single dimension would suffice; Eysenck (1960) asserted that three are needed, whereas Cattell (1965) claimed to have identified as many as 33 and believes there are many more. However, recent models, most notably the Five-Factor Model (FFM) (Costa & McCrae, 1990; Goldberg, 1990; Goldberg & Velicer, this volume; McCrae, this volume; Norman, 1963) have begun to achieve a modest level of consensus. The problem here is that theorists may "invent" dimensions in accord with their expectations rather than "discovering" them as if they were intrinsic to nature, merely awaiting scientific detection. The number of traits or factors required to assess personality may not be determined by the ability of our research to disclose some inherent truth but rather by predilections for conceiving the studies we undertake and organizing the data they generate (Kline & Barrett, 1983; Millon, 1990).

Categorical models appear to have been the preferred schema for representing both clinical syndromes and personality disorders. It should be noted, however, that most contemporary categories neither imply nor are constructed to be all-or-none typologies. Although singling out and giving prominence to certain features of behavior, they do not overlook the others but merely assign them lesser significance. It is the process of assigning centrality or relative dominance to particular characteristics that distinguishes a schema of categories from one composed of trait dimensions. Conceived in this manner, *a type simply becomes a superordinate category that subsumes and integrates psychologically covariant traits that, in turn, represent a set of correlated habits that, in their turn, stand for a response displayed in a variety of situations.*

There are of course objections to the use of categorical typologies in personality. They contribute to the fallacious belief that syndromes of abnormality are discrete entities, even medical "diseases," when, in fact, they are merely concepts that help focus and coordinate observations. Numerous classifications have been formulated in the past century and one may question whether any system is worth utilizing if there is so little consensus among categorists themselves. Is it possible to conclude from this review that categorical or dimensional schemas are potentially more useful for personality classifications? An illuminating answer may have been provided by Cattell (1970), who wrote:

> The description by attributes [traits] and the description by types must be considered face and obverse of the same descriptive system. Any object whatever can be defined either by listing measurements for it on a set of [trait] attributes or by sequestering it to a particular named [type] category. (p. 40)

In effect, Cattell has concluded that the issue of choosing between dimensional traits and categorical types is both naive and specious because they are two sides of the same coin. The essential distinction to be made between these models is that of comprehensiveness. Types are higher order syntheses of lower order dimensional traits; they encompass a wider scope of generality. For certain purposes it may be useful to narrow attention to specific traits; in other circumstances a more inclusive level of integration may be appropriate (Grove & Tellegen, 1991).

An endeavor to resolve some of these issues has been described in earlier reports (Millon, 1984, 1986, 1990). Termed *prototypal trait domains*, it mixes categorical and dimensional elements in a personological classification. As in the official schema, several criteria are specified for each disorder, but these criteria encompass a large set of clinical domains, e.g., mood/temperament, cognitive style. The diagnostic criterion is conceived to be prototypal, as is the personality-as-a-whole. Each specific domain is given a prototypal standard for each personality. To illustrate: If the clinical attribute "interpersonal conduct" was deemed of value in assessing personality, then a specific prototypal criterion would be identified to represent the characteristic or distinctive manner in which each personality ostensibly conducts its interpersonal life.

By composing a classification schema that includes all relevant personality trait domains that are *well-known and commonly used by clinicians* (e.g., self-image, interpersonal conduct, cognitive style), and specifies a prototypal feature for every domain for each personality prototype or subtype, the proposed format would then be fully comprehensive in its scope, *useful to experienced and sophisticated clinical assessors*, as well as possess directly comparable prototypal features for its parallel categories. *A schema of this nature would not only be accepted by practitioners, but would also furnish both detailed substance and symmetry to its assessment taxonomy.* The 15 spectra of the model and its associated functional and structural domains are noted in Figures 1.2 and 1.3, portrayed later in the chapter.

To enrich its qualitative categories (the several prototypal features comprising the trait range seen in each domain) with *quantitative discriminations* (numerical intensity ratings), personologists would not only identify which prototypal features (e.g., woeful, hostile, labile) in a personological trait domain (e.g., mood/temperament) best characterizes a person, but also record a rating or number (e.g., from 1 to 10) to represent the degree of prominence or pervasiveness of the chosen feature(s). Personologists would be encouraged in such a prototypal schema to record and quantify more than one feature per psychological domain (e.g., if suitable, to note both "woeful" and "labile" moods, should their observations lead them to infer the presence of these two prototypal characteristics in that domain). Reference to the descriptive trait domains of all but one personality may be found in Millon and Davis (1996).

The prototypal domain model illustrates that *categorical* (qualitative distinction) and *dimensional* (quantitative distinction) approaches need not be framed in opposition, no less be considered mutually exclusive. Assessments can be formulated, first, to recognize qualitative (categorical) distinctions in what prototypal features best characterize a person, permitting the multiple listing of several such features, and second, to differentiate these features quantitatively (dimensionally) so as to represent their relative degrees of clinical prominence or pervasiveness. The prototypal domain approach includes the specification and use of categorical attributes in the form of distinct prototypal characteristics, yet allows for a result that permits the diversity and heterogeneity of a dimensional schema.

Manifest and Latent Taxa

The elements that comprise a classification system are called taxa (singular: taxon); they may be differentiated in a number of different ways. What may be labeled as *manifest* taxa involve classes that are based on observable or phenotypic commonalities (e.g., overt

behaviors). *Latent* taxa pertain to groupings formed on the basis of abstract mathematical derivations (factor or cluster analysis) or the propositional deductions of a theory, each of which ostensibly represents the presence of genotypic commonalities (e.g., etiological origins or constitutional dispositions).

The polar distinction between manifest taxa, at the one end, and latent taxa, at the other, represents in part a broader epistemological dichotomy that exists between those who prefer to employ data derived from observational contexts versus those who prefer to draw their ideas from more theoretical or mathematically deduced sources. A parallel distinction was first drawn by Aristotle when he sought to contrast the understanding of disease with reference to knowledge of latent principles—which ostensibly deals with all instances of a disease, however diverse—versus direct observational knowledge—which deals presumably only with specific and individual instances. To Aristotle, knowledge based on direct experience alone represented a more primitive type of knowledge than that informed by mathematics or conceptual theory which could, through the application of principles, not only explain why a particular disease occurs but also illuminate commonalities among seemingly diverse ailments.

For the greater part of history, taxonomies of both normal and abnormal persons were formed on the basis of systematic observation—the witnessing of repetitive patterns of behavior and emotion among a small number of carefully studied persons or patients. Etiological hypotheses were generated to give meaning to these patterns of covariance (e.g., Hippocrates anchored differences in observed temperament to his humoral theory and Kraepelin distinguished two major categories of severe pathology, dementia praecox and manic-depressive disease, in terms of their ostensive divergent prognostic course). The elements comprising these theoretic notions were *post hoc*, however, imposed after the fact on prior observational data, rather than serving as a generative source for taxonomic categories. The most recent example of a clinical taxonomy, one tied explicitly to phenomenal observation and constructed by intention to both atheoretical and nonquantitative, is of course the *DSM*. Spitzer, chairperson of the Task Force, stated in the *DSM-III* manual (American Psychiatric Association, 1980) that "clinicians can agree on the identification of mental disorders on the basis of their clinical manifestations without agreeing on how the disturbances came about" (p. 7). Albeit implicitly, the *DSM* is a product of speculation regarding latent causes or structures. Nevertheless, a major goal of its Task Force committee was to eschew theoretic notions, adhering to as strict an observational philosophy as possible. In doing so, only those attributes that could be readily seen or consensually validated were to be permitted as diagnostic criteria. Numerous derelictions from this epistemology are notable, nevertheless, especially among the personality disorders, where trait ascriptions call for inferences beyond direct sensory inspection.

Not all who seek to render taxa on the basis of observational clinical data insist on keeping latent inferences to a minimum (Tversky, 1977). And by no means do those who draw their philosophical inspiration from a manifest mindset restrict themselves to the mere specification of surface similarities (Medin, Altom, Edelson, & Freko, 1982). It is not only those who employ mathematical procedures and who formulate theoretically generated nosologies who "succumb" to the explanatory power and heuristic value of pathogenic or statistical inferences. Feinstein (1977) a distinguished internist,

provides an apt illustration of how one man's "factual" observations may be another's latent inference. As Feinstein put it:

> In choosing an anchor or focus for taxonomy, we can engage in two distinctly different types of nosological reasoning. The first is to form names, designations or denominations for the observed evidence, and to confine ourselves exclusively to what has actually been observed. The second is to draw inferences from the observed evidence, arriving at inferential titles representing entities that have not actually been observed. For example, if a patient says "I have substantial chest pain, provoked by exertion, and relieved by rest," I, as an internist, perform a denomination if I designate this observed entity as angina pectoris. If I call it coronary artery disease, however, I perform an inference, because I have not actually observed coronary artery disease. If a radiologist looking at a coronary arteriogram or a pathologist cutting open the coronary vasculature uses the diagnosis coronary artery disease, the decision is a denomination. If the radiologist or pathologist decides that the coronary disease was caused by cigarette smoking or by a high fat diet, the etiological diagnosis is an inference unless simultaneous evidence exists that the patient did indeed smoke or use a high fat diet. (p. 192)

In large measure, observationally based taxa gain their import and prominence by virtue of consensus and authority. Cumulative experience and habit are crystallized and subsequently confirmed by official bodies such as the various *DSM* committees (Millon, 1986). Specified criteria are denoted and articulated, acquiring definitional, if not stipulative powers, at least in the eyes of those who come to accept the manifest attributes selected as infallible taxonomic indicators.

Inasmuch as manifest taxa stem from the observations and inferences of, for example, clinical diagnosticians, they comprise, in circular fashion, the very qualities that clinicians are likely to see and deduce. Classes so constructed not only will direct future observers to focus on and to mirror these same taxa in their patients but also may lead future nosologists away from potentially more useful constructs with which to fathom less obvious patterns of attribute covariation. It is toward the end of penetrating beneath the sensory domain to more latent commonalities that taxonomists have turned either to numerical methods or to theoretical principles.

There has been a rapid proliferation of new and powerful mathematical techniques for both analyzing and synthesizing vast bodies of clinical data. This expansion has been accelerated by the ready availability of inexpensive computer hardware and software programs. Unfortunately, such mushrooming has progressed more rapidly than its fruits can be digested.

There are numerous purposes to which this growing and diverse body of quantitative methods can be put, of which only a small number are relevant to the goal of aiding in taxonomic construction. The designation "factor analysis" is a generic term encompassing a variety of numerical procedures which serve to achieve different goals, the details of which are not relevant to this chapter. In essence, it seeks to reveal the underlying structure of its attributes by identifying factors which account for their covariation. Toward this end, linear combinations of the attributes are sequentially chosen to cumulate as much variance as possible. Factors derived in this manner are often "rotated" after their initial mathematical solution in order to increase their psychological meaning.

Despite the ostensively productive lines of investigation that factorial techniques have demonstrated (a book such as this is clear evidence for its popularity, if not clinical utility), several problems continue to be raised concerning its applicability as an instrument of conceptualization. Thus, early in its application, Kendall (1975) reported that skepticism in the field remains high,

> . . . largely because of the variety of different factor solutions that can be obtained from a single set of data and the lack of any satisfactory objective criterion for preferring one of these to the others. The number of factors obtained and their loadings are often affected considerably by relatively small changes in the size or composition of the subject sample, or in the range of test employed. (p. 108)

And Sprock and Blashfield (1984) concluded that

> . . . deciding when to stop the process of selecting the number of factors, rotating the solutions, and interpreting the factors are all highly subjective and at the discretion of the user. Therefore, many distrust the results (p. 108).

In addition to these methodological caveats, a number of conceptual forewarnings must be kept in mind regarding the structural implications of these mathematical approaches. As is known among those involved in the development of psychometric instruments (Loevinger, 1957; Millon, 1977, 1986), a reasonable degree of "fidelity" should exist between the pattern of relationships among the scales of a test and its structural model of normality or pathology.

Hence, despite its popularity with many a distinguished current psychometrician, the psychological composition of factorial structures is far from universally accepted. Not only do few personological or psychopathological entities give evidence of factorial "purity" or attribute independence, but factorial solutions tend to be antithetical to the predominant polythetic structure and overlapping relationships that exist among normal personalities and clinical conditions. Neither personological nor syndromic taxa consist of entirely homogeneous and discrete attributes. Rather, taxa comprised diffuse and complex characteristics that share many attributes in common, factorially derived or otherwise.

Nevertheless, there is a growing literature supportive of one such model, the FFM (Costa & McCrae, 1990; Digman, 1990; Goldberg, 1990; McCrae & Costa, 1985; Norman, 1963). Costa and McCrae have provided strong evidence for the power of the "Big Five" as a latent mathematical framework for unraveling diverse and more complex structures of numerous, other personality instruments. In their recent writings they have extended the applicability of these five factors as descriptive underpinnings for the *DSM* personality disorders. This is not the chapter or setting for such purposes, but it should be noted in passing that other equally astute and productive investigators have registered a measure of dissent from both the sufficiency of scope of the Big Five, and its adequacy as a latent explicator of normal or abnormal personality (Benjamin, 1993; Block, 1995; Carson, 1993; Davis & Millon, 1993; Grove & Tellegen, 1991; Hough, 1992; Livesley, 1991; Paunonen & Jackson, 2000; Saucier & Goldberg, 1998; Tellegen, 1993; Waller & Ben-Porath, 1987).

According to the FFM proponents, their favorite instrument, the NEO-PI, has been replicated across multiple data sources, in children and adults, and in several different languages. Indeed, the FFM is usually put forward on the strength of its considerable convergence. But convergence does not signify clinical utility, nor is convergence either construct or theoretical validity. In the same way that judgments can be consistent and wrong, judgments can converge without yielding anything beyond the reliability of surface impressions. Perhaps an example from another descriptive domain would illustrate for the reader the potentially trivial nature of the FFM for both science and clinical work. Let us gather the responses of a wide range of subjects from every culture and language to a comprehensive set of descriptive terms of human physical (not psychological) characteristics. How many and what factors would be likely to emerge? Our guess is that five or six highly loaded dimensions (traits) would be identified and converge, that is, be replicated in all of these diverse settings. To specify: (a) gender; male to female, (b) race; black to white, (c) age; young to old, (d) height; short to tall, (e) physique; thin to heavy, (f) appearance; beautiful to ugly. Despite its convergence across cultures and languages, would this finding be of value in anything but the most superficial characterizations?

And for purposes of clinical science would such characterizations prove useful in the science of anatomy or physiology? Would such a lexicon of naive surface impressions reflect internal morphology or biochemistry such that surgeons could orient themselves to achieve their purposes in clinical diagnosis and treatment? We think not.

The conclusion to be drawn is that the instruments and concepts undergirding the FFM *contain no personality-relevant information beyond the judgments of normal persons, as encoded in our ordinary everyday lexicon.* The FFM should be compared to the judgments of mental health professionals about patients. Encoded in the evolving professional language of the last hundred years or so, we must ask whether our professional language, concepts, and assessment instruments contain information incremental to the superficialities of our everyday lexicon.

Clinical languages differ from everyday language because they serve different and more sophisticated purposes. Indeed, clinical languages reflect the contributions of numerous historical schools of thought (Millon, Tringone, Millon, & Grossman, 2005) that have identified numerous latent structures, as well as diverse and complex psychic processes that operate in our mental life. Surely these clinical lexicons are not reducible to the five superficial dimensions drawn from the vocabulary of nonscientists analyzed by a simplistic statistical methodology.

In fact, using such a factorial methodology, Livesley, Jackson, and Schoeder (1989) set out to identify personality dimensions based on the language of clinical thinkers. A content analysis of their research revealed that 79 dimensions were required to represent personality features. An oblique factorial rotation of these dimensions yielded no less than 15 interpretable factors, not 5. The point of this critical excursion is to point out that clinicians have access to a much more sophisticated lexicon than that employed in the FFM.

Beyond skeptics of the fruitfulness of the FFM are those who question the wisdom of employing latent mathematical methods at all or, at the very least, argue that we should employ methods more suitable to the complexities and interactions of the subject domain, such as taxometrics or structural equation models. Thus, in his usual perspicacious manner, Kendall's (1975) comment of three decades ago, upon reviewing

the preceding 20 year period of statistical methods to decode personality dimensions or typologies, is no less apt today as it was then:

> Looking back on the various studies published in the last twenty years it is clear that many investigators, clinicians and statisticians, have had a naive, almost Baconian, attitude to the statistical techniques they were employing, putting in all data at their disposal on the assumption that the computer would sort out the relevant from the irrelevant and expose the underlying principles and regularities, and assuming all that was required of them was to collect the data assiduously beforehand. . . .
>
> Moreover, any statistician worth his salt is likely to be able, by judicious choice of patients and items, and of factoring or clustering procedures, to produce more or less what he wants to. (p. 118)

The task of combining factor attributes into patterns and configurations that correspond to the personality, normal and abnormal, is one, we contend, that transcends the powers of any mathematical technique. Today, we must face the task of counteracting the tyranny of scientifically disingenuous mathematics that falsely misleads naive psychologists into thinking that the addition of pretentious or specious statistics provides them with a meaningful base for useful clinical or personological work. To achieve this task we must still depend on either a measure of logic and clinical "artistry," or the deductive powers of a theory-based model, the other potentially useful approach to uncovering latent principles for constructing and classifying the elements of our subject, and one to which we turn next.

Whereas the biases of statisticians in shaping data are likely to be implicit or arcane, those of theorists are explicit and straightforward. For the most part, the concepts and orientations of theorists are stated as plainly as their subject permits, although the propositions and deductions they derive therefrom rarely are as empirically clear as one might wish.

Nevertheless, as discussed in prior pages, distinguished philosophers such as Hempel (1965) and Quine (1977) consider that mature sciences must progress from an observationally based stage to one that is characterized by abstract concepts or theoretical systemizations. It is their judgment that classification alone does not make a true scientific taxonomy, and that overt similarity among attributes does not necessarily comprise a scientific category (Smith & Medin, 1981). The card catalog of the library or an accountant's ledger sheet, for example, is a well-organized classification, but hardly to be viewed as a taxonomy or a science.

The first purpose of a theoretical model is to cull the relevant from the irrelevant, to separate what predicts from what merely describes, and to discard the latter. What remains are constructs that form a parsimonious model of comparatively great explanatory power. Models derived through factor-analytic means, however, achieve simplicity mechanically, essentially by projecting data into some geometric space. If one is willing to go to the next step, to assume that the axes of this geometric space drive behavior, then one has only to name the axes to feel that something of fundamental importance has been discovered.

The characteristic that distinguishes what we term a latent theoretical as contrasted to a latent mathematical taxonomy is its success in grouping its elements according to logically consonant *explanatory* propositions. These propositions are formed when certain attributes, which have been isolated or categorized, have been shown or have been hypothesized to be dynamically or causally related to other attributes or categories. *The latent taxa comprising a theoretical nosology are not, therefore, mere collections of overtly*

similar factors or categories, but are linked or unified into a pattern of known or presumed relationships among them. This theoretically grounded configuration of relationships would be the foundation and essence of a heuristic taxonomy.

Before proceeding with our own substantive model, we should ask what it is that distinguishes a theoretically grounded personality system from one that provides a mere explanatory summary of known observations and inferences.

Simply stated, the answer lies in its power to *generate* observations and relationships other than those used to construct it. This generative power is what Hempel (1965) terms the "systematic import" of a scientific classification. In contrasting what are familiarly known as natural (theoretically guided, deductively based) and "artificial" (conceptually barren, similarity-based) classifications, Hempel (1965) wrote:

> Distinctions between natural and artificial classifications may well be explicated as referring to the difference between classifications that are scientifically fruitful and those that are not; in a classification of the former kind, those characteristics of the elements which serve as criteria of membership in a given class are associated, universally or with high probability, with more or less extensive clusters of other characteristics.
>
> Classification of this sort should be viewed as somehow having objective existence in nature, as "carving nature at the joints" in contradistinction of artificial classifications, in which the defining characteristics have few explanatory or predictive connections with other traits.
>
> In the course of scientific development, classifications defined by reference to manifest, observable characteristics will tend to give way to systems based on theoretical concepts. (pp. 116–148)

Ostensibly toward the end of pragmatic sobriety, those of an antitheory bias have sought to persuade the profession of the failings of premature formalization, warning us that we cannot arrive at the future we yearn for by lifting our science by its own bootstraps. To them, there is no way to traverse the road other sciences have traveled without paying the dues of an arduous program of empirical research. Formalized axiomatics, they say, must await the accumulation of "hard" evidence that is simply not yet in. Shortcutting the route with ill-timed theoretical systematics, such as a latent taxonomy, will lead us down primrose paths, preoccupying our attentions as we wind fruitlessly through endless detours, each of which could be averted by holding fast to an empirical philosophy or a clinical methodology.

No one argues against the view that theories that float, so to speak, on their own, unconcerned with the empirical domain or clinical knowledge, should be seen as the fatuous achievements they are and the travesty they may make of the virtues of a truly coherent nosological system. Formal theory should not be "pushed" far beyond the data, and its derivations should be linked at all points to established clinical observations. Given the vast scope of personalities as well as the extent of knowledge still to be gathered, nosological theories are best kept limited today both in their focus and in specificity. As the senior author has written elsewhere (Millon, 1987), structurally weak theories make it impossible to derive systematic and logical nosologies; this results in conflicting derivations and circular reasoning. Most nosological theories of psychopathology have generated brilliant deductions and insights, but few of these ideas can be attributed to their structure, the precision of their concepts, or their formal procedures for hypothesis derivation.

Despite the shortcomings of historic concepts of personality pathology, it is latent mathematical models and latent theories that may "facilitate a deeper seeing, a more penetrating vision that goes beyond superficial appearances to the order underlying them" (Bowers, 1977). We will turn next to a model that may provide us with this "deeper and more penetrating vision."

An Evolutionary Scaffold for Personality Theory

As noted at the beginning of this chapter, one of its major goals is to connect the conceptual structure of personology to its foundations in the natural sciences. As said previously, what is proposed herein is akin to Freud's (1895) abandoned *Project for a Scientific Psychology* and Wilson's (1975) highly controversial *Sociobiology*. Both were worthy endeavors to advance our understanding of human nature; this was to be done by exploring interconnections among disciplines that evolved ostensibly unrelated bodies of research and manifestly dissimilar languages.

We seem trapped in (obsessed with?) horizontal refinements. A search for integrative schemas and cohesive constructs that link its seekers closely to relevant observations and laws developed in more advanced fields is needed. The goal—albeit a rather "grandiose" one—is to refashion the patchwork quilt into a well-tailored and aesthetic tapestry that interweaves the diverse forms in which nature expresses itself.

And what better sphere is there within the psychological sciences to undertake such syntheses than with the subject matter of personology? Persons are the only organically integrated system in the psychological domain, evolved through the millennia and inherently created from birth as natural entities, rather than culture-bound and experience-derived gestalts. The intrinsic cohesion of persons is not merely a rhetorical construction, but an authentic substantive unity. Personological features may often be dissonant, and may be partitioned conceptually for pragmatic or scientific purposes, but they are segments of an inseparable biopsychosocial entity, as well as a natural outgrowth of evolution's progression.

What makes evolutionary principles as relevant as we propose? Owing to the mathematical and deductive insights of our colleagues in physics, we have a deeper and clearer sense of the early evolution and structural relations among matter and energy. So too has knowledge progressed in our studies of physical chemistry, microbiology, evolutionary theory, population biology, ecology, and ethology. How odd it is (is it not?) that we have only now again begun to investigate—as we did at the turn of the last century—the interface between the basic building blocks of physical nature and the nature of life as we experience and live it personally? How much more is known today, yet how hesitant are people to undertake a serious rapprochement? As Barash (1982) has commented:

> Like ships passing in the night, evolutionary biology and the social sciences have rarely even taken serious notice of each other. Although admittedly, many introductory psychology texts give an obligatory toot of the Darwinian horn somewhere in the first chapter . . . before passing on to discuss human behavior as though it were determined only by environmental factors. (p. 7)

It is clear that each evolved species displays commonalities in its adaptive or survival style. Within each species, however, there are differences in style and differences in the success with which its various members adapt to the diverse and changing environments they face. In these simplest of terms, personality would be conceived as representing the more-or-less distinctive style of adaptive functioning that an organism of a particular species exhibits as it relates to its typical range of environments. "Disorders" of personality, so formulated, would represent particular styles of maladaptive functioning that can be traced to deficiencies, imbalances, or conflicts in a species' capacity to relate to the environments it faces.

Before elaborating where these disorders arise within the human species, a few more words must be said concerning analogies between evolution and ecology, on the one hand, and personality, on the other.

During its life history an organism develops an assemblage of traits that contribute to its individual survival and reproductive success, the two essential components of "fitness" formulated by Darwin. Such assemblages, termed "complex adaptations" and "strategies" in the literature of evolutionary ecology, are close biological equivalents to what psychologists have conceptualized as personality styles and structures. In biology, explanations of a life history strategy of adaptations refer primarily to biogenic variations among constituent traits, their overall covariance structure, and the nature and ratio of favorable to unfavorable ecological resources that have been available for purposes of extending longevity and optimizing reproduction. Such explanations are not appreciably different from those used to account for the development of personality styles or functions.

Bypassing the usual complications of analogies, a relevant and intriguing parallel may be drawn between the phylogenic evolution of a species' genetic composition and the ontogenic development of an individual organism's adaptive strategies (i.e., its personality style). At any point in time, a species will possess a limited set of genes that serve as trait potentials. Over succeeding generations the frequency distribution of these genes will likely change in their relative proportions depending on how well the traits they undergird contribute to the species' "fittedness" within its varying ecological habitats. In a similar fashion, individual organisms begin life with a limited subset of their species' genes and the trait potentials they subserve. Over time the *salience* of these trait potentials—not the proportion of the genes themselves—will become differentially prominent as the organism interacts with its environments. It "learns" from these experiences which of its traits "fit" best, that is, most optimally suited to its ecosystem. In phylogenesis, then, actual gene *frequencies* change during the generation-to-generation adaptive progress, whereas in ontogenesis it is the *salience* or prominence of gene-based traits that changes as adaptive learning takes place. Parallel evolutionary processes occur, one within the life of a species, the other within the life of an organism. What is seen in the individual organism is a shaping of latent potentials into adaptive and manifest styles of perceiving, feeling, thinking, and acting; these distinctive ways of adaptation, engendered by the interaction of biological endowment and social experience, comprise the elements of what is termed as personality styles. It is a formative process in a single lifetime that parallels gene redistributions among species during their evolutionary history.

Humans are notable for unusual adaptive pliancy, acquiring a wide repertoire of "styles" or alternate modes of functioning for dealing with both predictable and novel environmental circumstances. Unfortunately, the malleability of early potentials for diverse learnings diminishes as maturation progresses. As a consequence, adaptive styles

acquired in childhood, and usually suitable for comparable later environments, become increasingly immutable, resisting modification and relearning. Problems arise in new ecological settings when these deeply ingrained behavior patterns persist, despite their lessened appropriateness; simply stated, what was learned and was once adaptive, may no longer fit. Perhaps more important than environmental diversity, then, is the divergence between the circumstances of original learning and those of later life, a schism that has become more problematic as humans have progressed from stable and traditional to fluid and inconstant modern societies.

Lest the reader assume that those seeking to wed the sciences of evolution and ecology find themselves fully on solid ground, there are numerous conceptual and methodological impediments that face those who wish to bring these fields of biological inquiry into fruitful synthesis—no less employing them to construe the styles and disorders of personality. Despite such concerns, recent developments bridging ecological and evolutionary theory are well underway, and hence do offer some justification for extending their principles to human styles of adaptation. To provide a conceptual background from these sciences, and to furnish a rough model concerning the styles of personality, normal and abnormal, four spheres in which evolutionary and ecological principles can be applied are labeled as *Existence, Adaptation, Replication*, and *Abstraction*. The first relates to the serendipitous transformation of random or less organized states into those possessing distinct structures of greater organization; the second refers to homeostatic processes employed to sustain survival in open ecosystems; the third pertains to reproductive styles that maximize the diversification and selection of ecologically effective attributes; and the fourth concerns the emergence of competencies that foster anticipatory planning and reasoned decision making. We will restrict this brief discussion to the first three principles to illustrate normal and abnormal processes. The various components of the fourth will be noted in our description of the theory's coordinated assessment instruments. A more detailed explication of "abstraction" and its related cognitive attributes may be found in the senior author's chapter of the Wiley *Handbook of Personality* (Millon & Lerner, 2002).

Aims of Existence

The following pages summarize the rationale and characteristics of the first of the three segments of the polarity model to be described. In each section we will draw on the model as a basis for establishing criteria for "normality" grounded in modern evolutionary and ecological theory.

Life Enhancement and Life Preservation: Pleasure–Pain Polarity

Two intertwined strategies are required: one to achieve existence, the other to preserve it. The aim of the first is the enhancement of life, that is, creating or strengthening ecologically survivable organisms; the aim of the second is the preservation of life, that is, avoiding events that might terminate it. Although we disagree with Freud's concept of a death instinct (Thanatos), we believe he was essentially correct in recognizing that a balanced yet fundamental biological bipolarity exists in nature, a bipolarity that has its parallel in the physical world. As he wrote in one of his last works, "The analogy of our two basic instincts extends from the sphere of living things to the pair of opposing forces—attraction and repulsion—which rule the inorganic world" (Freud 1940, p. 72).

Among humans, the former may be seen in life-enhancing acts that are "attracted" to what we experientially record as "pleasurable" events (positive reinforcers), the latter in life-preserving behaviors oriented to repel events experientially characterized as "painful" (negative reinforcers).

Existence reflects a to-be or not-to-be issue. In the inorganic world, "to be" is essentially a matter of possessing qualities that distinguish a phenomenon from its surrounding field, that is, not being in a state of entropy. Among organic beings, to be is a matter of possessing the properties of life as well as being located in ecosystems that facilitate the enhancement and preservation of that life. In the phenomenological or experiential world of sentient organisms, events that extend life and preserve it correspond largely to metaphorical terms such as pleasure and pain, that is, recognizing and pursuing positive sensations and emotions on the one hand, and recognizing and eschewing negative sensations and emotions on the other.

The pleasure–pain bipolarity not only places sensations, motivations, feelings, emotions, moods, and affects on two contrasting dimensions but also recognizes that each possesses separate and independent quantitative extremes. That is, events such as attractive, gratifying, rewarding, or positively reinforcing may be experienced as weak or strong, as those that are aversive, distressful, sad, or negatively reinforcing can also be experienced as weak or strong.

Efforts to identify specific events or experiences that fit each pole of the pleasure–pain bipolarity are likely to distract from the essential distinction. Thus, the particular actions or objects that people find pleasurable (for example, sex, sports, art, or money) are legion, and for every patient who experiences a certain event as rewarding, one can find another who experiences that same event as distasteful or painful; for example, some patients who are driven to seek attention are sexually promiscuous, whereas others are repelled by sexuality in any form. In short, categorizations based on the specific properties of what may be subsumed under the broad constructs of pain or pleasure will prove not only futile and cumbersome but misguiding as well.

Although there are many philosophical and metapsychological issues associated with the nature of pain and pleasure as constructs, it is neither our intent nor our task to inquire into them here. That they recur as a polar dimension time and again in diverse psychological domains (for example, learned behaviors, unconscious processes, emotion and motivation as well as their biological substrates) has been elaborated in another publication (Millon, 1990). Let us examine their role as constructs for articulating criteria that may usefully define normality.

An interweaving and shifting balance between the two extremes that comprise the pain–pleasure bipolarity typifies normality. Both of the following criteria should be met in varying degrees as life circumstances require. In essence, a synchronous and coordinated personal style would have developed to answer the question of whether the person should focus on experiencing only the pleasures of life versus concentrating his or her efforts on avoiding its pains.

Life Preservation: Avoiding Danger and Threat. One might assume that a criterion based on the avoidance of psychic or physical pain would be sufficiently self-evident not to require specification. As is well known, debates have arisen in the literature as to whether mental health/normality reflects the absence of mental disorder, being merely the reverse side of the mental illness or abnormality coin. That there is a relationship between health and disease cannot be questioned; the two are intimately connected, conceptually

and physically. On the other hand, to define health solely as the absence of disorder will not suffice. As a single criterion among several, however, features of behavior and experience that signify both the lack of (for example, anxiety, depression) and an aversion to (for example, threats to safety and security) pain in its many and diverse forms provide a necessary foundation upon which other, more positively constructed criteria may rest. Substantively, positive normality must comprise elements beyond mere non-normality or abnormality. And despite the complexities and inconsistencies of personality, from a definitional point of view normality does preclude non-normality.

Notable here are the contributions of Maslow (1968, 1970), particularly his hierarchic listing of "needs." Best known are the five fundamental needs that lead to self-actualization, the first two of which relate to our evolutionary criterion of life preservation. Included in the first group are the "physiological" needs such as air, water, food, and sleep, qualities of the ecosystem essential for survival. Next, and equally necessary to avoid danger and threat, are what Maslow terms the *safety needs*, including the freedom from jeopardy, the security of physical protection and psychic stability, as well as the presence of social order and interpersonal predictability.

That pathological consequences can ensue from the failure to attend to the realities that portend danger is obvious; the lack of air, water, and food are not issues of great concern in civilized societies today, although these are matters of considerable import to environmentalists of the future and to contemporary poverty-stricken nations.

It may be of interest next to record some of the normal and abnormal personalities that reflect aberrations in meeting this first criterion. For example, among those characterized in the *shy-avoidant* (SA) spectrum, the pie shape at two o'clock in Figure 1.1 (Millon 1969, 1981), we see an excessive preoccupation with threats to one's psychic security, an expectation of and hyperalertness to the signs of potential rejection that leads these persons to disengage from everyday relationships and pleasures; here we see the fundamental basis of what FFM proponents use the archaic term (neurosis) to represent. At the other extreme of this criterion we see a risk-taking attitude, a proclivity to chance hazards and to endanger one's life and liberty, a behavioral pattern characteristic of those we find in the *nonconforming-antisocial* (NA) personality spectrum (at about seven o'clock in Figure 1.1). Here there is little of the caution and prudence expected in the criterion of avoiding danger and threat; rather, we observe its opposite, a willingness to put one's safety in jeopardy, to play with fire and throw caution to the wind.

Life Enhancement: Seeking Rewarding Experiences. At the other end of the "existence polarity" are attitudes and behaviors designed to foster and enrich life, to generate joy, pleasure, contentment, fulfillment, and thereby strengthen the capacity of the individual to remain vital and competent physically and psychically. This criterion asserts that existence/survival calls for more than life preservation alone; beyond pain avoidance is pleasure enhancement.

This criterion asks us to go at least one step further than Freud's parallel notion that life's motivation is chiefly that of "reducing tensions" (that is, avoiding/minimizing pain), maintaining thereby a steady state, if you will, a homeostatic balance and inner stability. In accord with our view of evolution's polarities, we would assert that normal humans are driven also by the desire to enrich their lives, to seek invigorating sensations and challenges, to venture and explore, all to the end of magnifying if not escalating the probabilities of both individual viability and species replicability.