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THE FUNCTIONS OF SELF-MUTILATION

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Abstract. *While pathological self-mutilating behavior has been clinically examined for over 65 years, and much of the literature hypothesizes some function for the behavior, there has been little attempt to integrate or differentiate between different functional ideas. This review uses six functional models extracted from the literature to organize a discussion of the multiple functions of self-mutilation, acknowledging the overdetermined nature of the behavior and attempting to understand how self-mutilation can serve multiple functions simultaneously. Contextual information about the definition, prevalence, phenomenology, patient characteristics, associated diagnoses, and associated symptoms of self-mutilation is first presented. Six functional models are then presented: the environmental model, the antisuicide model, the sexual model, the affect regulation model, the dissociation model, and the boundaries model. Support for these models in the empirical and theoretical literature is presented and treatment implications are explored. © 1998 Elsevier Science Ltd*

PATHOLOGICAL SELF-MUTILATING BEHAVIOR has been clinically examined for over 65 years (Doctors, 1981). We have a considerable amount of descriptive information about self-mutilating patients and the behavior itself and recent research is beginning to reveal the possible psychophysiological mechanisms associated with self-mutilation (e.g., Haines, Williams, Brain, & Wilson, 1995; Simeon et al., 1992). However, we continue to lack a clear understanding of the psychological functions self-mutilation serves. This understanding is vital to our effective treatment of these individuals (Himber, 1994), as well as to meaningful empirical investigation. While much of the literature hypothesizes some function for the behavior, there has been little attempt to integrate or differentiate between different functional ideas (Walsh & Rosen, 1988). Part of the difficulty in understanding the reasons behind self-mutilation lies in the overdetermined nature of the behavior. It is likely that self-mutilation serves more than one function simultaneously, making it the behavior of choice. An overview and integration of the possible psychological functions of self-mutilation would aid therapists in evaluating and treating these patients, pointing to different possible conceptualizations of the symptom. It would also enable researchers to consider different functional hypotheses in their empirical investigations. This review focuses on the

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function of self-mutilation, presenting six functional models that were extracted from the literature to organize a discussion of the possible psychological and developmental functions of self-mutilation and explore the treatment implications. Prior to presenting the models, I present contextual information about the definition, prevalence, phenomenology, patient characteristics, associated diagnoses, and associated symptoms and experiences of self-mutilation. Finally, future directions for research and treatment are explored.

DEFINITION

The definition of pathological self-mutilation should take into account directness, social acceptability, number of episodes, degree of damage, and intent or psychological state (Favazza, 1989; Kahan & Pattison, 1984; Pattison & Kahan, 1983; Simpson, 1980; Walsh & Rosen, 1988). Pathological self-mutilation is direct and socially unacceptable, even within general social subcultures; it is differentiated from indirect self-harm, such as drinking and driving, and from more socially acceptable bodily harm such as ear piercing or tattooing (Favazza, 1989; Simpson, 1980; Walsh & Rosen, 1988). Pathological self-mutilation is repetitive and results in minor or moderate harm; it is differentiated from major self-mutilation or grave self-inflicted bodily harm such as eye enucleation or self-castration, which are usually not repetitive, clearly more severe, and generally associated with psychosis (Favazza & Rosenthal, 1990; Simpson, 1980). Pathological self-mutilation is not suicidal in intent; it is differentiated from suicidal acts and gestures in the patient's perception of the event, the proposed function of the behavior, and the associated features (Doctors, 1981; Firestone & Seiden, 1990; Graff & Mallin, 1967; Grunebaum & Klerman, 1967; Gustafson, 1991; Lee, 1987; Pao, 1969; Rosen, Walsh, & Rode, 1990; Schwartz, Cohen, Hoffmann, & Meeks, 1989; Sonneborn & Vanstraelen, 1992). Finally, pathological self-mutilation is not related to general cognitive impairment; it is differentiated from the self-injurious, stereotypical behavior seen in mentally retarded or autistic children, which may be different in intent, underlying dynamics, and associated developmental and psychological experiences (Favazza & Rosenthal, 1990, 1993; Feldman, 1988; Johnson & Rea, 1986). Thus, the definition of self-mutilation that best fits the majority of studies is that self-mutilation is a direct, socially unacceptable, repetitive behavior that causes minor to moderate physical injury; when self-mutilating, the individual is in a psychologically disturbed state but is not attempting suicide or responding to a need for self-stimulation or a stereotypic behavior characteristic of mental retardation or autism.

While having an agreed upon definition of self-mutilation is clearly imperative for generalizing research results, the field has thus far fallen short of consensus. Definitions in the research on self-mutilation have included (a) restricting the definition to repetitive, moderately harmful, nonsuicidal self-cutting (e.g., Darche, 1990); (b) including any repetitive, moderately harmful, nonsuicidal self-injury, including self-burning, interfering with wound healing, self-hitting, and self-biting (e.g., Herpertz, 1995), c) including grave self-inflicted harm such as eye enucleation and self-castration (e.g., Moffaert, 1989), and d) including suicidal attempts and gestures (e.g., Brittlebank et al., 1990). The most common type of self-mutilation is self-cutting (Favazza & Conterio, 1988; Feldman, 1988; Herpertz, 1995; Langbehn & Pfohl, 1993; Moffaert, 1989; Simpson, 1980; Simpson & Porter, 1981) and many authors restrict their samples to cutters. While there continues to be a debate regarding whether a separate self-cutting syndrome exists (Doctors, 1981; Suyemoto, 1994; Walsh & Rosen,

1988), it is not within the scope of this article to explore this question in depth. However, it should be noted that lack of consensus of definition complicates generalizing across studies, in terms of research, theory, or treatment. The majority of the literature discussed here, especially regarding the reasons behind the behavior, is from research, case reports, and clinically based theory focusing on self-cutting. Studies using broader definitions whose sample ended as primarily cutters, or studies focusing on other types of mutilation that specifically met the definition above were also included (exceptions are explicitly noted).

PREVALENCE

Actual annual incidence or lifetime prevalence of self-mutilation is difficult to accurately assess. Patients who have self-mutilated in the past may not bring this up unless explicitly asked. Studies on self-mutilation may not differentiate suicidal behavior from self-mutilation, and may be overinclusive (including not only suicidal acts but also different types of self-harm, such as poisoning) or underinclusive (including only one type of self-mutilation, such as cutting or burning) (Walsh & Rosen, 1988). Other studies are problematic as their source of data is police reports, doctors' records, or hospital files, leading to an estimation only of severe cases requiring legal or medical intervention. As many cases of self-mutilation cause only minor or moderate harm, these individuals may easily treat their own injuries, never having contact with police, doctor, or hospital.

Based on the prevalence of *Diagnostic and Statistical Manual of Mental Disorders*, third edition disorders including self-mutilation as a diagnostic criterion, Favazza and Conterio (1988) estimate prevalence of self-mutilation in the general population to be 750 per 100,000, or 1800 per 100,000 in persons aged 15 to 35. Walsh and Rosen (1988) review available incidence data, commenting that incidence of self-mutilation has markedly increased since the 1960s. They conclude that the range in incidence is somewhere between 14 and 600 per 100,000 persons annually. Given the current United States population of approximately 260 million, this means between 36,400 and 1,560,000 people engage in self-injury each year. Prevalence rates of 12% in a general sample of college students (Favazza, DeRosear, & Conterio, 1989) suggest that this population may be at greater risk.

The incidence of self-mutilation in the psychiatric population is much higher than in the general population, ranging from 4.3% to 20% of all psychiatric inpatients (Darche, 1990; Doctors, 1981; Langbehn & Pfohl, 1993). If the population evaluated is limited to adolescent inpatients, the incidence rate rises dramatically, approaching 40% in one study (Darche, 1990) and 61% in another (DiClemente, Ponton, & Hartley, 1991). A survey of outpatient therapists indicated that 47% had seen at least one self-mutilating adolescent (Suyemoto & MacDonald, 1995).

PHENOMENOLOGY

There is a surprising amount of agreement in the phenomenological accounts of self-mutilation. The precipitating event is most commonly the *perception* of an interpersonal loss, such as an argument or a therapist's vacation. The individual generally reports feeling extremely tense, anxious, angry, or fearful prior to self-mutilating. Often, but not always, the individual reacts to the overwhelming emotion by experiencing dissoci-

ation. Isolation from others almost always precedes the actual act of self-mutilation. Self-mutilating is usually quite controlled and, by definition, there is a lack of suicidal intent. Razor blades are the favored implement and wrists and forearms are the most common targets of mutilation. The vast majority of mutilators report the absence of pain during the act. The anger, tension, or dissociation typically are ended by the self-mutilating behavior. Occasionally patients will report feeling guilty or disgusted after self-mutilating, but the response of relief, release, calm, or satisfaction is far more common (Doctors, 1981; Gardner & Gardner, 1975; Ghaziuddin, Tsai, Naylor, & Ghaziuddin, 1992; Graff & Mallin, 1967; Grunebaum & Klerman, 1967; Herpertz, 1995; Leibenluft, Gardner, & Cowdry, 1987; Miller & Bashkin, 1974; Nelson & Grunebaum, 1971; Pao, 1969; Podovoll, 1969; Rosenthal, Rinzler, Wallsh, & Klausner, 1972; Simpson, 1975; Woods, 1988).

CHARACTERISTICS OF SELF-MUTILATORS

The majority of self-mutilators are single, female, and usually seen and studied as adolescents or young adults (Brittlebank et al., 1990; Carroll, Shaffer, Spensley, & Abramowitz, 1980; Clendenin & Murphy, 1971; Darche, 1990; Favazza & Conterio, 1988; Favazza et al., 1989; Graff & Mallin, 1967; Herpertz, 1995; Langbehn & Pfohl, 1993; Novotny, 1972; Pao, 1969; Rosenthal et al., 1972; Roy, 1978; Simpson, 1975; Sonneborn & Vanstraelen, 1992; Weissman, 1975). The age at the first episode of self-mutilation is usually in middle to late adolescence (Favazza & Conterio, 1988; Herpertz, 1995; Rosenthal et al., 1972; Suyemoto & MacDonald, 1995). Self-mutilators are often underemployed, with a lower vocational achievement than controls in spite of equivalent education (Favazza & Conterio, 1988; Herpertz, 1995).

ASSOCIATED DIAGNOSES

Self-mutilation is most associated with a diagnosis of borderline personality disorder (Gardner & Cowdry, 1985; Kernberg, 1988; Langbehn & Pfohl, 1993; Leibenluft et al., 1987; Offer & Barglow, 1960; Walsh & Rosen, 1988). Some studies comparing personality-disordered, self-mutilating patients with personality-disordered, non-self-mutilating patients have found self-mutilation to be associated with more severe character pathology, suggesting that self-mutilation is a marker for especially severe personality disorder (Dulit, Fyer, Leon, Brodsky, & Frances, 1994; Simeon et al., 1992; Soloff, Lis, Kelly, Cornelius, & Ulrich, 1994). However, the fact that the majority of studies on self-mutilation are with inpatient populations has likely biased results toward the more severely disordered patients. Other diagnoses, such as major depression, minor depression, dissociative identity disorder, obsessive-compulsive disorder, alcoholism and other substance abuse, eating disorders, schizophrenia, anxiety disorders, adjustment disorders, and other personality disorders have been associated with self-mutilation (Brittlebank et al., 1990; Darche, 1990; Dulit et al., 1994; Favazza et al., 1989; Garrison et al., 1993; Ghaziuddin et al., 1992; Graff & Mallin, 1967; Gustafson, 1991; Herpertz, 1995; Himber, 1994; Langbehn & Pfohl, 1993; Novotny, 1972; Offer & Barglow, 1960; Pao, 1969; Rosenthal et al., 1972; Schwartz et al., 1989; Scott & Powell, 1993; Simpson, 1975; Simpson & Porter, 1981; Sonneborn & Vanstraelen, 1992; Suyemoto & MacDonald, 1995).

It may be quite difficult to accurately diagnosis a patient whose primary presenting symptom is self-mutilation. These patients may fulfill some of the criteria for a specific

diagnosis while differing markedly from others (Darche, 1990; Kahan & Pattison, 1984; Simpson, 1980). The difficulty assigning an accurate diagnosis is further complicated by the possibility that, because of the strong traditional association between borderline personality disorder and self-mutilation, there may be a bias toward diagnosing border-line personality disorder (Ghaziuddin et al., 1992). Indeed, Simpson (1980) concludes: ''The choice of diagnosis seems to depend both on the physicians' favored diagnostic 'set' and on whichever aspect of the patient they happen to encounter.'' (pp. 261–262). The possible bias may have implications for treatment in light of the current debate about the usefulness of the borderline personality disorder diagnosis and the association between self-mutilation and several axis I diagnoses noted above.

In several reviews, Favazza (1992; Favazza & Rosenthal, 1990, 1993) and Pattison and Kahan (1983; Kahan & Pattison, 1984) argue that self-mutilation should be the primary criterion for a separate diagnosis of deliberate self-harm or repetitive self-mutilation. Favazza argues that repetitive self-mutilation is an impulse disorder similar to eating disorders, with frequent comorbidity with other impulse disorders, such as eating disorders and kleptomania. He states that, although these patients are most commonly diagnosed with personality disorders, often once the self-mutilation ceases, the symptoms that fulfill a personality disorder subside as well, pointing to a further difficulty of the bias toward personality disorder diagnoses. Kahan and Pattison (1984) present an extensive argument for the independence of deliberate self-harm as a diagnosis, including enumerating the characteristic symptoms, course, prevalence, population, predisposing factors, and differential diagnosis criteria of deliberate self-harm. Research support for an impulse disorder diagnosis of repetitive self-mutilation is just beginning to accumulate (e.g., Favazza et al., 1989; Simeon et al., 1992).

ASSOCIATED SYMPTOMS AND EXPERIENCES

Research supports correlations between self-mutilation and antisocial behavior (Chowanec, Josephson, Coleman, & Davis, 1991; Pao, 1969; Schwartz et al., 1989; Simeon et al., 1992); increased number of physical illnesses and complaints (Doctors, 1981; Herpertz, 1995; Rosenthal et al., 1972); current sexual dysfunction (Dulit et al., 1994; Gardner & Gardner, 1975; Graff & Mallin, 1967; Pao, 1969; Simpson, 1975) and sexual behavior at high risk for HIV (DiClemente et al., 1991). Self-mutilating patients have more extensive treatment histories than other personality-disordered patients (Dulit et al., 1994) or than suicide attempters (Langbehn & Pfohl, 1993). Self-mutilators are also more angry and anxious (Chowanec et al., 1991; Simeon et al., 1992), although these findings are in dispute (Dulit et al., 1994; Herpertz, 1995). An association between self-mutilation and depressive symptomology (not diagnosis) is also controversial (Chowanec et al., 1991; Herpertz, 1995; Soloff et al., 1994). Although the act of self-mutilation is clearly differentiated from suicide, self-mutilators tend to have more suicidal ideation and more past suicide attempts independent of their self-mutilation (Dulit et al., 1994; Garrison et al., 1993; Langbehn & Pfohl, 1993; Lee, 1987, Lester & Gatto, 1989; Schwartz et al., 1989; Soloff et al., 1994); this is especially true for borderline self-mutilators, as opposed to self-mutilators who are not borderline (Herpertz, 1995).

As would be expected from the phenomenological description, research has supported an association between self-mutilation and dissociation (Graff & Mallin, 1967; Herpertz, 1995; Pao, 1969; Rosenthal et al., 1972; Simpson, 1975; Soloff et al., 1994). While the majority of research and case studies support this relationship, some recent

studies dispute this long-accepted association. Langbehn and Pfohl (1993) found no difference in dissociation in their sample and Zweig-Frank, Paris, and Guzder (1994) found that when borderline personality disorder was entered into a multivariate equation, the relationship between self-mutilation and dissociation was no longer significant. While this analysis is somewhat problematic, given that self-mutilation is a diagnostic criteria of borderline personality disorder, their finding of no differences in dissociation between borderline personality-disordered patients who self-mutilate and those who do not self-mutilate points to the need for further investigation of the relationship between dissociation and self-mutilation.

Self-mutilators are more likely to come from families characterized by divorce, neglect, or parental deprivation (Carroll, Shaffer, Spensely, & Abramowitz, 1980; Friedman, Glasser, Laufer, Laufer, & Wohl, 1972; Graff & Mallin, 1967; Grunebaum & Klerman, 1967; Leibenluft et al., 1987; Pao, 1969; Pattison & Kahan, 1983; Rosen et al., 1990; Rosenthal et al., 1972; Simpson, 1975; Simpson & Porter, 1981). Simpson (1980) notes in his early review that while suicidal patients tend to have childhood experiences of complete parental deprivation due to death or divorce, self-mutilators more often experience partial loss through emotional distancing and inconsistent parental warmth. Self-mutilators often have a history of physical or sexual abuse as children (Carroll et al., 1980; Darche, 1990; Ettinger, 1992; Ghaziuddin et al., 1992; Grunebaum & Klerman, 1967; Langbehn & Pfohl, 1993; Leibenluft et al., 1987; Rosen et al., 1990; Simpson & Porter, 1981; Shapiro, 1987). However, similar to their analysis of self-mutilation and dissociation, Zweig-Frank et al. (1994) found that the diagnosis of borderline personality disorder accounted for the relationship between self-mutilation and child abuse and child abuse did not differentiate between borderline personality-disordered patients who self-mutilated and those who did not self-mutilate. In general, a greater attention to the interaction of diagnosis, behavior, and past experience is needed in studying experiences associated with self-mutilation in order to better understand their contributing roles.

FUNCTIONAL MODELS OF SELF-MUTILATION AND TREATMENT IMPLICATIONS

While the concepts of anger, low self-esteem, reaction to abandonment, and lack of ability to self-soothe are clearly common to most, if not all, of the explanations of self-mutilation, we need a more complete understanding of the function of this behavior in order to effectively investigate and treat it. Much of the research, case material, and theory on self-mutilation attempts to address in some way the function of the behavior, and there have been a myriad of reasons put forth as hypotheses (see Favazza, 1989). While the majority of research and theory on the functions of self-mutilation focus on intrapsychic and interpersonal functions of the behavior, recently researchers have begun to explore possible biological bases and physiological correlates of the behavior (e.g., low serotonergic functioning or decreased psychophysiological response; see Haines et al., 1995; Simeon et al., 1992 for examples). While this area promises to significantly contribute to our understanding of the behavior, it is beyond the scope of this review, which focuses on the intrapsychic and interpersonal functions of self-mutilation. Similarly, other issues related to the reasons behind self-mutilation that are not well represented in the literature on the intrapsychic and interpersonal functions—such as impulsivity (as described above in the discussion of self-cutting as a separate syndrome), and reasons related primarily to grave self-harm, such as psychotic hallucinations or delusions—will not be focused on here.

TABLE 1. Functional Models of Self-Mutilation

Environmental Model	
Environmental	Self-mutilation creates environmental responses that are reinforcing to the individual while simultaneously serving the needs of the environment by sublimating and expressing inexpressible and threatening conflicts and taking responsibility for them.
Drive Models	
Antisuicide	Self-mutilation is a suicide replacement, a compromise between life and death drives.
Sexual	Self-mutilation stems from conflicts over sexuality, menarche, and menstruation.
Affect Regulation Models	
Affect Regulation	Self-mutilation stems from the need to express or control anger, anxiety, or pain that cannot be expressed verbally or through other means.
Dissociation	Self-mutilation is a way to end or cope with the effects of dissociation that results from the intensity of affect.
Interpersonal Model	
Boundaries	Self-mutilation is an attempt to create a distinction between self and others. It is a way to create boundaries or identity and protect against feelings of being engulfed or fear of loss of identity.

One of the major difficulties in attempting to understand the intrapsychic and interpersonal functions of self-mutilation is the complexity and contextual embeddedness of the behavior. Self-mutilation is related to a variety of diagnoses, symptoms, and past experiences. One of the most difficult tasks in attempting to understand any pathological behavior is discerning why this *particular* behavior, at this *particular* time, to serve this *particular* function, for this *particular* patient; there are a myriad of other behaviors, both functional and dysfunctional, that can serve to fulfill any single intrapsychic or interpersonal need. Perhaps the choice of coping strategy and expressive behavior is related to how a given behavior meets a variety of needs. This would account for the multiple functional explanations for self-mutilation and seeming discrepancies. Self-mutilation is an overdetermined behavior, as are many pathological behaviors not clearly linked to a specific biological mechanism (and perhaps many that are linked to biological mechanisms, as we begin to understand that biology and psychology are interactive and reiterative). Because self-mutilation is overdetermined and contextually complex, it is difficult to completely differentiate one function from another. However, an attempt to do this is necessary to aid our understanding of the behavior and begin to tease apart the particular reasons particular patients engage in this behavior. This understanding will greatly enhance our understanding of how to treat a given individual at a given time in a given circumstance.

The models presented here provide an overview of the possible reasons for self-mutilation, attempting to both integrate and differentiate functional hypotheses of self-mutilation while recognizing the interrelatedness of the reasons and the likelihood that more than one will apply to a given individual.

Four major categories—environmental, drive, affect regulation, and interpersonal—encompassing six specific functional models—environmental, antisuicide, sex-

ual, affect regulation, dissociation, and boundaries—were constructed from the litera-
ture. These categories and a brief explication of the specific models are presented in
Table 1. The environmental model is rooted in behavioral and systemic theory. The
drive models (sexual and antisuicide models) are rooted in psychoanalytic theory. The
affect regulation models (affect regulation and dissociation models) are most strongly
rooted in ego and self-psychology, although their foundation extends into object rela-
tions as well (see Pine, 1990, 1992 for a more extensive discussion of ego psychology,
regulation, and its relation to drives, object relations, and self-psychology; see Suye-
moto, 1994 for a more extensive discussion of how this applies to self-mutilation). The
boundaries model is rooted in self-psychology and object relations with an emphasis
on the latter.

The Environmental Model: Behavior and Systems Theory

> Frances: Yeah . . . right now she's [the alter that is speaking through the patient] saying
> that she feels kind of like since people were mean to her and hit her and stuff like that,
> that's part of how things are supposed to be. So that's maybe why I needed to cut myself
> . . . because that's how it's supposed to be. And I'm just carrying on something that I'm
> used to. (Himber, 1994, p. 625)

The environmental model. The environmental model focuses on the interaction be-
tween the self-mutilator and her environment. This model addresses factors that may
have initiated as well as maintained the behavior, underlining that self-mutilation
serves both the self-mutilator and the environmental system. The environmental
model incorporates theory that is grounded in both behavioral and systemic develop-
mental traditions. Self-mutilation begins through (a) familial modeling of abuse lead-
ing the self-mutilator to feel that self-mutilation is right, and to link pain and care;
or (b) through modeling and learning about the benefits of self-mutilation through
vicarious reinforcement. Self-mutilation is then reinforced, internally through the feel-
ing of relief that self-mutilation engenders (see Affect Regulation Model below) or
environmentally through reinforcement from family, peers, and caregivers.

Social learning theory—with its emphasis on vicarious reinforcement, self-reinforce-
ment, the contribution of family relationships, and the importance of modeling
(Bandura, 1973)—may be especially relevant to the environmental view of the
function of this behavior. For example, the concepts of modeling, imitation, and iden-
tification could be applied to the idea that adolescents learn through their parents'
models that injury and care are associated, and attempt to self-care through self-injury
(Simpson & Porter, 1981). The self-mutilating behavior could originate in this associa-
tion and modeling and could then be self-reinforced by decreased tension or ending
dissociation. In addition, social learning theory contributes to our understanding of
the contagion effect (Ghaziuddin et al., 1992; Simpson, 1975) through the concept
of modeling and reinforcement; individuals may observe that self-mutilating behavior
is rewarded and then imitate the behavior.

The attention and concern of others can be powerful reinforcers of behavior. In
Offer and Barglow's (1960) study, self-mutilating patients included attention and so-
cial status among peers (as a result of being able to endure pain) as two reasons for
self-mutilating behavior. Other authors have emphasized the secondary gains of atten-
tion and control over others (Allen, 1995; Bennum, 1984; Podovoll, 1969). Chowanec
and his colleagues (1991) see one of the primary goals of self-mutilation as mobilizing

others to react. Simpson (1980) even describes competitions among patients for the most severe or the greatest number of cuts.

Social learning theory and operant conditioning can explain both how the system may have contributed to the genesis of self-mutilation and also how the system may be maintaining the behavior. Self-mutilation thus functions for self-mutilators so that they can obtain at least some of what is desired from the environment through secondary gains. The self-mutilation also serves the system, however, which is partially why the individual self-mutilator is rewarded with attention, status, admiration, or envy (Bennum, 1984; Offer & Barglow, 1960; Podovoll, 1969). For the system as a whole, self-mutilation may be a way to maintain an acceptable homeostasis, expressing or deflecting attention from systemic (i.e., familial, environmental, or societal) dysfunction. The system is often the family, but could also be the hospital ward or residential home. The system also encompasses dysfunctional aspects of the larger societal context in which it is embedded (Favazza, 1989; Menninger, 1938; Podovoll, 1969).

Podovoll (1969) examines how self-mutilation serves the needs of the system of the inpatient environment in which self-mutilation is often seen. He acknowledges the intrapersonal conflict of the adolescent but focuses on the interpersonal perceptions and interactions. Self-mutilators generally perceive themselves to be isolated and disconnected from others. These patients rarely view their behavior as a reaction to an interpersonal event and they have extreme difficulty consciously perceiving that their self-mutilation affects other people, often evoking emotionally intense reactions (Himber, 1994; Podovoll, 1969). Although self-mutilators may not have a conscious awareness of the way in which they interact with their interpersonal environments, they do serve the system by expressing conflicts and feelings that others experience but repress or defend against more successfully. These repressed experiences are often emotionally difficult and others may feel they are unbearable, projecting them outward:

> What we see then are really two levels of compliance that exist within the social field of these patients. At one level we find the symptom formation perpetuated: either for purposes of protecting the community from something less tolerable, or in the service of continued relationship with the patient and thereby protecting the patient from the community. At another level we find these patients engaging the more poorly integrated aspects of ourselves and patterns in our culture that can lead to collusion and even respect and envy. (Podovoll, 1969, p. 221)

The environmental model thus encompasses both behavioral and systemic theoretical traditions. It proposes that self-mutilation begins through modeling or vicarious reinforcement. Self-mutilation is then maintained because it is reinforced through operant conditioning and it serves the system by maintaining homeostasis and expressing threatening systemic conflicts.

Treatment issues in the environmental model. Treatment based in the environmental model includes behavioral treatment of the symptom, addressing secondary gains through changing environmental reinforcers, and addressing systemic dynamics through group and family therapy.

Feldman (1988) reflects in his earlier review that behavior therapy is more commonly used with self-injurious behaviors with mentally retarded or autistic children, a population quite different from the ''typical'' adolescent self-mutilator. However, behavior therapy has been used and recommended by some researchers and clinicians

working with self-mutilating patients. Relaxation training, exposure, and response prevention have been recommended and used with some success (Allen, 1995; Gardner & Gardner, 1975), although no group or controlled outcome studies examining these particular interventions have been conducted. Substituting a nondestructive behavior (exercise to the point of muscular pain) for self-mutilation is another strategy, used by Rosen and Thomas (1984) with three adult patients. Unlike most self-mutilators, all three patients had reported pain upon self-mutilating, perhaps contributing to the efficacy of a pain-replacement strategy and suggesting a possible difficulty in generalizability.

   A more integrated approach to addressing environmental functions of self-mutilation is dialectical behavior therapy (DBT; Linehan, Armstrong, Suarez, All-mon, & Heard, 1991). This approach combines behavioral, cognitive, and supportive interventions. DBT consists of ''directive, problem-oriented techniques (including behavioral skill training, contingency management, cognitive modification, and exposure to emotional cues) that are balanced with supportive techniques such as reflection, empathy, and acceptance'' (Linehan et al., 1991, p. 1061). Patients treated with this approach also received group therapy focusing on the development of interpersonal skills, skills aimed at tolerating distress, and emotion regulation skills. Linehan and her colleagues found DBT to be more effective than treatment as usual in decreasing parasuicidal acts (defined as any intentional acute self-destructive act regardless of suicidal intent) in women diagnosed with borderline personality disorder. The significantly lower rates of parasuicidal acts were found during the year of treatment, as well as 6 months following the termination of the research intervention (Linehan et al., 1991; Linehan, Heard, & Armstrong, 1993). Although there were no differences found 12 months following the termination of the initial research protocol in the frequency of self-mutilating acts between self-mutilating borderline patients treated with DBT and those who received treatment as usual, those treated with DBT were rated significantly higher on social adjustment at this time (Linehan et al., 1993). While this treatment clearly addresses environmental functions of self-mutilation through behavioral strategies, it also incorporates interventions that address relational aspects of the behavior and functions that are related to emotional expression and control as described in the affect regulation model below (e.g., through teaching distress tolerance skills).

   To address secondary gains and change environmental contingencies, token economies may be helpful with inpatient populations (Offer & Barglow, 1960; Moffaert, 1989; Podovoll, 1969; Schwartz et al., 1989). It is also important that the inpatient milieu address self-mutilation as a pathological behavior, not a positive one. Group therapy may be helpful in sharing coping strategies and attempting to maintain a milieu where self-mutilation is not valued but positive change is (Gardner & Cowdry, 1985; Grunebaum & Klerman, 1967). Milieu therapy, group therapy, and inpatient community meetings are also places where the reactions of the environment can be explored, to determine the ways in which the mutilation is serving the system. Family therapy may also serve this function for the familial system for both inpatients and outpatients (Grunebaum & Klerman, 1967).

The Drive Models: Psychoanalytic Understanding

The drive models of self-mutilation are rooted primarily in psychoanalytic developmental theory. These models attempt to understand self-mutilation as an expression or repression of life, death, and sexual drives.

The antisuicide model.

> Frances: It's not like I want to kill myself . . . when I cut a lot I don't [try to] kill myself. I don't want to. But if I don't cut for a long, long time then I end up overdosing. (Himber, 1994, p. 622)

As discussed above, most authors agree that self-mutilation is distinct from suicide in intent, lethality, phenomenology and associated features. However, some authors believe that self-mutilation is a compromise between the life and death drives; it is an attempt to avoid complete destruction by channeling the destructive impulses more specifically into self-mutilation (Firestone & Seiden, 1990; Himber, 1994; Menninger, 1938). Firestone and Seiden (1990) state that incidents of self-mutilation serve as ''microsuicides,'' embracing the self-destructive feelings, behaviors, and communications and creating an ''illusion of mastery over death'' (p. 207). Thus, the anti-suicide model of self-mutilation focuses on the behavior as an active coping mechanism used to avoid suicide in direct contrast to seeing self-mutilation as an actual suicide attempt.

The sexual model.[1]
The sexual model of self-mutilation proposes that self-mutilation offers sexual gratification, punishes for or attempts to avoid sexual feelings or actions, or attempts to control sexuality or sexual maturation. The connection between self-mutilation and sexuality or sexual development is suggested by the absence of self-mutilation behavior prior to puberty, the high correlation between sexual abuse and self-mutilation, and the increased incidence of sexual dysfunction in self-mutilators as described above (Daldin, 1988; Doctors, 1981; Offer & Barglow, 1960; Simpson, 1975; Woods, 1988).

Self-mutilation is linked to sexuality in both positive and negative ways: it serves as a way to obtain sexual gratification while simultaneously punishing oneself for the sexual drive and expressing an unconscious wish to destroy the genitals as the root of this drive (Daldin, 1988; Friedman et al., 1972; Woods, 1988). Friedman et al. (1972) relate self-mutilation to the psychoanalytic idea that the changes associated with puberty initiate a revival of Oedipal issues (Freud, 1958; Josselson, 1980). They state that the increased sexual fantasies about the mother and the accompanying aggressive impulses may be experienced by self-mutilating adolescents as overwhelming. Self-mutilators may feel ''forced'' by their bodies to have these fantasies. Self-mutilation is, therefore, an attempt to destroy or purify the body, which is seen as separate from the self:

> . . . in attacking the body with the aim of mutilating oneself, the unconscious fantasy is of destroying the genitals seen as the source of the urges; through displacement, whichever part of the body is attacked then represents the genitals; in the suicide attempt, it is the whole body which is attacked as the source of the urges. While a state of calm precedes the actual suicide, in self-mutilation the patients describe this state of calm as following the act. We believe this state of calm might be understood as a relief that, despite the injury, the genitals are safe. (Friedman et al., 1972, pp. 182-183)

Self-mutilation is also viewed as an attempt to turn passive into active, taking control of penetration and sexual impulses (Cross, 1993; Doctors, 1981; Novotny, 1972). Doc-

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[1] Because the sexual model is based primarily on Freudian theory, where sexual urges and conflicts are repressed and acted out in symptomatic behavior, there is little conscious awareness of the sexual nature of the self-mutilation; this may be the reason I was unable to find an illustrative first-person quote for this section.

tors (1981) states that the early sexual activity and the high number of rapes experienced by her subjects were provoked by self-mutilators not only to focus sexual feelings but also as attempts to relieve anxiety about these feelings by taking control over them. Novotny (1972) hypothesizes that self-mutilators experienced conflicts and difficulties in the earliest stages of psychosexual development that led to serious disturbances in interpersonal relationships as well as difficulties in sexual development embodied in cutting as self-penetration.

Self-mutilation has also been connected to negative reactions to menarche or menstruation (Doctors, 1981; Rosenthal et al., 1972; Simpson, 1975). Rosenthal et al. (1972) found several connections between self-mutilation and menstruation: (a) self-mutilation had not occurred before menses in their subjects, (b) 60% of the self-mutilation episodes they investigated occurred during menses, and (c) 65% of their patients reported a negative reaction to menarche. Self-mutilation may be a "means of dealing with genital trauma and conflict centering around menstruation" (Rosenthal et al., 1972, p. 1367) where the conflict is displaced from the genitals, and the bleeding is exposed and controlled, turning passive into active (Doctors, 1981; Rosenthal et al., 1972). Relating self-mutilation to menarche and menstruation may also explain why females self-mutilate more then males.

The sado-masochistic character of self-mutilation has also been related to sexuality (Asch, 1988; Roy, 1978). The same power dynamics and dependency/autonomy needs that underlie sado-masochistic sexualized acts are thought to apply to self-mutilation as well, although through a less conscious mechanism. Both types of masochistic individuals are concerned with power and the need to be in control of the painful or unpleasurable relationship or act (Asch, 1988).

The drive models thus attempt to explain self-mutilation as a symptom serving the basic psychoanalytic drives of sexuality, life, and death. Self-mutilation protects against a complete enactment of the death drive, while simultaneously expressing it. Similarly, self-mutilation both punishes and protects against the sexual drive, while partially enacting it through projection into the act of mutilating.

Treatment issues in the drive models. Treatment in the drive models essentially entails psychoanalysis to address repressed psychosexual developmental conflicts and attempt to reconcile the life and death drives. While some authors present psychoanalytic case reports (e.g., Friedman et al., 1972; Woods, 1988), there is little empirical evidence for this approach. Furthermore, the unique aspects of this approach (psychosexual conceptualization and interpretation) do not seem to match the aspects of treatment that self-mutilators find helpful: (a) expression of emotion, (b) connection to a therapist, and (c) understanding and gaining insight into the behavior (Ettinger, 1992).

The Affect Regulation Models: Psychodynamic Explanations

A great number of authors discuss how self-mutilation is used to regulate affect; indeed, in many authors' views this is its primary purpose. Self-mutilation may be used to express emotion and conflict both to the self and to others, as well as to achieve a sense of control over emotion that threatens to generally overwhelm the individual, her sense of self, and her connectedness to the world. Self-mutilation may also be used in conjunction with dissociation to regulate affect through distancing. The affect regulation models are rooted primarily in ego psychology, as they are concerned with expressing or containing affect and need. However, since that affect and need come from developmental experiences interacting with the current situation, the affect regu-

lation models are also strongly related to object relations, self-psychology, and, to a lesser extent, drive theory (Pine, 1992; Suyemoto, 1994).

The affect regulation model.

> While it was happening I didn't feel it at all. And, I might feel it in the morning when I woke up because it would be kind of raw, tough, scabbing over and stuff and that felt good to me. It was like, ''Yah, that feels good to have that peeling there.'' It was like, ''Okay, this is how I feel on the inside but it's a lot easier to see when it's right out there. (Ms. E., a mutilating patient quoted in Ettinger, 1992, pp. 74–75)

> Lisa: It's like a relief. I do it every couple of weeks just to get a relief . . . from pressure that builds up inside . . . [I] just, just feel that there's a pressure building up inside of you that you have to do something about. That you feel like you're going to explode if you don't. And cutting is a way to release that. (Himber, 1994, p. 623)

Self-mutilation serves to express and externalize intolerable and overwhelming emotion (both to the self-mutilator herself and to others around her), as well as to create a sense of control over that emotion (Allen, 1995; Chowanec et al., 1991; Darche, 1990; Dubovsky, 1978; Ettinger, 1992; Friedman et al., 1972; Ghaziuddin et al., 1992; Herpertz, 1995; Himber, 1994; Leibenluft et al., 1987; Raine, 1982; Woods, 1988). The emotion is likely related to the perceived abandonment preceding the act of mutilation. The emotion may be anger that is redirected from the other onto the self for fear of destroying the other, anger that is perceived to be coming from the other and resulting in abandonment, or pain at the rejection from the other (Darche, 1990; Ettinger, 1992; Friedman et al., 1972; Gardner & Gardner, 1975; Leibenluft et al., 1987; Offer & Barglow, 1960; Pao, 1969; Podovoll, 1969; Raine, 1982).

Leibenluft et al. (1987) conceptualize self-mutilation as a need to feel a real physical pain as opposed to just an emotional pain. While this conceptualization is not congruent with the consistent reports of no pain upon self-mutilation, it may be that self-mutilators need to have physical evidence of their emotional injury in order to feel that their emotions are real, justified, or able to be tolerated. Self-mutilation may translate the feeling into an external injury that validates and expresses the emotion. One of Ettinger's (1992) self-mutilating subjects expressed this function when she said: ''I can look at these marks and say, 'This is how badly I felt and it was real' '' (p. 77).

Self-mutilation may also help regulate the overwhelming affect by creating a sense of control, by turning the passive pain of abandonment into an active pain that can be controlled (Darche, 1990; Friedman et al., 1972; Raine, 1982): ''. . . [she felt] she may as well get in first to stop the victimization she so acutely felt'' (Woods, 1988, p. 54). Raine (1982) states that self-mutilation turns the passive wounds of castration and menstruation into active wounds controlled by the adolescent herself. While her explanation is grounded in psychoanalytic theory concerning psychosexual development, one may also view the ''wound'' discussed as the wound resulting from perceived abandonment, and thus relate this theorizing more explicitly to the phenomenology of the behavior.

The affect regulation model of the function of self-mutilation can be related to psychoanalytic and object relations developmental theory, contributing to understanding why self-mutilation is particularly prevalent in adolescents. Anna Freud (1958) states that the task in adolescence is differentiation from the mother; the anxieties and pathologies of adolescence are related to the need to break the tie with infantile love objects. The inability to break these ties may result in extreme defensive maneuvers against the infantile object ties, such as reversal of affect, where the love is turned

into hate and the dependency into revolt. However, the hostility defending against the need for the love object soon becomes intolerable to the ego as well and must be defended against itself, resulting in expression through projection outward to the parents or resulting in inward projection and expression though self-mutilation (Freud, 1958). Thus, in this model, anger is not directed outward to the abandoning object, but is turned inward against the self, in a dynamic akin to psychoanalytic explanations of depression (Asch, 1971; Darche, 1990; Ettinger, 1992; Friedman et al., 1972; Offer & Barglow, 1960; Raine, 1982; Woods, 1988). It is not the object that is hated for leaving, but rather the self, for both the anger and the need.

This self-hatred may be rooted in early object relations leading to development of a negative self-introject, which Noshpitz (1994) describes as an internal sense of badness, a constant sense of being wrong, dirty, and in pain. Doctors (1981) hypothesizes a failure in mother's empathy and response in the developmental histories of self-mutilators. This failure results in the child's inability to achieve stable object and self-representations, internalize a good object, and establish an ability to self-soothe. Difficulties in parental nurturance are supported by Doctors' (1981) findings that when self-mutilators expressed feelings, they tended to be discounted or disconfirmed by parents, resulting in a lack of faith that expressions of need would evoke an environmental response. Aggressive feelings from perceived abandonment are thus experienced as overwhelming and negating the uncertain good object, releasing the negative self-introject (Doctors, 1981; Miller & Bashkin, 1974; Noshpitz, 1994). The negative self-introject contributes to the self-mutilator's belief that it is better to hurt oneself than to hurt others (Simpson & Porter, 1981). Hurting oneself fulfills this belief, punishes for the need and the rage, and protects the other from the anger or need that is perceived as having the potential to annihilate (Miller & Bashkin, 1974; Podovoll, 1969; Simpson & Porter, 1981).

Self-mutilation may serve not only to validate the internal experience but also to express the depth of this feeling to others, as self-mutilators have difficulty with verbal expression (Doctors, 1981; Rosen et al., 1990). Doctors (1981) relates self-mutilators' difficulty with expression of affect through language to Winnicott's ideas that it is when an infant's wish is made real that the infant develops the capacity to use symbols. She states that the inarticulateness of self-mutilators relates to a failure of trust and an associated inability to perceive symbols as a means to move beyond the feeling of omnipotence and hopelessness. Sarnoff (1988) further discusses the mechanism through which the lack of symbolizing function may contribute to self-mutilation:

> One of the elements that potentiate adolescent vulnerability to masochistic conflict resolutions is a failure in the development of the symbolizing function. There is a failure in negotiating the developmental shift from evocative to communicative symbols. There is normally a shift from the use of symbols that evoke moods to the use of symbols that communicate information in expressing drive manifestations. The more primitive evocative symbols continue to evoke feelings and memory of trauma in the service of discharge without mastery. They are not used to communicate or for reparative mastery. They are not viewed from a therapeutic distance. (p. 211)

If language cannot be used to create distance from feelings and regulate affect, self-mutilation could be a good substitute: ''Cutting her skin, she freely admitted, was her way of cutting off her feelings, cutting herself off from people and cutting the world out of her mind'' (Woods, 1988, p. 57). The affect regulation model contends that self-mutilation is related to this inability to use symbols to express affect. Self-mutilation

is used as a ''primitive evocative symbol'' that discharges the feeling, communicates the primary process experience through evocation, controls the affective experience through distancing and externalizing, and protects the other from the emotion. However, self-mutilation fails to communicate the information in which the primitive feeling is embedded or help the self-mutilator obtain mastery over the emotion through the use of symbolic communication.

The dissociation model.

> Patient: When Dr. D left I went through changes. I knew he was leaving. He told me about it a long time ago. But this cloud came over my head. I felt sick. I knew if I cut-up I would feel better.
> Doctor: How did you know you would feel better?
> Patient: When I go through changes and cut-up I feel better right away.
> Doctor: What do you mean by 'changes'?
> Patient: You know—like I'm not there; like I'm not real. When I start to cut-up and see the blood and then when the cuts start to hurt, it ends. I'm back inside myself. (Miller & Bashkin, 1974, pp. 640–641)

The dissociation model of self-mutilation is the only one that explicitly addresses the dissociation that has been observed so often. This model is rooted primarily in self-psychology, as it takes as its primary thesis the maintenance of a sense of self, not necessarily in relation to others (as in the boundaries model below), but as an internal experience and knowledge. This model agrees that self-mutilation serves to regulate affect, but focuses on the experience of dissociation and the way in which self-mutilation interacts with this defensive strategy for affect regulation. The function of self-mutilation as ending dissociation is discussed most often (Allen, 1995; Ettinger, 1992; Herpertz, 1995; Miller & Bashkin, 1974; Pao, 1969; Raine, 1982; Simpson, 1975), but Himber (1994) notes that self-mutilation may also function to cause dissociation.

The dissociation model focuses on creating or maintaining a sense of self or identity in the face of overwhelming internal emotion, rather than in the face of merger with another person as in the boundaries model. Although it is unclear by what specific mechanism self-mutilation accomplishes ending the dissociated state, it appears that the blood may be a possible agent (Miller & Bashkin, 1974; Simpson, 1975). Simpson (1975, 1980) hypothesizes that the color shock of the red blood may contribute to ending dissociation. In addition, the scars left from self-mutilation may serve to create a continuity of existence for the patient, connecting episodes of dissociation or preserving past events or emotions that could not be integrated into the sense of identity (Miller & Bashkin, 1974). Self-mutilation may also enable a dissociated state through distancing and externalization of the emotion, similar to the expression and control models discussed above (Himber, 1994).

Treatment issues in the affect regulation models.
Psychodynamic treatment of self-mutilating patients appears to be the treatment most commonly used, as indicated by the research, the number of case reports of dynamic treatment, and the theoretical work on the treatment of self-mutilation. Many authors feel that one of the most therapeutically relevant dynamics of the self-mutilator is her difficulty verbalizing emotions and needs, especially anger and feelings around loss; therefore, effective therapy needs to focus on developing the ability to articulate emotions and needs (Graff & Mallin, 1967; Grunebaum & Klerman, 1967; Podovoll, 1969; Simpson, 1975).

While there has been little outcome research on psychodynamic treatment with self-

mutilators, an exception to this is a study by Nelson and Grunebaum (1971). These authors followed up 23 self-mutilators that had been seen and studied in 1963 to 1964. They gathered information on 19 of these subjects, either through self-report or through contact with a professional with whom the self-mutilating patient was presently engaged. These 19 patients consisted of 6 psychotics, 8 borderline personality disorders, 2 neurotics, and 3 patients who had committed suicide. Of the 16 patients still living, 10 had improved by specific criteria of social adjustment and decreased symptoms, 4 patients (all borderline personality disorders) showed no improvement in self-mutilating behavior, and 2 patients (both male schizophrenics) reported deterioration. The most common reasons given for improvement included: (a) an increased ability to cope with feelings, especially sexual and angry feelings; (b) increased verbal expression of feelings; (c) learning to use more constructive means to channel impulses; and (d) control of psychotic delusions. Nelson and Grunebaum (1971) report that insight into the reasons behind the self-mutilating behavior in particular was not as helpful as these four factors. They recommend a good alliance between therapist and patient and ''an approach that combines education, identification with the therapist, and an appropriate mixture of permissiveness and limit setting'' (p. 1349). Suyemoto and MacDonald (1995) report that therapists relate patients' decreasing or stopping self-mutilation to (in order of rated importance): (a) a greater acceptance of their own emotions and learning to express feelings verbally, (b) learning to tolerate intense emotion and learning other ways to control emotions or interactions with others, and (c) the development of clearer boundaries and learning alternative ways to affirm their senses of self. Self-mutilators themselves agree that a good alliance is beneficial, but in contrast to Nelson and Grunebaum, they feel that gaining a better understanding of the meaning and function of self-injury is a major contributor to improvement and decreasing self-mutilation (Ettinger, 1992).

There is little discussion of treatment and dissociation in the self-mutilation literature. It is likely assumed that when trauma issues and affect regulation issues are addressed, the dissociation will no longer be needed as a defense and both it and the self-mutilation will cease.

The Boundaries Model: An Interpersonal Approach from Object Relations

> G. [the patient's therapist] told me he thought our friendship was interfering with therapy and holding me back. (I immediately felt the waves of cold washing over me.) Then, in the most cruel mechanical way (he was so damned detached), he said I phoned him too much and it had to stop. I thought, My God, I have hurt him, made him discouraged with his efforts to help me. I was mainly hurt and dysphoric. (I thought—I can't stand this. It was as if he suddenly hated me.) I wouldn't and couldn't stand this . . . . He is pushing me away so hard! Next he will drop my sessions. My GOD! I am losing him; I can't live without his support . . . . I hurt so badly, like a knife in the heart. Why is he doing this to me? I can't stand watching him sit there so angry with me, so cold. I wanted to get down on my knees . . . and beg him to stop it. But I didn't. I sat there frozen with tears running. Then I started feeling hopeless; I couldn't change his mind. It's all my fault; I did this to him . . . . I always end up destroying people because I need more than they can give . . . . I had thought I was getting away from that . . . I guess not. I am just warped forever and not good to anyone or for anyone. (Ms. B., describing her feelings prior to an incident of self-mutilation, in Leibenluft et al., 1987, p. 319)

The boundaries model. The boundaries model of self-mutilation focuses on the need to affirm the boundaries of the self (Carroll et al., 1980; Kafka, 1969; Podovoll, 1969; Raine, 1982; Simpson & Porter, 1981; Woods, 1988). This model is rooted primarily

in object relations and self-psychology developmental theory. In this model, the perceived abandonment creates intense emotions that threaten to engulf the self of the patient, as her lack of boundaries leads to experiencing the loss of other as a loss of self; this loss of self is combated by self-mutilating. Self-mutilation serves to define the boundaries of the self, as the skin is the most basic boundary between self and other, and the blood or the scar are an indication of self-reality (Raine, 1982; Simpson & Porter, 1981). Self-mutilation also serves to create a distinct and separate self-representation, differentiating the self from other (Carroll et al., 1980; Kafka, 1969; Podovoll, 1969; Raine, 1982; Simpson & Porter, 1981; Woods, 1988).

The boundaries model is rooted in developmental object relations theory that suggests that these patients were unable to adequately separate or individuate from their mothers, primarily because the attachment was not secure enough in the first place (Carroll et al., 1980; Friedman et al., 1972; Noshpitz, 1994; Pao, 1969; Walsh & Rosen, 1988). As noted above, Doctors (1981) states that self-mutilators experience an early failure of parental empathy that interferes with the child's ability to achieve stable object representations, so that boundaries become blurred and fear of merger occurs. The adolescent need for autonomy and identity development revives the initial separation/individuation issues (Erikson, 1968; Josselson, 1980). Pao (1969) explicitly links the conflicts leading to self-mutilating to Mahler's separation/individuation phases in infancy, hypothesizing that self-mutilators may be fixated at this phase of development. Anna Freud's (1958) theorizing that the primary task of adolescence is to break the infantile object ties may also be used to illuminate the developmental object-relations difficulties of self-mutilators. Self-mutilators who are unable to break these ties may use the defensive maneuver of regression through primary identification with the object (as well as reversal of affect as discussed above). When the adolescent is unable to break the infantile object ties due to the lack of early developmental experiences laying the foundation for this, she or he responds through regressing to primary identification, attempting to merge with the other and resulting in blurred boundaries (Freud, 1958). When confronted with abandonment by the object in the normal course of adolescent development, this results in fear of a loss of identity and self-mutilation as an attempt to maintain identity and self-other boundaries. The failure to adequately negotiate the infant's separation/individuation stage leads to a reoccurrence of separation/individuation tasks in adolescence, causing a feeling of loss of self as the self is still merged with the other (Carroll et al., 1980; Simpson & Porter, 1981; Walsh & Rosen, 1988).

Woods (1988) agrees that self-mutilation stems from an inability to differentiate self from other. He states that perceived abandonment leads to unbearable feelings of isolation that result in feeling unreal. Anger at the other person becomes shame at one's own neediness driving the other away. Needs are felt as overwhelming because they are, indeed, a wish for merger. Anger quickly becomes rage as the individual is confronted with the reality of not merging and the threatened loss of self. This anger is directed at the self, producing a fusion of inside and outside, self and other, and pleasure and pain (Woods, 1988). Carroll et al. (1980) also see self-mutilation as an attempt to defend against feelings of ''fragmentation or destruction of the self.''

Self-mutilation may be particularly good at defending against feelings of merger, as many object relations theorists see self-mutilation, self-mutilating implements, blood, or scars caused by self-mutilation as transitional objects used to negotiate the reenactment of the separation/individuation process (Doctors, 1981; Josselson, 1980; Kafka, 1969; Woods, 1988). As infants individuate, they often use transitional objects, objects that can be experienced as both self and other, that can connect the internal experience and the external reality. Self-mutilation is an intermediate experience, an

attempt by the adolescent to simultaneously separate and connect the inner and outer experience: ''Blood was described by the patient as a transitional object. In a sense as long as one has blood, one carried within oneself this potential security blanket capable of giving warmth and comforting envelopment'' (Kafka, 1969, p. 209). The body serves as a transitional object between living and dead, part and whole, inside and outside, self and other (Simpson, 1980).

Finally, self-mutilation may also serve to actually produce an identity as well as confirm boundaries. Simpson and Porter (1981) hypothesize that self-mutilation creates or helps to maintain a separate and unique sense of self because ''bleeding became for them real, tangible evidence that 'I *do* exist *somewhere* in this world' '' (p. 435). Raine (1982) hypothesizes that the wound or the scar may be a means to establish a sense of identity. Podovoll (1969) agrees that self-mutilation may be used to create a sense of identity, reflecting that these adolescents are often viewed by others in terms of their self-mutilation behavior: They are known as ''cutters'' and defined by this symptom.

Treatment issues in the boundaries model. Although authors generally agree that increasing the ability to articulate emotions and needs helps decrease self-mutilation, there is some controversy regarding the role of the therapist's relationship with these patients. Because boundaries and merger issues are so salient for these patients, some authors feel strongly that the relationship is the primary agent of change in these therapies. The therapy must provide the self-mutilating patient with a reparative object experience, providing the infantile merger and then succeeding in a separation/individuation experience in order to address the dynamic issues underlying the self-mutilation (Pao, 1969; Raine, 1982; Woods, 1988). The therapist or therapy may need to act as a transitional object(s) for the patient. However, the same authors caution therapists to be wary of the intensity of the relationship, as the primitive emotional state of the self-mutilator combined with her need for merger can contribute to a fear for both the patient and the therapist that the emotion will be overwhelming and the boundaries lost (Pao, 1969; Raine, 1982; Woods, 1988). The intensity of the relationship will likely evoke strong countertransferential reactions in therapists, which may include a defensive reaction of viewing the self-mutilator as hostile or manipulative (Bennum & Phil, 1983; Leibenluft et al., 1987; Menninger, 1938; Pao, 1969). In addition, self-mutilators may attempt to engage the therapist in the same torturer-victim pattern they have previously experienced in their other relationships (Woods, 1988).

It is clear that the acts of self-mutilating bring out strong feelings in therapists that need to be addressed in supervision or peer collaboration in order to best meet the needs of the patient. Group therapy may be helpful not only to address environmental issues as discussed above, but also to diffuse some of the transferential and countertransferential issues, as well as provide a forum for the development of trust in interpersonal relationships (Gardner & Cowdry, 1985; Grunebaum & Klerman, 1967).

CONCLUSION AND FUTURE DIRECTIONS

Six models encompassing four developmental traditions were extracted from the literature in an attempt to comprehensively overview the possible intrapsychic and interpersonal functions of self-mutilation. While each of these models may apply at some time to some individual patient, some are clearly more supported in the research than others. The affect regulation models and boundaries model have received more empirical support than the drive models or the environmental model (Ettinger, 1992;

Himber, 1994; Nelson & Grunebaum, 1971; Suyemoto & MacDonald, 1995). This may be because self-mutilating patients may be more likely to be aware of functions such as affect regulation than functions such as expressing repressed sexual conflict; the drive models suffer the same difficulty of much of Freudian-based theory, a difficulty in operationalization and direct observability. However, it may be that the affect regulation and boundaries models are truly more salient for these individuals than the drive models or the environmental model.

In terms of general treatment strategies with self-mutilators, given that anger, low self-esteem, reaction to abandonment, and lack of ability to self-soothe are generally agreed to be issues for individuals who self-mutilate, treatment would do well to focus on these issues as well as the specific meaning of the behavior. Treating the primary axis I diagnosis with which some self-mutilators present, especially those that may explicitly contribute to the reasons for self-mutilation (such as depression contributing to low self-esteem and negative self-perception; schizophrenia leading to hallucinations or delusions that precipitate self-mutilation; or dissociative identity disorder leading to pressure to self-mutilate for continuity) will also be important in attempts to decrease or stop self-mutilation.

Self-mutilators are most commonly treated with psychodynamic treatment, focusing on verbal expression of emotion, understanding the meaning and need behind the behavior, and providing an interpersonal experience that addresses issues of boundaries and trust. Self-mutilators are often unaware of the effect they have on others, often overwhelmed by their own affective experience, and often simultaneously desperately seeking and fearing intimate attachments. These characteristics, along with the potentially life-threatening behavior (the intent might not be suicide, but the possibility always exists), makes these patients especially challenging to therapists. Because their emotional experience is so primitive, it can be difficult for a therapist to maintain the therapeutic distance that protects against countertransference. Furthermore, there is some suggestion that this therapeutic distance may work against effective therapy, as self-mutilating patients may need to share their evocative emotional experience and experience a type of merger before they can learn to individuate and master the use of symbolic communication. Knowing that these issues are likely to be salient with these individuals is the beginning of protecting against their possible detrimental effect. Allen (1995) also cautions that the therapist must be aware of the possible detrimental effects of therapy, including possible lack of structure or focus in dynamic or analytic therapies and the confrontational stance. She states that these approaches can be especially problematic for self-mutilators, as they have difficulty tolerating ambiguity about interpersonal expectations and an unstructured therapy may lead to a greater likelihood of being overwhelmed. The potential for these difficulties may be especially high with therapists who are relatively inexperienced with self-mutilators (Allen, 1995).

Self-mutilation is, at this point, best understood as an overdetermined behavior serving a variety of functions. Research suggests that the behavior is correlated with certain familial experiences and other symptom clusters, and that self-mutilators may be able to be differentiated from the general psychiatric population on this basis. But we are just beginning to comprehend the underlying dynamics. We are lacking not only descriptive information about self-mutilators in general, but especially descriptive information about self-mutilators who are not inpatients. The vast majority of the research on self-mutilation is on an inpatient population, but estimates of the prevalence of this behavior (Favazza & Conterio, 1988; Favazza et al., 1989; Suyemoto & MacDonald, 1995) suggest that there is a population of self-mutilators who are not seen in hospitals.

The inpatient population is likely the more disturbed segment of any psychopathological population and therefore yields a biased picture. Basing etiological and functional theories and therapeutic interventions on this sample may do a disservice to the self-mutilators who are not as disturbed as the inpatient population. The influence of class, gender, and race/ethnicity also need to be further explored, especially in light of the different rates of self-mutilation in women and men. Many of the functional models also seem to apply more specifically to women. Certainly the sexual model applies to a Freudian developmental view of women, but the affect regulation and boundaries models may help explain the greater incidence of self-mutilation in women as they rest on concepts of early object relations and the need for connection that are similar to current theorizing about women having a more relational stance than men.

Self-mutilation has also been associated with a wide variety of axis I and axis II diagnoses. The functional models described above could be helpful in understanding this diversity. The interpersonal model of self-mutilation serving to create boundaries and protect the individual from merger may be especially salient for those individuals presenting with borderline personality disorder. The affect regulation models, with their foundation in developmental experiences that make it difficult to use symbolic communication to regulate affect, may also be relevant for these patients. The antisuicide function may be more characteristic of individuals presenting with a major depressive episode, as this model focuses on fending off the death drive that these individuals are more likely to be struggling with. The affect regulation model, in terms of using self-mutilation to express and regulate psychological pain and in its emphasis on punishing the self and protecting the other, may also apply. Individuals with dissociative identity disorder may utilize self-mutilation both to create boundaries (the interpersonal model) and as a way of dealing with the dissociation characteristic of this disorder (the dissociation model of affect regulation). The environmental model may be more useful in explaining contagion in adolescent inpatient units or among those with more minor depressive symptoms, as these individuals may be enacting a learned behavior that is not as strongly tied to their intrapsychic dynamics. Future research could explore the similarities and differences in the function of self-mutilation between individuals with varying diagnoses.

The functional models described above could also be used to attempt to further describe and understand the possible reasons behind the behavior. Self-mutilation seems to function primarily as a way to regulate emotion and create interpersonal boundaries. However, self-mutilation may modulate this emotion in different ways for different individuals: for some individuals self-mutilating may be a way to express or externalize emotions, for others self-mutilating ends a dissociated state, for still others it creates a stable sense of self. It may be that different self-mutilators use self-mutilating for different purposes, depending on their personality configuration, their past experience, and possibly their other presenting problems as discussed above. It is also possible that individual self-mutilators use self-mutilation to serve different purposes at different times; these individuals may vacillate between emotional extremes of excessive emotion and overcontrol or between merger and extreme defensive distance or dissociation. This hypothesis would unify the seemingly inharmonious aspects of the motivational theories and thus deserves empirical investigation. The models above could be used to evaluate self-mutilators' reasons for self-mutilation at different times and in different contexts, in an attempt to understand how the functions themselves interrelate.

Given the extent that theorizing is associated with developmental tasks of adolescence, it is also possible that some self-mutilators use self-mutilation as a way to negoti-

ate a difficult adolescence, as opposed to self-mutilation as an expression of an extreme, ingrained personality disorder (e.g., borderline). While research has largely disproved the idea that normal adolescence is characterized by ''storm and stress'' (Bandura, 1964; Feldman & Gehring, 1988; Hill, 1980; Offer & Offer, 1975; Paulson & Hill, 1988; Powers, Hauser, & Kilner, 1989), Powers et al. (1989) state that 10% to 20% of adolescents exhibit severe emotional disturbance. The models presented above may be clearly related to adolescent developmental issues such as (a) separation/individuation issues; (b) learning to modulate emotions as physiological changes create intense experiences that are new and can be overwhelming; (c) dealing with emerging sexuality; (d) struggling with the need to control the environment, as this is directly related to the task of developing autonomy, independence, and ego mastery; and (e) creating a stable identity. Self-mutilators may have fewer resources or may lack early preparing experiences that enable them to meet these adolescent tasks in a productive manner. While it is probably true that the vast majority of self-mutilating adolescents have dysfunctional family backgrounds and greater psychological difficulties in general, it may not be true that the majority suffer from chronic psychological disorders, such as borderline personality disorder. One could hypothesize that the less disturbed individuals would not only be less likely to be inpatients but also may have somewhat different dynamics that are even more focused on adolescent developmental issues. These individuals might also be more amenable to treatment interventions. This is supported by research indicating that over 60% of inpatient self-mutilators show improvement at a 5- to 6-year follow-up (Nelson & Grunebaum, 1971), and that for female adolescent outpatients, 70% stopped cutting completely, with an average length of self-mutilating of 3.6 years and the average age for stopping self-mutilating of 18.8 years of age (Suyemoto & MacDonald, 1995). These data suggest that self-mutilation may have been a temporary coping mechanism, perhaps limited by the developmental stage of the patient. In sum, we need to pay more attention to the developmental implications of self-mutilation; the models described above relate to different developmental tasks and may be useful in attempting to understand the different functions self-mutilation serves at different stages of development.

Finally, we very much in need of additional information about treatment strategy and outcome. Most of the information on treatment has been from small, inpatient populations, yet Favazza and Conterio's (1988) study suggests that outpatient therapy may have a higher success rate, at least from the patient's point of view. We need more information about the factors that contribute to the cessation of self-mutilation and the therapeutic techniques that are most effective in helping these individuals. It may also be helpful to attempt to differentiate those individuals who stopped self-mutilating from those who continue to self-mutilate for many years. Such differentiation would give us invaluable information on the motivations behind self-mutilating as well as help us understand the factors involved in stopping. Past research (Ettinger, 1992; Nelson & Grunebaum, 1971; Suyemoto & MacDonald, 1995) suggests that addressing some of the functions reflected in these models is more useful in addressing the behavior of self-mutilation as well as the general adjustment of self-mutilating patients. Understanding the function and meaning of self-mutilation and using this understanding to plan and deliver treatment will help us better address the needs of these patients.

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