Robert R. Holt has suggested that there are three principal types of nonconformity: criminal, psychotic, and creative (Janis et al. 1969). Each type of nonconformity can be distinguished by its social consequences; yet in some cases the three types of nonconformity can be interrelated. Holt cites, for example, Raskolnikov, the protagonist of Dostoevsky’s Crime and Punishment—a psychotic who committed a crime that he thought was an act of creative nonconformity.

Holt’s observation raises an interesting question: Are the three types of nonconformity only superficially similar, or are the underlying personality dynamics for each the same? Is there a common deep structure for deviance, a g factor for nonconformity?

Although I had heard arguments about the parallels between creativity and psychoticism and between creativity and delinquency, I had never taken these arguments seriously. First of all, each of these phenomena—criminality, creativity, and craziness—constitutes a broad behavioral category that can be further divided into distinguishable subcategories. Second, each subcategory undoubtedly can be shaped by any of a number of predisposing influences. Despite this complexity, a general deviance factor may still influence all these types of nonconformity. This chapter describes my search for this general deviance factor.

The chapter is divided into two major sections. The first reviews the literature linking the three types of deviance. The second discusses deviance within a sociobiological framework and then describes my own theoretical and psychometric studies of nonconformity.

I would like to acknowledge the help of several colleagues who were involved in the construction of the original socioanalytic personality scales: Catherine M. Busch, Jonathan M. Cheek, Robert Hogan, David H. Schroeder, Robert Smither, and Alan B. Zonderman. My wife, Carolyn, helped prepare the illustration of the socioanalytic model. None of these people are responsible for errors of any form in this chapter.
Definitions

Norms and Normality

A nonconformist—whether criminal, crazy, or creative—deviates from some norm; hence norm needs to be defined. Norm has two distinct yet interrelated meanings. First, a norm describes a range of psychological functioning that is typical for a population. By this definition, any mental processes or behaviors that are common or frequent are normal; rare or unusual mental processes and behaviors are abnormal. A certain ambiguity exists in this definition because of the fuzziness of terms like range, typical, frequent, and rare. Consequently, some examples of normality are clear-cut (dreaming is normal; hallucinating is not); others, such as superstitious thinking, are more difficult to classify. Nonetheless, serious criminality, high-level creativity, and pronounced psychoticism are all abnormal by this definition.

According to this definition, norms are descriptive. They simply tell us which psychological processes are common or usual. A second definition of norm is prescriptive. A norm may tell us how we ought to think or behave. By this definition, criminality, craziness, and creativity differ in their normality. Criminality is clearly immoral and therefore abnormal; craziness is not usually considered immoral, only undesirable; creativity is often considered desirable but rarely labeled moral. Sometimes moral norms run counter to descriptive norms—for example, resisting group pressure to do what is right. Many psychologists regard conformity to descriptive norms as immoral and pathological; see Hogan and Emler (1978). More often, moral norms reflect descriptive norms because typical behavior usually promotes the welfare of a culture (Hogan, Johnson, and Emler 1978). Not discounting the importance or moral norms, this chapter will use the first (descriptive) definition of norms and normality. By this definition criminality, creativity, and craziness all clearly represent deviance from norms.

Creativity

Barron and Harrington (1981) have reviewed several common definitions of creativity. Some definitions require tangible, socially valuable products if a person is to be called creative. Others describe creativity as an ability, or what Schubert and Biondi (1977) call problem-solving creativity. A third kind of creativity refers to a general cognitive style and personality syndrome, often seen in artists, involving ideational fluency; conceptual overinclusion; preference for ambiguity, complexity, and asymmetric patterns; a tendency to form many and unusual associations; idiosyncratic thinking; odd sensory and perceptual experiences; feelings of restlessness and the inclination toward impulsive outbursts; preference for solitude; rejection of common social values; broad interests; autonomy and independence of judgment; and attraction to artistic and aesthetic experiences. This third definition seems most fundamental in a psychological sense to the essence of creativity; hence the chapter uses that definition.

Criminality

A simple legal definition of criminality—that an individual is a criminal if found guilty of breaking a law—misses entirely the psychology of criminal behavior. For our purposes, criminality will be defined as a resemblance to what Pavlov called a choleric response to frustration. Choleric types are anxious and emotional and express their emotionality with aggressive outbursts, lawbreaking, and other antisocial behavior.

Craziness

Craziness is a folk concept that describes bizarre, unintelligible thinking and/or behavior. Craziness is unintelligible because it is typically self-defeating and foreign to normal (common) ways of thinking and behaving. Because the context of this chapter is deviance from social norms, the folk concept craziness is more appropriate than medical definitions. Technically, the focus here will be on the schizophrenias, or, more generally, psychoticism—a loss of contact with socially defined reality. To a lesser extent, the chapter looks at anxiety neurosis—a prevailing sense of fear without sufficient reason for being afraid—and at impulse disorders.

Creativity, Creativity, and Craziness

Creativity and Craziness

The idea that creativity is akin to so-called divine madness has a long history, going back at least as far as Plato. Even today schizophrenics in some cultures enjoy privileged social status as shamans or prophets with alleged precognitive powers and creative insight (see Erlenmeyer-Kimling and Parandowski 1966). Galton (1869) and Lombroso (1891) were among the first scientific researchers to conclude that mental illness often accompanies creative genius. Their books generated so many studies confirming the link between creativity and craziness that some investigators (see Claridge 1972)
argue that further documentation is unnecessary. This short review of this literature cannot possibly cover all the relevant work in the area. The purpose of the present section is, first, to counter arguments against the link between creativity and craziness, and second, to describe some representative recent findings in the area.

People who deny the connection between creativity and craziness often argue that the pain, confusion, poor reality testing, and general maladjustment of someone in the throes of schizophrenia obviously differ from the inventiveness, resourcefulness, ingenuity, originality, and productivity of creative persons. The counterargument is that this claim focuses on outcomes or products (adaptation, productivity) rather than psychological dynamics. Barron and Harrington (1981) carefully distinguish three types of schizophrenia and creativity: (1) schizotaxia and originotaxia (inherited neurological anomalies responsible for ideational fluency, overinclusion, and cognitive complexity); (2) schizotypia and originotypia (personality organizations resulting from both the aforementioned neurological anomalies coupled with certain social learning experiences); and (3) schizophrenia and creativity (the social outcomes of the two types of personalities). Although the social outcomes of creativity and schizophrenia may indeed be very different, the two may be similar at the level of neurology and personality. Differences in outcomes may be due either to quantitative differences in the neurological anomaly or to the presence of a moderating variable (such as intelligence or ego strength) that shapes unusual thought processes into socially useful products.

Another kind of argument denying a commonality between creativity and craziness comes from humanistic psychologists who claim that creativity is essential to overall psychological health (for example, Maslow 1968). In this vein, Schubert and Biondi (1975) suggest that the apparent similarities between creativity and mental illness are superficial and unfounded—that to label originality as illness is to accept Freudian and puritan biases about conformity. Schubert and Biondi (1977) cite studies linking creativity to self-esteem, dominance, confidence, self-assertion, persistence, and self-discipline.

Several responses can be made to Schubert and Biondi’s comments. First, the primary reason for their position appears to be philosophical rather than empirical. As humanists they are prone to assume that creativity is linked to mental health. Furthermore, their critique of Freud, puritanism, and the Protestant work ethic lies within the moral level of discourse (that is, norms as moral prescriptions rather than empirical descriptions). Second, they are more concerned with a problem-solving type of creativity than an artistic type of creativity; they state that it is the former that “seems to be associated less with reports of maladjustment by psychiatric pathology” (1977, p. 193). This chapter is concerned with artistic, not problem-solving creativity. Finally, in Schubert and Biondi’s own literature review, there is as much evidence against their own thesis as for it.

Three types of research support the link between creativity and craziness. The first shows that persons diagnosed with mental disorder score higher than normals on creativity tests. The second shows a correlation between measures of psychopathology and creativity in relatively normal individuals. A third type of research demonstrates that highly creative persons score high on measures of psychopathology. Examples of each type of research follow.

Hasenfus and Magaro (1976) review studies describing the performance of schizophrenics on three kinds of creativity measures: (1) *ideational fluency* (naming as many ways as possible in which two objects are similar), (2) *preference for complex and asymmetrical designs*, and (3) the *tendency to see unusual associations*. Hasenfus and Magaro suggest that schizophrenics’ well-documented tendency toward overinclusion on object classification tasks (their finding many ways to group objects in a single category; see Payne and Friedlander 1962) is conceptually equivalent to ideational fluency. Schizophrenics’ preference for complexity is supported by two studies. Lewis (1971) found that certain types of schizophrenics score well above the mean on the Revised Art Scale, a well-known measure of creativity and preference for complexity. Davids (1964) showed that chronic schizophrenics liked ambiguity in auditory communications significantly more than two groups of normal subjects. Finally, the proposition that schizophrenics are prone to give more unusual associations than normals is strongly supported by the literature (Buss 1966; Higgins, Mednick, and Philip 1965; Higgins, Mednick, and Thompson 1966).

The next body of research concerns the correlation between psychopathological and creative tendencies in the normal population. Farmer (1974) found that the psychoticism score on the Eysenck Personality Questionnaire (EPQ) correlated highly with the originality score on Guilford’s consequences test. Woody and Claridge (1977) compared all the scales of the EPQ (Extraversion, Neuroticism, Psychoticism, and Lie) to the total number of responses and the number of unique responses to the five sections of Wallach and Wing’s creativity test. The correlations between Extraversion, Neuroticism, and the ten creativity scores were essentially zero. Psychoticism correlated .32 to .45 with the five total number scores and .61 to .68 with the five uniqueness scores. The Lie scale had a steady, significant, but small (about -.2) correlation across the creativity measures. (More will be said about the significance of this finding in the section on creativity and criminality.) Turning to a slightly different methodology, Claridge (1973) found that a number of psychophysiological measures that had been found previously to discriminate psychotics from controls were significantly related to scores on the Guilford divergent-thinking tests.
By far the greatest number of studies on the similarity between psychopathology and creativity deal with pathological personality traits and psychotic thinking in highly creative individuals. As noted earlier, this research was inspired primarily by Galton’s (1869) *Hereditary Genius* and Lombroso’s (1891) *The Man of Genius*. A rash of similar pathographies of genius followed (Barron 1965), supporting Dryden’s famous remark, “Great wits are sure to madness near allied.” Havelock Ellis’s (1904) careful study of over nine hundred eminent persons listed in the Dictionary of National Biography failed to support Dryden’s claim, however. Ellis showed that the incidence of full-blown psychosis in his select group was no greater than in the population at large. A similar, more recent study (Goertzel and Goertzel 1962) confirms Ellis’s findings about psychosis in eminent persons.

Although Goertzel and Goertzel did not find a higher psychosis rate in their eminent group, they did find a number of other behavioral eccentricities and pathologies to be common. Furthermore, eminence or genius is not precisely creativity. White (1930), reanalyzing Ellis’s data, found that people involved in creative work (artists, poets) showed more abnormal traits than noncreatives (soldiers, sailors).

Through the years, others have noted again that creative persons tend to have certain psychopathological traits (Juda 1949; Waldéer 1965). Drevdahl and Cattell (1958) found their creative artists and writers to be generally emotionally unstable. Creatives tend to use alcohol more than noncreatives (Barron and Harrington 1981; Goodwin 1973; Karlsson 1978; Martindale 1972). Andreason and Canter (1974) found that 73 percent of their creative writers suffered some psychiatric disorder, compared with 20 percent of their controls. Andreason and Powers (1975) demonstrated that creative writers show certain similarities to manic patients and that, consistent with Hasenfus and Magaro’s reasoning, creatives score highly on the Goldstein-Scheerer Object Sorting Test for schizophrenia. In fact, the writers scored higher on this test of overinclusion than did the schizophrenics in the study. In a similar study, using the Lovibond version of the Goldstein-Scheerer test, Dykes and McGhie (1976) found that both schizophrenics and creatives received high overinclusion scores. Götz and Götz (1979a) found that artists score higher than nonartists on Eysenck’s Psychoticism scale; furthermore, successful artists score even higher on the scale than do less successful artists (Götz and Götz 1979b).

No literature review on creativity would be complete without mentioning the most extensive study of creativity yet undertaken. Between 1957 and 1962, living-in assessment studies of highly creative writers, architects, and mathematicians were conducted at the Institute of Personality Assessment and Research (IPAR) at Berkeley, California. These studies have produced a number of lasting contributions to our understanding of creativity, but the most important finding for the purposes of this chapter is that the creative writers scored in the upper 15 percent of the general population on all measures of psychopathology on the MMPI. The creative architects were less deviant but still higher than the general population on the MMPI indexes of psychopathology (Barron 1965). In particular, highly creative persons tend to obtain high scores on the MMPI scales Sc (schizophrenic) and Pd (psychopathic deviate) (Barron 1972b; MacKinnon 1962). What is unusual about these creative persons’ scores is that they are accompanied by high scores on the ego-strength scale of the MMPI and by high scores for social effectiveness on the California Psychological Inventory (CPI). This led Barron (1965) to remark that creatives are both sicker and healthier psychologically than normals; in other words, they are much more troubled psychologically but have far greater resources to deal with their troubles.

The high scores obtained by creatives on Sc link creativity to schizophrenic thought disorder; the high scores on Pd link creativity to criminality (the original criterion for construction of the Pd scale). This leads us to the next section on creativity and criminality.

### Creativity and Criminality

The relationship between creativity and criminality can be examined in three ways: (1) the creative potential of incarcerated criminals or identified delinquents, (2) the correlation between criminal and creative tendencies in normals, and (3) criminal or psychopathic behavior in creative persons.

To find creativity in criminals appears prima facie unlikely, yet several studies address the issue. In a noteworthy study, Panton (1958) administered the MMPI to 1,313 inmates at a North Carolina prison and found that the group peaked on the Pd and Sc scales—precisely the scales on which the creative individuals studied at IPAR peaked. A second kind of evidence comes from criminals’ scores on infrequency or validity scales of various inventories. Producing rare responses on such scales may simply reflect carelessness but can also indicate creative thinking (see Gough 1968 for a description of low CPI Communality scores; Laufer, Skoog, and Day, 1982; and Weiss 1981). Laufer (1980) found that 201 inmates at the Maryland State Penitentiary scored high on the Infrequency scale of Holland’s Vocational Preference Inventory; and Laufer, Johnson, and Hogan (1981) found low scores on the CPI Communality scale for a group of convicted murderers and a group convicted of drug-related crimes. These findings are consistent with Woody and Claridge’s (1977) research showing a correlation between the EPQ Lie scale and creativity.

For a direct test of creativity in a criminal population, I applied Weiss’s (1981) CPI regression equation for predicting creativity to CPI scores from a group of seventy convicted murderers. The equation (Creativity = 65.96
+ .63 Capacity for Status – .34 Sociability – .37 Good Impression – 1.15 Communality + .61 Empathy) was designed to predict creativity across different samples, and in fact predicted creativity in the architects, research scientists, and mathematicians studied at IPAR. The murderers scored appropriately low on Communality and Good Impression, but were about average on the other three scales. As a result, their creativity score turned out to be 49.6—almost exactly on the mean for Weiss’s standardization group. This finding suggests that murderers are no more—but also no less—creative than architects, research scientists, and mathematicians in the general population.

Lynn’s (1971) work supports the idea that there are individual differences in creativity in a criminal population. He suggests that there are three types of psychopaths: aggressive, who cannot control their impulses and are eventually caught and incarcerated; inadequate, who just drift along playing petty confidence tricks; and creative, many of whom manage to avoid being caught in their lawbreaking.

Several studies have assessed creativity in delinquents. Finch (1977) compared delinquent, emotionally disturbed, accelerated, and normal children on the Torrance test of verbal creativity, and concluded that socially and emotionally maladjusted children often have higher creative potential than adjusted children. Anderson and Stoffer (1977) found that nondelinquents outperform delinquents on several verbal portions of the Torrance tests, but delinquents score higher on the figural-elaboration portion of the tests. Rosenthal and Conway (1980) found no significant differences between nondelinquents and delinquents on the Torrance tests of unusual uses and nonverbal circles. However, Kaltounis and Higdon (1977) found that verbal flexibility and originality scores from the Torrance tests were related to records of school offenses. It appears then that the evidence for the proposition that criminals and delinquents have creative potential is mixed and only partially supportive.

The second kind of research looks at associations between criminal tendencies and creativity in normal populations. First, Eysenck and Eysenck (1976) state that their Psychoticism scale is related to both psychosis and criminality. Thus the studies previously cited finding a correlation between the Psychoticism scale and creativity (Farmer 1974; Götz and Götz 1979a,b; Woody and Claridge 1977) link criminality to creativity. Doherty and Corrini (1976) found Kohlberg moral-maturity scores to correlate with creativity, fluency, and uniqueness scores on the Wallach-Wing test in a group of college women. This appears to contradict the relationship between criminal (nonmoral) behavior and creativity until one realizes that higher scorers on the Kohlberg index are postconventional. This means that high scorers in the Kohlbergian order are rebellious, smug, uninhibited, cynical, and vindictive; that is, they are—not unlike criminals—self-centered rather than group oriented. See Hogan (1970) and Johnson and Hogan (1981) for this often overlooked point about Kohlberg’s system.

Finally, we come to studies indicating that creative persons have antisocial or criminal traits. Furcon, Baehr, and Zolik (1966) and Cashdon and Welsh (1966) found that creative individuals are nonconformists. Hammer (1966) described the artists in his study as rebellious; Bachtold (1980) found that the creative women in her study had a tendency to be troublesome and unconventional. Drevdahl (1956) found creative students to score high on the radicalism scale for the 16PF, and Drevdahl and Catsell (1958) found that creative writers and artists scored high on the 16PF radicalism and bohemianism scales. Barron (1965) reports that creative architects, writers, and mathematicians score lower on noncreatives on the CPI Socialization scale (originally constructed to assess a delinquent disposition) and on the MMPI Pd scale. Finally, Lynn (1971) notes that many creative people, especially in the arts, have led psychopathic sexual lives.

These studies show that what originally looked like a major conceptual leap between criminality and creativity may actually be smaller than was thought. Next, let us consider the link between criminality and craziness.

Criminality and Craziness

Eysenck and Eysenck (1976) have suggested that criminals and psychotics are similar along their psychoticism and neuroticism dimensions, and that the major difference between the two groups is that criminals are more extraverted. Lynn (1971) also draws this comparison between the two groups. Panton’s (1958) large-scale MMPI study of prison inmates indicated marked psychopathology, especially in the schizophrenia dimension. Lauffer’s (1980) study of vocational interests in prison inmates showed low Masculinity and Status scores, suggesting that his population was depressed and troubled. His findings replicate previous personality and clinical studies of incarcerated felons (Toch 1979; Yochelson and Samenow 1976).

To close this brief section, I might note that criminality is not a category of the Diagnostic and Statistical Manual (DSM III). Nonetheless, many criminals would be classified as having personality disorders. The most recent version of the DSM has emphasized the uniqueness of the personality disorders by placing them on a separate axis; still, it is clear that psychopathic, sociopathic, and borderline personalities can easily be both psychopathological and criminal. Also, a number of disorders listed on Axis I are likely to bring an individual into trouble with the law. These include the substance-abuse disorders; paraphilias; and disorders of impulse control (pathological gambling, kleptomania, pyromania).
The foregoing literature review describes a number of studies indicating an empirical relationship among criminal, creative, and crazy forms of deviance. The next section provides a possible explanation for this empirical relationship.

A Sociobiological View of Nonconformity

Sociobiology is the study of the hereditary basis of social behavior. This section discusses evidence for a common genetic basis for criminality, creativity, and craziness; and the role of nonconformity in evolutionary adaptation.

Genetic Basis

This section first reviews the evidence for the genetic basis of the three types of nonconformity separately, and then the evidence linking the types together.

Crowe (1974) reports that at the time of his study, eight studies of criminal twins had been conducted. All the studies implicated hereditary liability for criminality, yet also suggested that life experiences play a role in the development of criminal behavior. Crowe’s own study shows that heredity plays a role in the development of the antisocial personality. In another study, Hutchings and Mednick (1975) find a clear association for criminality between biological fathers and their sons who had been adopted by a normal family. Bohman (1978) investigated the genetic influence on alcoholism and criminality and concluded that hereditary factors strongly determine susceptibility to alcoholism and also predispose an individual toward criminality.

Barron and Harrington (1981) review the literature on the inheritance of divergent thinking. The consensus of these studies (Barron 1972a; Barron and Parisi 1977; Domino, Walsh, and Reznikoff 1976; Pezzullo, Thorsen, and Madaus 1972) is that twin resemblances in verbal divergent thinking do not show zygosity effects, but that there is a distinction between verbal and figural creativity, the basis of which is genetic.

That schizophrenia has a genetic basis is now beyond a reasonable doubt. Supporting evidence includes both pedigree studies showing how schizophrenia runs in families and identification of biochemical abnormalities in schizophrenics. A review of this literature can be found in Heston (1970), Shields (1968), Slater (1968), and Zerbin-Rüdin (1967).

The connection between creativity and craziness at the genetic level has been impressively documented by Karlsson (1968, 1970). After studying seven generations of Icelandic pedigrees, he found a high incidence of great creative achievement in many relatives of schizophrenics. In a study of foster children whose biological mothers were schizophrenic, Heston (1966) found that half the children were schizophrenic and half were highly artistic and imaginative. McNeil (1971) also found that mental illness and creativity in a group of adoptees was associated with mental illness of their biological parents.

The genetic link between psychopathology and criminality can be found in Eysenck and Eysenck’s study of the psychoticism dimension. They found that high scorers on this dimension have both psychotic and criminal traits and that genetic factors are responsible for 81 percent of all differences between subjects. The other type of evidence connecting psychopathology and criminality at the genetic level comes from the well-known studies of patients with the chromosome constitution XYY. Patients with the XYY syndrome have a pronounced disposition toward personality deviation and criminality (Nielson and Tsuboi 1969).

To my knowledge, research that directly examines the genetic association between criminality and creativity has not been conducted, although Eysenck and Eysenck’s high scorers on Psychoticism show unusual association of ideas, indicating creative tendencies.

Evolutionary Adaptation

If schizophrenia is genetically determined and the thought disorder associated with it is maladaptive, why does schizophrenia resist selective pressures and persist in the population? One simple answer is the Hardy-Weinberg law of population genetics, which states that even the most lethal gene will persist in the population at a fixed frequency if there is no selection against the heterozygous form. Most behavioral geneticists have not been content with this purely statistical explanation, however, and speculate that the genes involved in the expression of schizophrenia cannot be exclusively maladaptive.

Huxley et al. (1964) initially suggested that the schizophrenic gene was linked to adaptive genes such that schizophrenics had a higher resistance to wound shock, visceral perforation, and infections. Jarvik and Chadwick (1973), however, state that evidence for physiological advantages associated with schizophrenia is lacking. A more plausible explanation for the persistence of schizophrenia is that the disorder, like height and hair color, is polygenic, allowing for different degrees of expression (see Dobzhansky 1964). Partial expression of the syndrome leads to originality and creativity, which is adaptive; the genes for schizophrenia are transmitted by this successful group.
Evidence for the polygenic position comes from several sources. McConaghy and Clancy (1968) found that allusive thinking (overinclusion) is common in normals, more pronounced in schizophrenics, and genetically transmitted in both groups. Heston (1970) found that one-third of first-degree relatives of schizophrenics are schizoid, suggesting a continuum of the disorder. Gottesman and Shields (1968) found that the concordance rates of schizophrenia in monozygotic twins varied as a function of the severity of psychotic reaction, and that the MMPI profiles of non-ill persons and their schizophrenic co-twins were similar, with both groups peaking on the Sc scale. Finally, Claridge (1972), using evidence from many sources including his own psychophysiological data, argues that schizophrenia is a polygenetically determined continuum, its high and low ends leading to maladaptive behavior and the middle to creative, adaptive behavior.

Jarvik and Chadwick (1973) take a slightly different view of the adaptive features of schizophrenia. They argue that it is the schizoid-paranoid personality features of schizophrenia that are adaptive, particularly the paranoid features. Seclusive, suspicious, nonpsychotic carriers of the schizophrenic genes have a psychological advantage for survival in the threatening and competitive world our species inhabits. Jarvik and Chadwick note that the Greek hero, Odysseus, is a prototype of the successful schizoid-paranoid (see Stanford, 1968).

In a partially expressed form, then, schizophrenia can lead to creativity (Claridge 1972) or wariness and prudence (Jarvik and Chadwick 1973). In both cases a nonpsychotic carrier possesses a trait that is personally adaptive, and this increases the probability that the genes will be passed on.

One can also look at deviance and nonconformity within an ecological, cultural context. Because we are a social species and have depended on each other for our very survival, we are compelled to seek help and support from the other members of our group as well as to compete with them in a Darwinian sense (see Hogan, Johnson, and Emery 1978). We cannot survive without the support of our groups; therefore, if we fail to contribute to the welfare of the group, the group will not function viably, and we in turn will perish. Thus we can ask: How do deviance and nonconformity contribute to the welfare of the group?

Tiger and Fox (1971, pp. 52-54) provide an insightful answer to this question. They assume, first, that the capacity to obey the rules of culture is biologically determined and is distributed on a normal curve. Most people will be predisposed to learn quickly and conform to cultural rules; but there will always be a few rebels, so constituted that no amount of socialization will make them conform. Most people will be conformists because nature is essentially conservative: most mutations—whether genetic or cultural—are deleterious. Of the uneducable persons who resist socialization, most fall by the wayside. Occasionally, however, if conditions are right, they stumble on an innovation that, ironically, more efficiently preserves the status quo. Only occasionally do innovations lead to a truly different, new way of life. More often, an innovation is simply an improved way of accomplishing an old aim.

Tiger and Fox suggest that a culture will tolerate its “radical politicians, bloody-minded intellectuals, criminals, religious maniacs, unconventional artists, military geniuses, visionary poets, reformist priests, and revolutionary philosophers” because sometimes “their innovative behavior pays off.” They argue that “a principle that runs throughout the evolution of organic life” is “that a species is essentially conservative but that it must allow for innovation. To strike a balance between these two forces is the quintessential evolutionary challenge” (p. 53; see also Hammer and Zubin 1968, for a similar view).

Tiger and Fox also argue that the disposition to conform or deviate is ultimately located in the central nervous system. Acknowledging that training has a great deal to do with the development of a conforming or rebellious personality, they emphasize that people’s dispositions to learn or not to learn are present at birth. They cite as supporting evidence Pavlov’s experiments with dogs: some dogs were easy to condition, but others resisted all attempts at conditioning. They also note that strains of easily trainable or recalcitrant animals can be bred.

Paul MacLean has also toyed with a model of social deviance based on neurology; he suspects that nonconformity is caused by a defect in the central core of the brain (Holden 1979). Normally the central core controls imitative (MacLean uses the term isopraxic) behavior. Examples of isopraxic behavior include the spread of gobbling in a turkey pen and the contagious applause and hooting at political rallies. MacLean notes that damage to the central core of a turkey’s brain not only inhibits the isopraxic gobble response but also interferes with the turkey’s ability to stick with the group. He speculates that a defect in brain development in some people may contribute to high-level creativity. He cites as a possible example Einstein, who in addition to being a creative genius was also an eccentric nonconformist and a loner. Thus “some individuals may become creative because of a constitutional incapacity for imitation . . . a defect of the nervous system that might interfere with the intercommunicative isopraxic process” (quoted in Holden 1979, p. 1067).

Whatever the specific hereditary and neurological mechanisms, deviance plays a functional role in society. A certain amount of nonconformity actually helps the human species to perpetuate itself. A psychometric model describing the place of personality deviance within the context of social roles and normal personality is described next.
Socioanalytic Theory

Socioanalytic theory (Hogan, Johnson, and Emler 1978; Hogan and Johnson 1981; Hogan 1982; Johnson, in preparation) is a comprehensive personality theory designed to explain the role of personality in human evolution. The theory assumes that the three most important problems affecting fitness in our species are (1) achieving status, (2) maintaining social support, and (3) successfully specializing in a role required by the culture. The theory relies heavily on the definitive work of Norman (1963), whose often replicated peer-rating study shows that five dimensions adequately describe the universe of personality traits: Extroversion/Surgency, Emotional Stability, Conscientiousness, Agreeableness, and Culture. The theory also builds on the work of Holland (1973), who describes the world of vocational-role specialization in six categories: Realistic, Investigative, Artistic, Social, Enterprising, and Conventional.

Within the socioanalytic theory, Norman’s dimensions were reconceptualized and renamed as follows:

**Ascendance** (formerly Norman’s Extraversion/Surgency) refers to ambition, energy, initiative, and leader-like qualities.

**Adjustment** (Emotional Stability) refers to absence of anxiety, depression, and guilt.

**Rule attunement** (Conscientiousness) refers to respect for authority, social rules, and contracts.

**Likeability** (Agreeableness) refers to tolerance, cooperativeness, warmth.

**Intellectence** (Culture) refers to how bright and clever one appears.

These personality dimensions are assumed to underlie biological success. That is, persons who are ambitious, well adjusted, attuned to the rules, pleasant, and smart will achieve status and popularity; and this in turn increases their biological fitness.

Two additional components were added to the model to account for differences in vocational-role specialization. **Sociability** is a part of the Ascendance-Extraversion-Surgency complex, and refers simply to whether one prefers working alone or with other people. Holland’s Social and Enterprising vocational types represent high Sociability; Realistic and Investigative types represent low Sociability. **Ego Control** (see Block and Block 1979) refers to one’s disposition to control one’s ideational and behavioral impulses; see also McCrae and Costa’s (1980) concept of openness to experience. Persons with high ego control are self-controlled, orderly, conventional, traditional, conservative, and predictable. High ego control defines Holland’s Conventional type. Persons with low ego control are impulsive, disorganized, unconventional, experimenting, innovating, and unpredictable. Low ego control defines Holland’s Artistic type.

Although Holland’s model was designed to describe modern occupations, it can also describe social roles probably present near the beginning of our species’ evolutionary history: hunters (Realistic), shamans (Investigative), artisans (Artistic), healers (Social), leaders (Enterprising), and lorekeepers (Conventional). Socioanalytic theory assumes that stabilizing selection has been operating on the genes predisposing people toward either end of the Sociability and Ego-Control dimensions such that all degrees of expression on both dimensions are found; this distributes people into the six role categories required by a culture. Because cultures are essentially conservative (Tiger and Fox 1971), we would expect to find more Conventional than Artistic occupations in society; this is precisely what Gottfredson, Holland, and Gottfredson (1975) found. If evolutionary selective pressures are shaping the joint distribution of Sociability and Ego Control such that people’s personalities lead them into roles required by the culture, we should find that the distribution of personality characteristics in a population should match roughly the corresponding distribution of vocational-role requirements. Again, this is what Gottfredson, Holland, and Gottfredson found. (See Buss and Plomin (1975) for evidence on the heritability of sociability and ego control.)

Turning now to the measurement of the seven personality dimensions in socioanalytic theory, three different measures have been constructed: (1) a set of scales using items from the CPI; (2) an adjective-rating form with 49 Likert scales, each anchored by a pair of adjectives; and (3) an objective self-report form using 425 original items. The details of scale construction and validation are presented in Hogan and Johnson (1981), Hogan (1982), and Johnson (in preparation). Our principal concern here is a finding that appeared over and over during the validation of the scales: Rule Attunement (the opposite of criminality) and Ego Control (the opposite of creativity) are intimately related.

First, the two scales correlate highly and significantly across the three measures, despite no overlap in item content (.36 for the CPI version, .62 for the adjective-rating form, and .59 for the socioanalytic self-report scales). Second, the scores tend to covary across naturally existing groups. Table 4-1 shows that murderers and heavy marijuana users score relatively low on the CPI scales for both rule attunement and ego control; policemen tend to score relatively high on both dimensions. Rule Attunement and Ego Control also tend to show similar correlations with external criteria (see Table 4-2).

Finally, two separate factor analyses failed to separate Rule Attunement from Ego Control. A factor analysis of the CPI scales yielded three inter-
interpret factors, and loadings from Rule Attunement and Ego Control alone defined the second factor. The 425 items on the socioanalytic self-report inventory are grouped a priori into clusters that define facets within the seven dimensions. Rule Attunement contains facets called Caution, Dependability, and Trouble-Avoiding; Ego Control contains facets called Convergent Thinking, Predictability, Planful, Experience-Avoiding, and Thrill-Avoiding. Examples of items for these facets are given in Table 4-3, along with various intercorrelations. A factor analysis of all facets scores from all seven dimensions yielded six interpretable factors. Five of the factors were defined cleanly and precisely by loadings from the facets assigned a priori to the other five dimensions; the third factor in the analysis was clearly defined by loadings from the three Rule-Attunement facets and five Ego-Control facets.

The repeated failure to separate Rule Attunement and Ego Control was frustrating, for I considered the two dimensions conceptually unique. Divergent thinking, enjoyment of novelty, spontaneity, a changeable temperament, and enjoyment of sensory stimulation appeared to me to have nothing to do with rule flouting, irresponsibility, and lawbreaking. Through the pursuit of novel experiences, the individual low on ego control may occasionally fail to meet social expectations about morality and proper behavior; but this is not necessarily the case. The empirical data disconfirmed my assumptions, however, and suggested that criminality and creativity are linked by a common personality dimension.

Ego control—a psychoanalytic expression coined by Block and Block (1979)—was a term originally adopted for convenience, without endorsing Freudian theory (see Laufer, Johnson, and Hogan 1981, p. 181). Experience indicates that Ego Control may be the best term for this dimension.

and that Freud was essentially correct about the common origin of creativity and antisocial behavior. Relaxation of control on the id leads to the primary-process mentation (that is, mental imagery, unusual associations, lack of linear time constraints) responsible for creativity and also to release of the two major antisocial drives—lust and aggression.

The literature review in the first section of this chapter, together with the data presented in this section, strongly suggests a general factor for devi-
Table 4-3  
Intercorrelations among Rule-Attunement and Ego-Control Facets

<table>
<thead>
<tr>
<th>Dimension/Facet</th>
<th>Sample Item</th>
<th>Intercorrelation Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rule Attunement</td>
<td>I would do almost anything on a dare. (R)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>I rarely make a promise I don't keep. I have never been in trouble with the law.</td>
<td>2 .27</td>
</tr>
<tr>
<td>Ego Control</td>
<td>I have a good imagination. (R)</td>
<td>3 .47 .35</td>
</tr>
<tr>
<td></td>
<td>I don't like surprises.</td>
<td>4 .17 .01 .20</td>
</tr>
<tr>
<td></td>
<td>I like to have a schedule and stick to it. I like a lot of variety in my life. (R)</td>
<td>5 .11 .02 .10 .17</td>
</tr>
<tr>
<td></td>
<td>I would enjoy sky diving. (R)</td>
<td>6 .40 .41 .39 .18 .32</td>
</tr>
</tbody>
</table>

Intercorrelations

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>.17</td>
<td>.01</td>
<td>.02</td>
<td>.10</td>
<td>.17</td>
</tr>
<tr>
<td>2</td>
<td>.17</td>
<td>.01</td>
<td>.20</td>
<td>.25</td>
<td>.32</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>.01</td>
<td>.20</td>
<td>.25</td>
<td>.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>.10</td>
<td>.10</td>
<td>.17</td>
<td>.22</td>
<td>.25</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>.17</td>
<td>.17</td>
<td>.22</td>
<td>.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>.17</td>
<td>.17</td>
<td>.22</td>
<td>.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>.25</td>
<td>.25</td>
<td>.25</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Sample consists of diverse student and adult groups. Total N = 268. (R) indicates item scoring is reversed.

Criminality, Creativity, and Craziness within the Socioanalytic Model

Adjectives around perimeter are from circumplex models of personality and adjectives under Galen types are Eysenck's. See Hogan and Johnson (1981); underlined letters are Holland's types: R = Realistic, I = Investigative, A = Artistic, S = Social, E = Enterprising, and C = Conventional.

Figure 4-1. Criminality, Creativity, and Craziness within the Socioanalytic Model

Galen types; Holland types; Ego Control; and criminality, creativity, and craziness—to associate all these concepts may be a case of creative insight or crazy overinclusion. Only future research—probably in behavior genetics—will tell. Perhaps now that the commonality among the three types has been described, future research should examine the ways a general personality disposition toward nonconformity differentiates into these three very different phenomena.
References


—. The creative personality: Akin to madness. Psychology Today, 1972b, 6, 42-44, 84-85.


Farmer, E.W. Psychoticism and person-orientation as general personality characteristics of importance for different aspects of creative thinking. BSc thesis, University of Glasgow, 1974.


Gottfredson, G.D.; Holland, J.L.; and Gottfredson, L.S. The relation of


_____. Personality characteristics of successful artists. Perceptual and Motor Skills, 1979b, 49, 919-924.


Johnson, J.A. Personality from an ethological and evolutionary perspective. In preparation.


