

Dissociative Tendencies and Dissociative Disorders

John F. Kihlstrom, Martha L. Glisky, and Michael J. Angiulo

Although dissociative disorders are relatively rare, dissociative experiences are rather common in everyday life. Dissociative tendencies appear to be modestly related to other dimensions of personality, such as hypnotizability, absorption, fantasy proneness, and some facets of openness to experience. These dispositional variables may constitute diatheses, or risk factors, for dissociative psychopathology, but more complex models relating personality to psychopathology may be more appropriate. The dissociative disorders raise fundamental questions about the nature of self and identity and the role of consciousness and autobiographical memory in the continuity of personality.

The dissociative disorders consist of a group of syndromes whose common core is an alteration in consciousness affecting memory and identity (for recent reviews, see Cardena, Lewis-Fernández, Bear, Pakianathan, & Spiegel, in press; Kihlstrom, 1992, in press; Kihlstrom, Tataryn, & Hoyt, 1993; Spiegel & Cardena, 1991). As listed in the revised third edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R)*; American Psychiatric Association, 1987), these disorders include psychogenic amnesia, entailing a retrograde amnesia for a limited segment of autobiographical memory; psychogenic fugue, consisting of a retrograde amnesia covering the person's entire life, plus (at least in the classic cases) a loss of personal identity; multiple personality, in which an individual appears to present two or more different personalities, alternating in control over experience, thought, and action; and depersonalization and derealization, in which the person perceives him- or herself, or the external world, to be unreal or otherwise fundamentally changed. The forthcoming *DSM-IV* renames some of these syndromes (e.g., *dissociative amnesia* for psychogenic amnesia and *dissociative identity disorder* for multiple personality disorder), refines the existing diagnostic criteria somewhat, and adds a few new subcategories (e.g., *acute stress disorder* and *trance and possession disorder*), but their essential characterization remains unchanged.

The category of dissociative disorder is almost unique in descriptive psychopathology because the label of the syndrome

identifies the (hypothetical) process underlying the disorders: The dissociative disorders are caused by dissociation.¹ The first theoretical explanation of dissociation was presented by Janet (1889, 1907) in his descriptive and theoretical accounts of hysteria (for secondary accounts see Ellenberger, 1970; E. R. Hilgard, 1977; Perry & Laurence, 1984; Kihlstrom, 1992, in press; Kihlstrom et al., 1993; van der Hart & Friedman, 1989; van der Kolk & van der Hart, 1989). Janet analyzed mental life into a large number of content-specific elementary structures, called *psychological automatisms*, which combine perception and action. Ordinarily, the individual's repertoire of psychological automatisms is bound together into a single, unified stream of consciousness. But in periods of stress a particular automatism, or set of related structures, could be split off from the rest, continuing to function but isolated from conscious awareness and voluntary control. Thus, dissociated psychological automatisms continued to influence experience, thought, and action but did so subconsciously, as hysterical accidents. This condition was labelled *desaggregation* (in English, *dissociation*), hence the diagnostic label. The essential characteristic, or stigma, of hysteria was held to be a narrowing of the field of consciousness, construed as analogous to the distinction between central and peripheral visual fields.

Janet (1889, 1907) thought that dissociation occurred in response to stress, but he also believed that certain people were constitutionally predisposed to dissociative disorder (his term for this was *degenerescence*). By virtue of their genetic endowment, certain individuals lacked the psychological strength to bind all their psychological automatisms into a single, unified consciousness; this left them prone to experiencing pathological dissociation, especially when weakened by physical illness, exhaustion, or intoxication. Thus, though placing primary emphasis on the role of trauma in dissociation, Janet's is actually a theory of diathesis and stress (Monroe & Simons, 1991). The individual's premorbid vulnerability to dissociative disorders provides one link between dissociative psychopathology and personality.

John F. Kihlstrom, Martha L. Glisky, and Michael J. Angiulo, Department of Psychology, University of Arizona.

Preparation of this article was supported by Grant #MH-35856 from the National Institute of Mental Health, which also supported some of the research reported herein.

We thank Terrence Barnhardt, Melissa Berren, Lawrence Couture, Heather Law, Shelagh Mulvaney, Victor Shames, Michael Valdisseri, and Susan Valdisseri for their comments. Special thanks go to Kenneth Bowers, Edward Frischholz, Steven Lynn, David Spiegel, Auke Tellegen, and David Watson for their incisive comments on an earlier version of this article.

Correspondence concerning this article should be directed to John F. Kihlstrom, Amnesia & Cognition Unit, Department of Psychology, University of Arizona, Tucson, Arizona 85721. Electronic mail should be sent via Internet to kihlstrm@ccit.arizona.edu. or via Bitnet to kihlstrm@arizvms.

¹ Other diagnostic categories sharing this property are the conversion disorders and the somatization disorders—which, along with the dissociative disorders, constitute what has been known as hysteria, and an argument has been made for moving the conversion disorders from the somatoform to the dissociative category (see Kihlstrom, 1992, in press).

Dissociative Tendencies in Normal Personality

A common assumption in research on dissociative disorders is that there is "a continuum from the minor dissociations of everyday life to major forms of psychopathology such as multiple personality disorder" (Bernstein & Putnam, 1986, p. 728). From this point of view, the dissociative disorders are not characterized by any single symptom or set of symptoms that qualitatively differentiates normal from abnormal personality but rather by quantitative differences in the frequency, extent, or intensity of dissociative symptoms displayed by individuals. Individuals at the high end of this dissociative continuum either suffer from a dissociative disorder or are at high risk for dissociative disorder in the future.

Accordingly, Bernstein and Putnam (1986) devised the Dissociative Experiences Scale (DES), a self-report instrument containing 28 items tapping disturbances of awareness, memory, and identity, including depersonalization and derealization. In the standard form of the DES, subjects make marks on visual analogue scales indicating the percentage of time that they experience each symptom. The sum of these scores is then divided by 28 to give an estimate of the percentage of time that the individual is experiencing some aspect of dissociation. As might be expected, Bernstein and Putnam (1986) found that patients with multiple personality disorder and posttraumatic stress disorder scored higher on the DES than did college students, normal adults, or psychiatric patients carrying diagnoses other than dissociative disorder (see also Armstrong & Loewenstein, 1990; Carlson et al., 1993; Coons, Bowman, & Milstein, 1988; Ensink & van Otterloo, 1989; Frischholz et al., 1990; Ross, Norton, & Anderson, 1988; Steinberg, Rounsaville, & Cicchetti, 1991). This finding establishes the discriminative validity of the DES as a measure of dissociation.

Distribution of Dissociative Tendencies

Although Bernstein and Putnam (1986) tested only a small number of normal subjects, other investigators have administered the DES to samples that come closer to population norms. For example, Ross, Joshi, and Currie (1990) used a stratified random sample of the adult population of greater Winnipeg, Manitoba, Canada. The distribution of DES scores in this sample was strongly skewed, with the majority of subjects reporting having dissociative experiences 10% of the time or less. DES scores were essentially unrelated to a host of demographic, household, and socioeconomic variables, and there were no gender differences. However, the frequency of reported dissociative experiences did decrease systematically with age (see also Ross, Ryan, Anderson, Ross, & Hardy, 1989). Despite the lack of normality, the distribution of DES scores is clearly continuous, with no sharp breaks or hints of bimodality.

Where is the threshold between normal and pathological dissociation? Steinberg et al. (1991), using scores on the Structured Clinical Interview for *DSM-III-R* Dissociative Disorders (SCID-D; Steinberg, 1993; Steinberg, Rounsaville, & Cicchetti, 1990; for an alternative diagnostic instrument, see Ross, Heber, et al., 1989) as the diagnostic criterion, found that DES cut-scores of 15 or 20 (corresponding to reports of dissociative symptoms occurring 15–20% of the time) yielded high levels

of sensitivity and specificity when discriminating patients with dissociative disorder from both normal subjects and other psychiatric patients. This cutscore has also been favored by Ross et al. (Ross, Heber, et al., 1989; Ross, Joshi, & Currie, 1991; Ross, Ryan, Voigt, & Eide, 1991). However, Carlson et al. (1993), on the basis of a discriminant functional analysis in a very large sample of patients, favored a cutscore of 30.

On the other hand, use of either cutscore may greatly overestimate the incidence or risk of pathological dissociation in the population at large. Thus, Ross et al. (1990) found that nearly 12.8% of their adult sample scored above 20 on the DES, and 5.0% scored above 30. It seems highly unlikely that more than one person out of 10, or even one out of 20, should qualify for a formal diagnosis of dissociative disorder. Moreover, studies of college students—for better or worse the most common population used in investigations of normal personality—and younger individuals yield even higher estimates. In the study by Ross, Ryan et al. (1989), 15.4% of a sample of Canadian college students had DES scores over 20 (see also Ross, Ryan et al., 1991), and the median DES score for a sample of Canadian junior-high-school students was 17.7. Frischholz and his colleagues (Frischholz et al., 1991; Frischholz, Braun, et al., 1992), testing students at the University of Illinois, Chicago Circle, did not report the proportion of subjects passing either cutpoint, but the fact that their sample yielded a mean DES score above 20 suggests that it was very high. At the University of Arizona, a sample collected by Angiulo and Kihlstrom (1993) yielded 19% of subjects exceeding a cutscore of 20 and 6% of subjects exceeding a cutscore of 30.

The fact that high-school and college students score higher on scales indicative of psychopathology is no surprise to anyone who has had experience with the Minnesota Multiphasic Personality Inventory, but it does remind us to be cautious when applying cutpoints derived from adults, and especially adult psychiatric patients, to other sorts of people. The variability of DES scores across study populations underscores the need for a normative study of dissociative experiences in a sample that is representative of the population at large, and for further study of dissociative experiences in particular segments of the population.

The Structure of Dissociation

Although the internal consistency of the DES is quite satisfactory, it is not a perfectly homogeneous scale. Although Fischer and Elnitsky (1990) obtained a one-factor solution in a sample of college students, most investigators have found evidence for multiple factors in the DES. Ross, Joshi, and Currie (1991) performed an exploratory factor analysis (orthogonal rotation) on their adult sample and extracted three underlying dimensions: absorption and imaginative involvement, amnesia and other activities of dissociated states, and depersonalization-derealization. Ray, June, Turaj, and Lundy (1992) obtained a somewhat more differentiated solution consisting of seven factors: fantasy and absorption, segment amnesia (inability to remember some aspect of one's life), depersonalization, in situ amnesia (in which one "awakes to the current situation," p. 421), different selves, denial of dissociation, and critical events amnesia (in which one cannot remember important life events).

A later confirmatory factor analysis showed that five of these factors (all but denial of dissociation and critical events amnesia) were replicable across three different samples (Ray, Faith, & Mathieu, 1992). At the University of Arizona, Angiulo and Kihlstrom (1993) obtained from five to seven factors across several different large samples of college students. Factor analyses of the Perceptual Alterations Scale (PAS) and the Questionnaire on Experiences of Dissociation (QED) yield similar structures (Fischer & Elnitsky, 1990; Ray, Faith, & Mathieu, 1992; Ray, June, et al., 1992).

Alternative Assessment Instruments

Although the DES is the most popular questionnaire measure of dissociative tendencies, it is not the only instrument available for this purpose. Similar screening devices have been developed by others, including the PAS (Sanders, 1986), the QED (Riley, 1988; for factor analyses, see Angiulo & Kihlstrom, 1993; Ray, June, et al., 1992), and the Dissociation Questionnaire (Vanderlinden, Van Dyck, Vandereycken, & Vertommen, 1991).² Studies of American college-student populations indicate that the DES, PAS, and QED are all closely comparable. Nadon, Hoyt, Register, and Kihlstrom (1991) administered modified versions of the DES and PAS twice: once in a large-group survey session and once before the subjects completed a group hypnosis procedure. The two questionnaires were highly correlated, $r_s = .83$ and $.82$ in the survey and hypnosis sessions, respectively. Angiulo and Kihlstrom (1993) found a correlation of $.91$ between modified versions of the DES and the QED.

Recently, Steinberg, Rounsaville, Buchanan, and Cicchetti (1992) introduced a new screening instrument, the Mini SCID-D (M-SCID-D), available in both clinician-administered and self-administered forms. Unlike the DES, QED, or PAS, the M-SCID-D is based on the *DSM* criteria for dissociative disorders and tends to yield a tentative diagnosis that can be confirmed (or ruled out) by the SCID-D. In terms of face validity, the content of the M-SCID-D appears to be more focused on experiences of dissociation per se and less saturated with normal experiences of absorption and imaginative involvement than the DES, QED, or PAS. Angiulo and Kihlstrom (1993) found a correlation of $.86$ between modified versions of the DES and the self-administered M-SCID-D.

Dissociation and Hypnosis

Janet (1889, 1907) and other early authorities believed that there was a close association between hysteria and hypnosis. Hysterical patients were highly responsive to suggestion (or at least so it was claimed), and the major phenomena of hypnosis appeared to closely resemble hysterical stigmata: anesthesia, paralysis, posthypnotic suggestion and other compulsive automatisms, and especially amnesia. The fact that hypnotic phenomena could be induced by means of suggestion inspired Janet's and Freud's psychogenic theories of hysteria and of neurosis in general. For Janet, especially, hypnosis reflected the same dissociative process observed in hysteria. Even today, some investigators construe hypnosis as a kind of laboratory model of hysteria, in which controlled experiments can illuminate general processes that are obscured by the idiosyncracies of actual

clinical case (Kihlstrom, 1979; Kihlstrom & McGlynn, 1991). This is true both for those who embrace some version of dissociation theory (Bowers & Davidson, 1991; E. R. Hilgard, 1977; Kihlstrom, 1984) and those who reject it (Sarbin & Coe, 1979; Spanos & Gottlieb, 1979).

Janet (1889, 1907) apparently believed that only hysterical patients were hypnotizable; at least, he (and Charcot) favored such individuals as subjects in his demonstrations of hypnosis. But now we know that the capacity for hypnosis is more widely distributed in the population: It is a skill that normal people possess to varying degrees and that can be measured by standardized psychological tests (Balthazard, 1992; E. R. Hilgard, 1965; Perry, Nadon, & Button, 1992; Woody, Bowers, & Oakman, 1992). Among adults, hypnotizability appears to be remarkably stable, showing test-retest correlations of $.60$ or more over periods of 10 to 25 years (Piccione, Hilgard, & Zimbardo, 1989).

By itself, the phenotypic similarity between hypnosis and hysteria is not enough to link the dissociative disorders with normal personality. An additional link would be provided by evidence that patients with dissociative disorder are highly hypnotizable. The first investigator to obtain such evidence was Bliss (1986), who found that patients with multiple personality disorder showed higher levels of hypnotizability than did controls. This is also true for patients suffering from posttraumatic stress disorder (Spiegel, 1984; Spiegel, Hunt, & Dondershine, 1988; Stutman & Bliss, 1985). Most recently, Frischholz, Lipman, Braun, and Sachs (1992) found that patients with dissociative disorder scored higher on standardized measures of hypnotizability than did either college-student controls or patients with schizophrenia, anxiety disorder, or mood disorder (see also Spiegel et al., 1988).

Patients with dissociative disorder display relatively high levels of hypnotizability, but is hypnotizability actually a specific risk factor for dissociative disorder? Such a proposal has been made by Bliss (1986) and Spiegel et al. (1988), but Frankel, an early proponent of this view (Frankel, 1976), has more recently expressed doubt (Frankel, 1990)—partly because of the diffuse manner in which the dissociation construct is used in contemporary clinical practice (a problem that has troubled dissociation before; see E. R. Hilgard, 1977) and partly because hypnosis has components other than dissociation. At this point, there is no evidence indicating that hypnotizable subjects are more at risk for developing dissociative disorders than are nonhypnotizable subjects or that they are more at risk for dissociative disorder than for other forms of psychopathology. Moreover, even with such data in hand, we would not understand the underlying mechanism linking the two. It might be that hypnotizable individuals have a propensity or ability to dissociate defensively under stress.

On the other hand, as Bowers (1991) warned, it may be that hypnotizable individuals are more responsive to therapeutic or cultural suggestions, implicit or explicit, that they suffer from multiple personality or some other dissociative disorder. From this point of view, dissociative disorder and hypnosis are not

² Cardeña and Spiegel (1993) developed a checklist of dissociative symptoms for use in investigating episodic dissociative states.

linked because they share an underlying dissociative mechanism. Rather, they are linked because hypnotizable individuals can be convinced, through suggestion, that they have a particular disorder—just as they can be convinced, through suggestion, that they have been regressed to an earlier age.

Within the normal, college-age population, however, the association between hypnotizability and dissociative tendencies is not particularly strong. Nadon et al. (1991) obtained correlations of .07 and .14 between hypnotizability and scores on modified versions of the PAS and DES, respectively. Frischholz, Lipman, et al. (1992) obtained a correlation of .12, and Segal and Lynn (1992–1993) obtained a correlation of .17, between hypnotizability and scores on the DES. Although such correlations may reach statistical significance, they clearly indicate that the relationship between hypnotizability and dissociative tendencies is not strong.

Dissociation, Absorption, Fantasy, and Openness

The link between dissociative disorders and normal personality can be extended further by examining a construct that is associated with hypnosis: absorption. In the search for personality correlates of hypnotizability, the first half-century of effort, relying on standard inventories, yielded little or nothing. Investigators met with somewhat more success, however, when they began to assess individual differences in the tendency to have experiences that resemble hypnosis outside of a formal hypnotic encounter (e.g., Shor, 1960). E. R. Hilgard (1965) suggested that the failure of the earlier research to yield significant personality correlates of hypnotizability stemmed from the fact that the standard personality inventories failed to sample dimensions of personality that were relevant to hypnosis.

Evidence favoring this speculation was soon provided by Tellegen and Atkinson (1974), who developed a scale of openness to absorbing and self-altering experiences (*absorption*, for short), commonly known as the Tellegen Absorption Scale (TAS), which consistently (if modestly) correlates with hypnotizability (for a review, see Roche & McConkey, 1990). Interestingly, absorption is unrelated to the superfactors of introversion–extraversion and stability–neuroticism (or, alternatively, positive and negative emotionality) that saturate most personality inventories. More recently, the construct of absorption has been assimilated into an even broader dimension of personality, openness to experience (Coan, 1972; McCrae & Costa, 1985), which is one construal of the fifth factor in the “Big Five” structure of personality. However, openness to experience, at least as measured by the Openness scale of the NEO Personality Inventory (NEO-PI; Costa & McCrae, 1992), contains a large element of sociopolitical liberalism that is essentially unrelated to absorption proper; nor is intellectance, another construal of the fifth factor, closely related to absorption (Glisky & Kihlstrom, 1993; Glisky, Tataryn, Tobias, Kihlstrom, & McConkey, 1991).

A related construct, also an offshoot of hypnosis research, is the *fantasy-prone personality*—a label referring to individuals characterized by a “deep, profound, and long-lasting involvement in fantasy and imagination” (Lynn & Rhue, 1988, p. 35; see also Lynn & Rhue, 1986; Lynn & Sivec, 1992; Rhue & Lynn, 1989; Wilson & Barber, 1981, 1983). Fantasy proneness is obviously related to J.R. Hilgard’s (1974, 1979) emphasis on

imaginative involvements characteristic of highly hypnotizable individuals. Not surprisingly, fantasy proneness is highly correlated with absorption; like absorption, it is modestly correlated with hypnotizability and imagery (Lynn & Rhue, 1986, 1987; Rhue & Lynn, 1989). Fantasy proneness is measured on a continuous dimension, but it has some of the characteristics of a personality syndrome or type. For example, Wilson and Barber (1981, 1983) identified fantasy-prone persons (also called *fantasizers*) as those who score in the upper 2%–4% of the population on the Inventory of Childhood Memories and Imaginings. Although Wilson and Barber (1981, p. 31) claimed that fantasy-prone persons “live much of the time in a world of their own making”, fantasy proneness is not necessarily pathological. Many, if not most, fantasy-prone individuals are very well adjusted (Lynn & Rhue, 1988). Even so, fantasy proneness is correlated with measures of schizotypy or psychosis proneness (Lynn & Rhue, 1988; Rhue & Lynn, 1987a). There appears to be no study testing the hypothesis (Lynn, Rhue, & Green, 1988; Rhue & Lynn, 1990) that fantasizers are specifically at risk for dissociative psychopathology.

Originally, absorption was defined as the subject’s “full commitment of available perceptual, motoric, imaginative, and ideational resources to a unified representation of the attentional object” (Tellegen & Atkinson, 1974, p. 274). Later (and without substantial change to the contents of the absorption scale), absorption was redefined as

a disposition to enter, under conducive circumstances, psychological states that are characterized by marked restructuring of the phenomenal self and world. These more or less transient states may have a dissociated or an integrative and peak-experience-like quality. They may have a “sentient” external focus, or may reflect an inner focus on reminiscences, images, and imaginings. (Tellegen, 1992, p. 1)

(See also Roche & McConkey, 1990, and Tellegen, 1981.) An oblique factor analysis of TAS items (Tellegen, 1992) revealed six intercorrelated facets: responsiveness to engaging stimuli, synesthesia, feelings of enhanced cognition, oblivious or dissociative involvement, vivid reminiscence, and feelings of enhanced awareness.

Such qualities would certainly seem to set the stage for developing a dissociative disorder. Unfortunately, there are as yet no comparative studies of absorption in different diagnostic groups or of absorption as a risk factor for psychopathology. However, measures of absorption and dissociative tendencies are clearly related. For example, Nadon et al. (1991) found substantial correlations between the TAS and the PAS ($r_s = .61$ and $.64$) and between the TAS and the DES (both $r_s = .70$) in nonhypnotic and hypnotic contexts, respectively. On the face of it, the fact that absorption correlates so highly with dissociation indicates that there is substantial continuity between normal personality and psychopathology. On the other hand, it should be understood that the DES, PAS, and QED are all heavily loaded with items tapping normal states of absorption and imaginative involvement. From this perspective, the observed link between dissociation and absorption may be an artifact of shared item content. If so, the theoretical significance of the correlation between absorption and dissociation is unclear.

Angiulo and Kihlstrom (1993), in a series of studies of college students, addressed this issue in two ways. In two samples, sub-

jects completed modified versions of the TAS and the DES. The DES item pool was decomposed into absorption, depersonalization, and dissociation subscales on the basis of the factor analysis reported by Ross, Joshi, and Currie (1991). In the first sample, the subscale intercorrelations were as follows: absorption versus depersonalization, $r = .64$; depersonalization versus dissociation, $r = .45$; and absorption versus dissociation, $r = .44$. The correlations of these subscales with the TAS varied greatly: for DES absorption, $r = .80$; for DES depersonalization, $r = .64$; and for DES dissociation, $r = .40$. A similar pattern was obtained in the second sample. Among the DES subscales, the correlations were as follows: absorption versus depersonalization, $r = .65$; depersonalization versus dissociation, $r = .42$; and absorption versus dissociation, $r = .47$. The correlations with the TAS were as follows: DES absorption, $r = .82$; DES depersonalization, $r = .67$; and DES dissociation, $r = .42$. Dissociative tendencies are related to absorption, but the relationship weakens when the absorption component is eliminated from dissociation.

Another perspective on the relationship between dissociation and normal personality is provided by Watson and Harrison, who administered the DES (and other measures of dissociation) along with the NEO-PI (David Watson, personal communication, April 8, 1993). DES scores were positively correlated with measures of both neuroticism and openness, suggesting that dissociative disorder reflects high levels of both absorption (a component of openness) and neuroticism (Auke Tellegen, personal communication, March 14, 1993). In line with what has been found with hypnotizability (Glisky et al., 1991; Glisky & Kihlstrom, 1993), the correlations with those openness facets closely related to absorption and hypnotizability (fantasy, aesthetics, and feelings) were substantially higher (r s ranged from .20 to .35) than the correlations with those facets closely related to liberalism (r s ranged from $-.04$ to .12).

Dissociation in Psychopathology and in Personality

Demonstrating the validity of a personality construct begins with the construction of an appropriate assessment device and continues with the establishment of a nomological net encompassing two broad types of relations: relations between constructs that are theoretically related to each other and relations between these constructs and observables. If the construct in question is dissociative tendency, construed as a dimension of normal personality, then we can see the broad outlines of such a net in the research reviewed here.

First, tendencies toward pathological dissociation appear to be adequately measured by such screening instruments as the DES, PAS, QED, and M-SCID-D. The correlations among these scales, and their ability to predict criterion variables (and, in some cases, to predict the same criterion variables), reveal the outlines of a nomological net. The DES and M-SCID-D, at least, are related to the occurrence of actual dissociative disorder. Patients carrying a diagnosis of dissociative disorder (or the conceptually related posttraumatic stress disorder) are more hypnotizable than other patients and normal controls. Dissociative tendencies are related to absorption, imaginative involvement, and fantasy proneness. Absorption, imaginative involvement, and fantasy proneness are related to hypnotizabil-

ity. Taken as a whole, this pattern of relationships provides *prima facie* evidence for a link between pathological dissociation and certain attributes of normal personality.³

A Dissociative Diathesis?

It is possible that dimensions of normal personality, such as absorption, fantasy proneness, and even hypnotizability, constitute risk factors, or diatheses, for pathological dissociation (for a review of the diathesis-stress concept, see Monroe & Simons, 1991). In the general form of the diathesis-stress model, certain individuals carry a vulnerability to psychopathology which, when activated by a stressor, eventuates in an episode of mental illness. Diathesis and stress are complementary, such that little stress, or even none at all, is needed to activate a substantial diathesis; more moderate amounts of diathesis require substantial stress for an illness episode to occur; in the absence of a certain level of stress, the individual may never experience illness at all. In cases of substantial diathesis, the individual shows poor premorbid adjustment, indicating that the diathesis itself is inherently pathological. Diatheses may be, but are not necessarily, biological in nature; stressors may be, but are not necessarily, environmental.

The hypothesis that absorption, fantasy proneness, and hypnotizability reflect a dissociative diathesis is an interesting one, but it is far from proven. In the first place, there is nothing inherently pathological about these characteristics, even when displayed at very high levels, and there is no reason to think that individuals who are high on these dimensions are at increased risk for dissociative disorder or any other form of psychopathology. And, for that matter, there is nothing inherently dissociative about these dimensions either. For example, absorption can involve either an external or an internal focus, and the experience

³ The net may be further elaborated by the possibility that fantasy proneness (and presumably absorption as well), hypnotizability, and dissociative disorder all have their origin in childhood experiences of abuse, trauma, deprivation, and neglect. Many, if not most, patients with dissociative disorder report childhood histories marked by trauma, abuse, neglect, and deprivation (Spiegel & Cardena, 1991). Interestingly, many normal subjects who are high in hypnotizability (J. R. Hilgard, 1979; Nash & Lynn, 1986) or fantasy proneness (Lynn & Rhue, 1988; Rhue & Lynn, 1987b) also report experiencing high levels of physical punishment as children. Unfortunately, the available empirical evidence simply does not warrant such a conclusion. In the first place, the connection between these characteristics and childhood trauma is based entirely on retrospective self-reports, which are themselves problematic (Brewin, Andrews, & Gotlib, 1993; Pearson, Ross, & Dawes, 1992; Yarrow, Campbell, & Burton, 1970). Moreover, even if a specific link were found between dissociative disorder and childhood trauma, this is definitely not the case for hypnotizability and fantasy proneness. J. R. Hilgard (1979) found many hypnotizable subjects who experienced only low or moderate levels of childhood punishment; she also found that many hypnotizable individuals enjoyed considerable parental support and encouragement for their imaginative involvements. Similarly, Rhue and Lynn (1987b; Lynn & Rhue, 1988) found that the childhood imaginative activities of many of their adult fantasizers were fostered by their parents. Apparently, as J. R. Hilgard (1979) has suggested, there are alternate paths to hypnotizability, absorption, and fantasy; only some of these may lead, under certain circumstances, to dissociative disorder.

can be either dissociative or integrative in nature. Similarly, hypnotic experiences may be dissociative in nature, but this is not necessarily the case. Another possibility is that absorption, fantasy proneness, and hypnotizability are irrelevant to the individual's vulnerability to mental illness but instead shape the form of psychopathology should an illness episode occur. Thus, for example, high-absorption individuals may be no more likely to experience psychopathology than their nonfantasizing counterparts, but in response to a pathological interaction of diathesis and stress, they may be more likely to display symptoms of dissociation rather than depression or schizophrenia—especially if their absorption is of a dissociative rather than an integrative nature.

The Unity of Personality

Although the problem of dissociative diathesis may be of primary concern to psychopathologists, the dissociative disorders have implications for personality researchers as well. Specifically, they raise important questions about the unity of personality and about the relations among personality, identity, self-concept, and autobiographical memory. Recall that the syndrome of multiple personality is diagnosed when two or more different personalities appear to inhabit the same person, alternating in control over experience, thought, and action, and separated by a symmetrical or asymmetrical amnesic barrier. This situation provides an extra puzzle for personality theory. Conventional approaches to personality attempt to account for stable, consistent individual differences in cognition, emotion, motivation, and behavior that are observed between people. They appear to assume, at least implicitly, a unity to personality. But now it appears that personality theory must be prepared to account for individual differences within people as well.

In genuine cases of fugue and multiple personality, shifts in identity are accompanied by shifts in the accessibility of autobiographical memory (Schacter & Kihlstrom, 1989). With the onset of fugue, the person starts a new record of autobiographical memory that replaces the premorbid one; when the fugue resolves, memories for the fugue are lost along with the new identity, but the premorbid memories are recovered, leaving the person with a permanent lacuna in his or her personality history. In multiple personality these shifts continue, back and forth among two, three, or more ego states, so that each of them builds up a record of autobiographical memory that is continuous within each personality but discontinuous across them. In some cases, of course, the amnesic barriers separating the various personalities are asymmetrical, so that the experiences of one personality may be accessible to another but not vice versa. This only deepens the mystery of how episodic memory is organized so as to provide the individual with a more or less continuous record of his or her past actions and experiences.

Of course, the temporal and situational flexibility of behavior has been an issue for some time (Cantor & Kihlstrom, 1987; Mischel, 1968; Peterson, 1968), but not even the staunchest situationist has claimed that identity, as opposed to attitudes and behavior, varies from time to time and place to place. In any event, the inconsistencies of fugue and multiple personality bring the underlying consistencies of normal personality into bold relief. Regardless of how much our experience, thought,

and action may vary from time to time and place to place, an underlying unity persists: We appreciate the differences between now and then, and between here and there, and we know that regardless of these changes we remain the same person. In this way, the dissociative disorders remind us that identity and selfhood are the fundamental problems of personality.

References

- American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed., rev.). Washington, DC: Author.
- Angiulo, M. J., & Kihlstrom, J. F. (1993). *Dissociative experiences in a college population*. Manuscript in preparation, University of Arizona.
- Armstrong, J. G., & Loewenstein, R. J. (1990). Characteristics of patients with multiple personality and dissociative disorders on psychological testing. *Journal of Nervous & Mental Disease*, 178, 448–454.
- Balthazard, C. G. (1992). The hypnosis scales: Some fundamental issues still unresolved. *International Journal of Clinical & Experimental Hypnosis*, 41, 47–73.
- Bernstein, E. M., & Putnam, F. W. (1986). Development, reliability, and validity of a dissociation scale. *Journal of Nervous & Mental Disease*, 174, 727–735.
- Bliss, E. L. (1986). *Multiple personality, allied disorders, and hypnosis*. New York: Oxford University Press.
- Bowers, K. S. (1991). Dissociation in hypnosis and multiple personality disorder. *International Journal of Clinical & Experimental Hypnosis*, 39, 155–170.
- Bowers, K. S., & Davidson, T. M. (1991). A neodissociative critique of Spanos' social-psychological model of hypnosis. In S. J. Lynn & J. W. Rhue (Eds.), *Theories of hypnosis: Current models and perspectives* (pp. 105–143). New York: Guilford Press.
- Brewin, C. R., Andrews, B., & Gotlib, I. H. (1993). Psychopathology and early experience: A reappraisal of retrospective reports. *Psychological Bulletin*, 113, 82–98.
- Cantor, N., & Kihlstrom, J. F. (1987). *Personality and social intelligence*. Englewood Cliffs, NJ: Prentice-Hall.
- Cardena, E., Lewis-Fernández, R., Bear, D., Pakianathan, I., & Spiegel, D. (in press). Dissociative disorders. In *DSM-IV sourcebook*. Washington, DC: American Psychiatric Press.
- Cardena, E., & Spiegel, D. (1993). Dissociative reactions to the San Francisco Bay area earthquake of 1989. *American Journal of Psychiatry*, 150, 474–478.
- Carlson, E. B., Putnam, F. W., Ross, C. A., Torem, M., Coons, P., Dill, D. L., Loewenstein, R. J., & Braun, B. G. (1993). Validity of the Dissociative Experiences Scale in screening for multiple personality disorder: A multicenter study. *American Journal of Psychiatry*, 150, 1030–1036.
- Coan, R. W. (1972). Measurable components of openness to experience. *Journal of Consulting & Clinical Psychology*, 39, 346.
- Coons, P. M., Bowman, E. S., & Milstein, V. (1988). Multiple personality disorder: A clinical investigation of 50 cases. *Journal of Nervous & Mental Disease*, 176, 519–527.
- Costa, P. T., Jr., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI)* [Manual]. Odessa, FL: Psychological Assessment Resources.
- Ellenberger, H. F. (1970). *The discovery of the unconscious: The history and evolution of dynamic psychiatry*. New York: Basic Books.
- Ensink, B. J., & van Otterloo, D. (1989). A validation study of the DES in the Netherlands. *Dissociation*, 2, 221–223.
- Fischer, D. G., & Elmitzky, S. (1990). A factor analytic study of two scales measuring dissociation. *American Journal of Clinical Hypnosis*, 32, 201–206.
- Frankel, F. H. (1976). *Hypnosis: Trance as a coping mechanism*. New York: Plenum Press.

- Frankel, F. H. (1990). Hypnotizability and dissociation. *American Journal of Psychiatry*, *147*, 823-839.
- Frischholz, E. J., Braun, B. G., Sachs, R. G., Hopkins, L., Schaeffer, D., Lewis, J., Leavitt, F., Pasquotto, J. N., & Schwartz, D. R. (1990). The Dissociative Experiences Scale: Further replication and validation. *Dissociation*, *3*, 151-153.
- Frischholz, E. J., Braun, B. G., Sachs, R. G., Schwartz, D. R., Lewis, J., Schaeffer, D., Westergaard, C., & Pasquotto, J. (1991). Construct validity of the Dissociative Experiences Scale (DES): I. The relation between the DES and other self-report measures of dissociation. *Dissociation*, *4*, 185-188.
- Frischholz, E. J., Braun, B. G., Sachs, R. G., Schwartz, D. R., Lewis, J., Schaeffer, D., Westergaard, C., & Pasquotto, J. (1992). Construct validity of the Dissociative Experiences Scale (DES): II. Its relationship to hypnotizability. *American Journal of Clinical Hypnosis*, *35*, 145-152.
- Frischholz, E. J., Lipman, L. S., Braun, B. G., & Sachs, R. G. (1992). Psychopathology, hypnotizability, and dissociation. *American Journal of Psychiatry*, *149*, 1521-1525.
- Glisky, M. L., & Kihlstrom, J. F. (1993). Hypnotizability and facets of openness. *International Journal of Clinical & Experimental Hypnosis*, *41*, 112-123.
- Glisky, M. L., Tataryn, D. J., Tobias, B. A., Kihlstrom, J. F., & McConkey, K. M. (1991). Absorption, openness to experience, and hypnotizability. *Journal of Personality & Social Psychology*, *60*, 263-272.
- Hilgard, E. R. (1965). *Hypnotic susceptibility*. New York: Harcourt, Brace, & World.
- Hilgard, E. R. (1977). *Divided consciousness: Multiple controls in human thought and action*. New York: Wiley-Interscience.
- Hilgard, J. R. (1974). Imaginative involvement: Some characteristics of the highly hypnotizable and the nonhypnotizable. *International Journal of Clinical & Experimental Hypnosis*, *22*, 138-156.
- Hilgard, J. R. (1979). *Personality and hypnosis: A study of imaginative involvement* (rev. ed.). Chicago: University of Chicago Press.
- Janet, P. (1889). *L'automatisme psychologique* [Psychological automatism]. Paris: Felix Alcan.
- Janet, P. (1907). *The major symptoms of hysteria*. New York: Macmillan.
- Kihlstrom, J. F. (1979). Hypnosis and psychopathology: Retrospect and prospect. *Journal of Abnormal Psychology*, *88*, 459-473.
- Kihlstrom, J. F. (1984). Conscious, subconscious, unconscious: A cognitive perspective. In K. S. Bowers & D. Meichenbaum (Eds.), *The unconscious reconsidered* (pp. 149-211). New York: Wiley Interscience.
- Kihlstrom, J. F. (1992). Dissociative and conversion disorders. In D. J. Stein & J. Young (Eds.), *Cognitive science and clinical disorders* (pp. 247-270). San Diego, CA: Academic Press.
- Kihlstrom, J. F. (in press). One hundred years of hysteria. In S. J. Lynn & J. W. Rhue (Eds.), *Dissociation*. New York: Guilford Press.
- Kihlstrom, J. F., & McGlynn, S. M. (1991). Experimental research in clinical psychology. In M. Hersen, A. E. Kazdin, & A. S. Bellack (Eds.), *Clinical psychology handbook* (2nd ed., pp. 239-257). Elmsford, NY: Pergamon Press.
- Kihlstrom, J. F., Tataryn, D. J., & Hoyt, I. P. (1993). Dissociative disorders. In P. B. Sutker & H. E. Adams (Eds.), *Comprehensive handbook of psychology* (2nd ed., pp. 203-234). New York: Plenum Press.
- Lynn, S. J., & Rhue, J. W. (1986). The fantasy-prone person: Hypnosis, imagination, and creativity. *Journal of Personality & Social Psychology*, *51*, 404-408.
- Lynn, S. J., & Rhue, J. W. (1987). Hypnosis, imagination, and fantasy. *Journal of Mental Imagery*, *11*, 101-111.
- Lynn, S. J., & Rhue, J. W. (1988). Fantasy proneness: Hypnosis, developmental antecedents, and psychopathology. *American Psychologist*, *43*, 35-44.
- Lynn, S. J., Rhue, J. W., & Green, J. P. (1988). Multiple personality and fantasy proneness: Is there an association or disassociation? *British Journal of Experimental & Clinical Hypnosis*, *5*, 138-142.
- Lynn, S. J., & Sivec, H. (1992). The hypnotizable subject as a creative problem-solving agent. In E. Fromm & M. R. Nash (Eds.), *Contemporary hypnosis research* (pp. 292-333). New York: Guilford Press.
- McCrae, R. R., & Costa, P. T., Jr. (1985). Openness to experience. In R. Hogan & W. H. Jones (Eds.), *Perspectives in personality* (Vol. 1, pp. 145-172). Greenwich, CT: JAI Press.
- Mischel, W. (1968). *Personality and assessment*. New York: Wiley.
- Monroe, S. M., & Simons, A. D. (1991). Diathesis-stress theories in the context of life stress research: Implications for the depressive disorders. *Psychological Bulletin*, *110*, 406-425.
- Nadon, R., Hoyt, I. P., Register, P. A., & Kihlstrom, J. F. (1991). Absorption and hypnotizability: Context effects re-examined. *Journal of Personality & Social Psychology*, *60*, 144-153.
- Nash, M. R., & Lynn, S. J. (1986). Child abuse and hypnotic ability. *Imagination, Cognition, & Personality*, *5*, 211-218.
- Pearson, R. W., Ross, M., & Dawes, R. M. (1992). Personal recall and the limits of retrospective questions in surveys. In J. M. Tanur (Ed.), *Questions about questions: Inquiries into the cognitive bases of surveys* (pp. 65-94). New York: Russell Sage.
- Perry, C., & Laurence, J.-R. (1984). Mental processing outside of awareness: The contributions of Freud and Janet. In K. S. Bowers & D. Meichenbaum (Eds.), *The unconscious reconsidered* (pp. 9-48). New York: Wiley Interscience.
- Perry, C., Nadon, R., & Button, J. (1992). The measurement of hypnotic ability. In E. Fromm & M. R. Nash (Eds.), *Contemporary hypnosis research* (pp. 459-490). New York: Guilford Press.
- Peterson, D. R. (1968). *The clinical study of social behavior*. New York: Appleton, Century, & Crofts.
- Piccione, C., Hilgard, E. R., & Zimbardo, P. G. (1989). On the degree of stability of measured hypnotizability over a 25-year period. *Journal of Personality & Social Psychology*, *56*, 289-295.
- Ray, W. J., Faith, M., & Mathieu, J. (1992). *Factor structure of the Dissociative Experiences Scale: A college age population study*. Unpublished manuscript, Pennsylvania State University.
- Ray, W. J., June, K., Turaj, K., & Lundy, R. (1992). Dissociative experiences in a college age population: A factor analytic study of two dissociation scales. *Personality & Individual Differences*, *13*, 417-424.
- Rhue, J. W., & Lynn, S. J. (1987a). Fantasy proneness and psychopathology. *Journal of Personality & Social Psychology*, *53*, 327-336.
- Rhue, J. W., & Lynn, S. J. (1987b). Fantasy proneness: Developmental antecedents. *Journal of Personality*, *55*, 121-137.
- Rhue, J. W., & Lynn, S. J. (1989). Fantasy proneness, absorption, and hypnosis: A re-examination. *International Journal of Clinical & Experimental Hypnosis*, *37*, 100-106.
- Rhue, J. W., & Lynn, S. J. (1990). Fantasy proneness, hypnotizability, and multiple personality. In J. F. Schumaker (Ed.), *Human suggestibility* (pp. 200-218). New York: Routledge, Chapman & Hall.
- Riley, K. C. (1988). Measurement of dissociation. *Journal of Nervous & Mental Disease*, *176*, 449-450.
- Roche, S., & McConkey, K. M. (1990). Absorption: Nature, assessment, and correlates. *Journal of Personality & Social Psychology*, *59*, 91-101.
- Ross, C. A., Heber, S., Norton, G. R., Anderson, D., Anderson, G., & Barchet, P. (1989). The Dissociative Disorders Interview Schedule: A structured interview. *Dissociation*, *2*, 69-89.
- Ross, C. A., Joshi, S., & Currie, R. (1990). Dissociative experiences in the general population. *American Journal of Psychiatry*, *147*, 1547-1552.
- Ross, C. A., Joshi, S., & Currie, R. (1991). Dissociative experiences

- in the general population: A factor analysis. *Hospital & Community Psychiatry*, 42, 297-301.
- Ross, C. A., Norton, G. R., & Anderson, G. (1988). The Dissociative Experiences Scale: A replication study. *Dissociation*, 1, 21-22.
- Ross, C. A., Ryan, L., Anderson, G., Ross, D., & Hardy, L. (1989). Dissociative experiences in adolescents and college students. *Dissociation*, 2, 239-242.
- Ross, C. A., Ryan, L., Voigt, H., & Eide, L. (1991). High and low dissociators in a college student population. *Dissociation*, 4, 147-151.
- Sanders, S. (1986). The Perceptual Alteration Scale: A scale measuring dissociation. *American Journal of Clinical Hypnosis*, 29, 95-102.
- Sarbin, T. R., & Coe, W. C. (1979). Hypnosis and psychopathology: Replacing old myths with fresh metaphors. *Journal of Abnormal Psychology*, 88, 506-526.
- Schacter, D. L., & Kihlstrom, J. F. (1989). Functional amnesia. In F. Boller & J. Grafman (Eds.), *Handbook of neuropsychology* (Vol. 3, pp. 209-231). Amsterdam: Elsevier.
- Segal, D., & Lynn, S. J. (1992-1993). Predicting dissociative experiences: Imagination, hypnotizability, psychopathology, and alcohol use. *Imagination, Cognition, & Personality*, 12, 287-300.
- Shor, R. E. (1960). The frequency of naturally occurring "hypnotic-like" experiences in the normal college population. *International Journal of Clinical & Experimental Hypnosis*, 8, 151-163.
- Spanos, N. P., & Gottlieb, J. (1979). Demonic possession, mesmerism, and hysteria: A social psychological perspective on their historical interrelations. *Journal of Abnormal Psychology*, 88, 527-546.
- Spiegel, D. (1984). Multiple personality as a post-traumatic stress disorder. *Psychiatric Clinics of North America*, 7, 101-110.
- Spiegel, D., & Cardeña, E. (1991). Disintegrated experience: The dissociative disorders revisited. *Journal of Abnormal Psychology*, 100, 366-378.
- Spiegel, D., Hunt, T., & Dondershine, H. E. (1988). Dissociation and hypnotizability in posttraumatic stress disorder. *American Journal of Psychiatry*, 143, 301-305.
- Steinberg, M. (1993). *Interviewer's guide to the Structured Clinical Interview for DSM-IV Dissociative Disorders (SCID-D)*. Washington, DC: American Psychiatric Press.
- Steinberg, M., Rounsaville, B., Buchanan, J., & Cicchetti, D. (1992). *The Mini Structured Clinical Interview for DSM-IV Dissociative Disorders: A new screening tool for dissociative symptoms and disorders*. Unpublished manuscript, Yale University.
- Steinberg, M., Rounsaville, B., & Cicchetti, D. V. (1990). The Structured Clinical Interview for DSM-III-R Dissociative Disorders: Preliminary report on a new diagnostic instrument. *American Journal of Psychiatry*, 147, 76-82.
- Steinberg, M., Rounsaville, B., & Cicchetti, D. (1991). Detection of dissociative disorders in psychiatric patients by a screening instrument and a structured diagnostic interview. *American Journal of Psychiatry*, 148, 1050-1054.
- Stutman, R. K., & Bliss, E. L. (1985). Posttraumatic stress disorder, hypnotizability, and imagery. *American Journal of Psychiatry*, 142, 741-743.
- Tellegen, A. (1981). Practicing the two disciplines for relaxation and enlightenment: Comment on "Role of the feedback signal in electromyograph biofeedback: The relevance of attention" by Qualls and Sheehan. *Journal of Experimental Psychology: General*, 110, 217-226.
- Tellegen, A. (1992). *Note on structure and meaning of the MPQ Absorption Scale*. Unpublished manuscript, University of Minnesota.
- Tellegen, A., & Atkinson, G. (1974). Openness to absorbing and self-altering experiences ("absorption"), a trait related to hypnotic susceptibility. *Journal of Abnormal Psychology*, 83, 268-277.
- van der Hart, O., & Friedman, B. (1989). A reader's guide to Pierre Janet on dissociation: A neglected intellectual heritage. *Dissociation*, 2, 3-16.
- van der Kolk, B. A., & van der Hart, D. (1989). Pierre Janet and the breakdown of adaptation in psychological trauma. *American Journal of Psychiatry*, 146, 1530-1540.
- Vanderlinden, J., Van Dyck, R., Vandereycken, W., & Vertommen, H. (1991). Dissociative experiences in the general population in the Netherlands and Belgium: A study with the Dissociation Questionnaire (DIS-Q). *Dissociation*, 4, 180-184.
- Wilson, S. C., & Barber, T. X. (1981). Vivid fantasy and hallucinatory abilities in the life histories of excellent hypnotic subjects ("somnambules"): Preliminary report with female subjects. In E. Klinger (Ed.), *Imagery: Vol. 2. Concepts, results, and applications* (pp. 133-152). New York: Plenum Press.
- Wilson, S. C., & Barber, T. X. (1983). The fantasy-prone personality: Implications for understanding imagery, hypnosis, and parapsychological phenomena. In A. A. Sheikh (Ed.), *Imagery: Current theory, research, and application* (pp. 340-387). New York: Wiley.
- Woody, E. Z., Bowers, K. S., & Oakman, J. M. (1992). A conceptual analysis of hypnotic responsiveness. In E. Fromm & M. R. Nash (Eds.), *Contemporary hypnosis research* (pp. 3-33). New York: Guilford Press.
- Yarrow, M. R., Campbell, J. D., & Burton, R. V. (1970). Recollections of childhood: A study of the retrospective method. *Monographs of the Society for Research in Child Development*, 35(Whole No. 5).

Received March 11, 1993

Revision received August 11, 1993

Accepted August 12, 1993 ■