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WILMA BUCCI, Ph.D.

DISSOCIATION FROM THE PERSPECTIVE OF MULTIPLE CODE THEORY

PART I

PSYCHOLOGICAL ROOTS AND IMPLICATIONS FOR PSYCHOANALYTIC TREATMENT *[1]

Abstract: The multiple code theory, based on current work in cognitive science and neuroscience, provides a new context for examining the psychological and biological bases of dissociative processes. As I elaborate here, we need to broaden our understanding of dissociative processes as encompassing not only means of protection against anxiety and stress, but also a broad range of positive functions that underlie courage, productivity, exploration and joy; we also need to broaden the definition of trauma to encompass a wide range of chronic as well as acute events. In this paper, I outline the spectrum of dissociative processes, as these apply in psychic sickness and health, from the perspective of multiple code theory; then examine new views on trauma and its regulation; then discuss briefly the implications of these changes in perspective for treatment of the various types of dissociative processes that clinicians encounter—and experience.

Keywords: dissociation, symbolic, subsymbolic, trauma, referential

*An earlier version of this paper was presented November 2005, in Palermo, Italy, at an international congress on the assessment and treatment of traumatic experiences. Portions of the paper were also presented in April 2006 at an all-day seminar on "The Dissociative Mind: Psychological Roots and Psychoanalytic Processes in Action, " The International Society for the Study of Trauma and Dissociation, at Adelphi University, Garden City, Long Island. The collaborative research and clinical perspective presented in this paper has roots in a panel on "Trauma, Dissociation and Conflict: The Space Where Neuroscience, Cognitive Science, and Psychoanalysis Overlap," at the April 2002 meeting of the Division of Psychoanalysis (39) of the American Psychological Association.

[1] This is the first of two papers presenting a new and broader understanding of dissociative processes as they operate in adaptive functioning, in pathology, and in psychoanalytic treatment, viewed from the perspective of multiple code theory.

Contemporary Psychoanalysis, Vol. 43, No. 2. ISSN 0010-7530
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HUMANS HAVE EVOLVED as complex organisms, with multiple states, multiple functions, multiple ways of processing information, and substantial but limited integration of systems. We are all more dissociated than not. The dissociation among systems is the basis for our vulnerability and also, in some respects, our strength in negotiating our worlds. The adaptive human capacity for encompassing multiple and shifting states is what makes possible the absorption of a scientist in his creative thought; the phase of maternal preoccupation in late pregnancy and during the infancy period; the capacity of an athlete to enter the zone in which "everything seems to work" and he can "play incredible," as Federer said following his winning the U.S. Tennis Open; the altered state of romantic love; the "place" that jazz musicians describe that they "go to," in which improvisation somehow flows. Sometimes the same person can be mother, athlete, jazz musician, lover, and even scientist, at different times and in different states.

There is a theoretical tension, we may say dissociation, that pervades the field, and that needs to be explicitly acknowledged, between our modern recognition of the inherently complex nature of human psychic organization, and the time-honored view of dissociative processes as having their roots in the response to trauma, stress, and anxiety. With all the changes in theory from Janet, to Freud, to Fairbairn, Ferenczi, and Sullivan, beautifully summarized by Howell (2005), the assumption remains that dissociative processes emerge as the organism (human or otherwise) attempts to protect its own stability in response to trauma; with the corollary assumption that somehow, if there were no stress, we would all be whole.

To understand dissociative processes as they occur in response to particular events that may be characterized as traumatic, we need first to understand the more general and ubiquitous operation of these processes in a normative psychological sense; we also need to examine the nature of traumatic experience and its impact in the context of the inherently complex and multifaceted nature of human psychological and biological organization.

The first major point that I emphasize throughout this paper is that dissociation does not emerge first or necessarily from negative roots. A person without an adequate capacity for multiple states and functions will lead a limited life. People call on a pool of dissociative and integrative processes to manage the wide range of challenges and problems of life; these may involve positive explorations or retreat from experience. Some-

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times the solutions that are adaptive in one context will turn out to be maladaptive in others; treatment may also involve further dissociation as well as new integration.

My second major point concerns our understanding of the nature of traumatic experience, its challenge to personality organization, and the various ways that people use the tools of adaptation that they possess to respond to this challenge. Just as we see a theoretical tension in the definition of dissociative processes, so we must also recognize a similar kind of tension in the definition of trauma and traumatic events.

The specific nature of trauma is a psychic injury that remains unhealed. The process begins as an adaptive response to danger; the human organism, like all organisms, mobilizes its defenses against a threat, with immediate responses of fight or flight, in their many variations. In adaptive functioning, the emergency response is regulated when the external danger is past. In some cases however, the regulation, resetting the response system to nonemergency mode, does not occur or occurs only partially. The person appears unable to register changes in his situation and continues to respond as if danger were present or imminent; thus the initial response patterns of avoidance or attack are replayed in a broadening range of situations, rather than modulated in the context of the person's current circumstances and current powers. The expectations of danger and the protective responses may become dangers in themselves, preventing the healing of the psychic wound that might occur naturally over time. Treatment may activate the threat of danger and elicit further defense; this is the "vicious circle" of the treatment of traumatic disorders. Before I address the mechanisms underlying this vicious circle of treatment, however, I would like to make a general point about the circularity of diagnosis that complicates the problem further, but also provides a potential escape.

The Logical Quagmire of Diagnosing Stress- and Trauma-Related Disorders

Posttraumatic Stress Disorder (PTSD) is the only psychiatric entity for which an external event is one of the necessary criteria for diagnosis. According to DSM- IV (American Psychiatric Association, 2000), the first criterion for PTSD is exposure to a serious stressor as defined within the system. It is also true, however, that the inclusion criteria for the stressors identified as trauma are so broad as to render the criterion essentially meaningless. According to a national survey published in the Archives of

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General Psychiatry, 61% of men and 51% of women reported experiencing at least one major trauma in their lifetimes, and in most cases more than one event (Kessler et al., 1995). In a study using the Traumatic Experiences Checklist (TEC) a self-report questionnaire developed by Nijenhuis et al. (1999), over 90% of a sample of general psychiatric outpatients reported one or more traumas, and the mean number of traumas reported was 6. Yet the prevalence of PTSD in the general population has been estimated at 3% to 6%. Clearly what is necessary for the diagnosis is not sufficient; what is trauma for one is not trauma for all.

We also recognize that long-term, chronic situations, such as childhood sexual and physical abuse, produce symptoms with features of PTSD. In some classifications, psychological abuse has been added to the categories of chronic abuse; thus the set of potentially traumatic events may now be seen as encompassing the human condition—a view that may be accurate in our times, but does not help very much for psychiatric diagnosis.

From a converse perspective, we also know that the events that people do not remember, that are severely dissociated or warded off, may have at least as much impact as those they report. If a patient shows the symptom picture of PTSD, but lacks an explicit memory of exposure to a stressor, will we not suspect a traumatic event for which the person is amnesic and proceed to treat the patient accordingly?

We are left with a definition of a traumatic stressor as an event to which a person has a posttraumatic response, and an assumption that occurrence of a posttraumatic response must imply some prior exposure to a traumatic event. If we do not know this event as yet, we seek to help the patient to remember it—with all the dangers of this directed recollection.

Further confounding the issues of diagnosis are questions concerning the large proportion of people who show apparent resilience in the face of known and documented trauma and who appear to be functioning well: survivors of concentration camps, survivors of known sexual or physical abuse in childhood; people who were present at catastrophic events. There is now some indication that these well-functioning survivors may be paying a complex psychological price for their resilience—holding components of their selves hostage to maintain their psychic balance. Thus the nature of possible response to trauma is in danger of becoming as broad as the definition of traumatic events.

My main point in putting a foot in the logical quicksand of diagnosis of PTSD is not so much to address the many problems of the DSM-IV or ICC

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criteria as to underscore my claim that in order to understand and treat these disorders, we need to go beyond psychiatric categories and try to understand the psychological processes that intervene between purported precipitating events and observed symptomatic (or asymptomatic) responses. Freud (1926) made this point three quarters of a century ago, when he wrote that the psychic effects of any danger depend on the person's "estimation of his own strength compared to the magnitude of the danger and his admission of helplessness in the face of it" (p. 166). From the perspective of mental health, it remains true that it is psychic reality, not material reality, that is the important kind. What we define as trauma or stress is an internal psychic condition, determined not only by a particular environmental situation, but by how an organism reacts to this, as his own powers and capacities allow.

The focus on basic psychological mechanisms has several major implications: 1) we can see these mechanisms as operating on a continuum with varying degrees of severity in all disorders; and 2) we can see the processes of treatment also as operating on a continuum and by this means work toward our escape from the vicious circle of definition and treatment of trauma related disorders.

Current work in cognitive science and neuropsychology provides a new basis for understanding the psychological mechanisms underlying adaptive and maladaptive patterns of response to stressful events. The multiple code theory (Bucci, 1997) provides an account of these mechanisms and their variation in response to stressful events that is compatible with psychoanalytic views and that provides a basis for treatment. Once we examine these general mechanisms, we can then also attempt to distinguish particular features that may vary with the severity and quality of the precipitating events. I'll assume some familiarity with the theory and review it only briefly here, focusing on the application to the understanding and treatment of severe disorders associated with traumatic events.

Brief Review of Multiple Code Theory

The human organism is a multi-code, multi-system emotional information processor, with substantial but limited integration of systems (Bucci, 1997). The systems are characterized as *subsymbolic, symbolic nonverbal,* and *symbolic verbal* codes. Symbols—in the sense used here, not the psychoanalytic sense—are discrete entities that refer to other entities and can be combined to make an essentially infinite variety of forms. Words are

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the quintessential symbolic forms. Symbols also include imagery in any sense modality, although the visual modality may dominate.

The subsymbolic system is less familiar conceptually and difficult to describe technically, but most familiar to us in our daily lives. Subsymbolic processing may be characterized as continuous or analogic, in contrast to the discrete representational entities of the symbolic mode. Thus computations on continuous dimensions are required for a vast array of functions, from skiing to musical performance and creative cooking; analogic processes are used in the characterizations of wines and perfumes and teas, where dimensions of continuous experience that cannot be broken into discrete elements are seen to correspond.

The phenomenon of affective attunement described by Daniel Stern (1985) is basically a type of analogic and continuous emotional communication. In the following example, the mother provides a nonverbal analogy in continuous format to her 10 month old girl's emotional expression:

> The girl opens up her face (her mouth opens, her eyes widen, her eyebrows rise) and then closes it back, in a series of changes whose contour can be represented by a smooth arch. Mother responds by intoning "Yeah" with a pitch line that rises and falls as the volume crescendos and decrescendos: . . . The mother's prosodic contour has matched the child's facial-kinetic contour [p. 140]

Subsymbolic processes occur in motoric, visceral, and sensory forms, and in all sense modalities. They are organized, systematic, rational forms of thought that continue to grow in complexity and scope throughout life. Unlike the primary process as characterized in psychoanalytic theory, subsymbolic processes are not chaotic; not driven by wish fulfillment or divorced from reality. Subsymbolic processing is modeled in cognitive science by connectionist or parallel distributed processing (PDP) systems (McClelland, Rumelhart, and Hinton, 1989), with the features of dynamical systems (Bucci, 1997). (I should emphasize that this is a psychological model, not a neuropsychological one; although it is fully compatible with neuropsychological findings.)

In such dynamical systems, memory and learning are determined by connections among the elements of the network; knowledge is distributed over the interconnected nodes of the network; retrieval of memories, including emotional memories, is understood in terms of changing patterns of activation, continually reforming, rather than as retrieval of fixed

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and stable contents. The model accounts in a systematic way for organized processing in the subsymbolic system, functioning with its own rules, outside of the symbolic mode; such processing is dominant in emotional information processing and emotional communication. We are not accustomed to thinking of processes, including somatic and sensory processes, that cannot be verbalized or symbolized as systematic and organized thought; the new understanding of subsymbolic processing opens the door to this reformulation. It changes our entire perspective of pathology and treatment when we are able to make this shift.

We know this processing as intuition, the wisdom of the body, and in other related ways. The crucial information concerning our bodily states comes to us primarily in subsymbolic form, and emotional communication between people occurs primarily in this mode. Reik's (1948) concept of "listening with the third ear" relies largely on subsymbolic communication (see Bucci, 2001, for a detailed discussion).

My claim is that the disjunction between subsymbolic and symbolic processing formats is inherent in human emotional and mental functioning, not restricted to pathology. The "theoretically perfect person whose development had been optimum," referred to by Fairbairn (1952, p. 7), would necessarily share the same organization based on multiple processing systems and inherent dissociations among them. In emotional disorders, these inherent dissociations are exacerbated and transformed in particular ways, as I will discuss.

The Referential Process

Connecting the Multiple Systems.

The continuous and analogic formats of the subsymbolic system can be mapped only partially onto the discrete elements of the symbolic code. On the simplest level, the limitations of the connecting process become apparent when one attempts to verbalize an experience that has not previously been formulated, describe a taste or smell, or teach an athletic or motoric skill, or when one struggles to express an emotion and can't "find the words."

The referential process is the integrating function of the multiple code system; imagery, which is *symbolic* and *nonverbal*, plays the pivotal role in this integration. Images of the episodes of our lives, which incorporate all sense modalities, connect in their *sensory* aspects to the analogic sensory contents of the subsymbolic code. As *discrete* representational

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elements, they are also capable of mapping onto the discrete elements of language; thus images provide the necessary link between the subsymbolic nonverbal and symbolic verbal codes.

The Emotion Schemas and the Referential Process

Adaptive functioning requires some degree of coordination (we may say "good-enough") between subsymbolic and symbolic systems in the service of a person's general functioning and overall goals. We need to bring together information from our bodies and emotions, with information from past and present experience, to make decisions about how to act at any given time, and to express how we feel.

The fundamental organizing structures of human emotional life—and probably of other species—are *emotion schemas.* Like all memory schemas, emotion schemas include components of all three processing systems—subsymbolic processes, imagery, and, later, language—but emotion schemas are more strongly dominated by sensory and bodily representations and processes than other knowledge schemas. The subsymbolic sensory, somatic, and motoric representations constitute the *affective core* of an emotion schema, the basis on which the organization of the schema is initially built. The objects and settings of time and place constitute the specific contexts and contents of the emotion schemas, which continue to be elaborated throughout life.

Emotion schemas are built through registration in memory of specific episodes of one's life. They represent the characteristic form of one's interactions with other people from the beginning of life. Interactions with caretakers play the central role in these constructions. The interactive events bring together sensory, somatic, and motoric processes with images of people, in a specific time and place, and build emotional memory by this means. Emotion schemas, like all memory schemas, are active and constructive processes, not passive storage receptacles. They determine how we experience all the interactions of life and are themselves changed by each new interaction. We see all things through the lens of memory schemas; there is no other way, no view of reality outside of this lens.

This formulation of emotions as schemas built and rebuilt through representation of the episodes of one's life is compatible with current views of emotions. According to Lang (1994),

> a memory of an emotional episode can be seen as an information network that includes units representing emotional stimuli, somatic or visceral re-

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> sponses, and related semantic (interpretive) knowledge. The memory is activated by input that matches some of its representations. Because of the implicit connectivity, the other representations in the structure are also automatically engaged, and as the circuit is associative, any of the units might initiate or subsequently contribute to this process [p.218].

The schemas of emotional memory are organized and reorganized throughout life on many dimensions. They may be connected by a common object, as in the multiple schemas of *mother*. Schemas that we characterize as *fear* or *love* or *control* or *rage* will involve complex circuitry based on episodes that are connected through a common core of somatic and sensory experience and motoric response, with some shared and some unique contextual information. Emotion schemas are also organized in autobiographical memory on dimensions of time and place to develop the *multiple schemas of the self.*

The basic concept of internalized object representations, or object relations, is essentially a form of emotion schema, as is Stern's (1985) concept of Representations of Interactions that have been Generalized (RIGs) or Bowlby's (1969) working models, and many others. Damasio's (1994, 1999) notion of dispositional representations provides a neurological basis for the construct of the emotion schema, and supports and extends this concept: dispositional representations exist as potential patterns of neuronal activity distributed throughout the nervous system, connecting sensory and association cortices with limbic structures and structures subserving motoric and visceral response. The structure of the schema provides the conceptual basis for the processes of transference (and countertransference). The patient plays out with the analyst the expectations and responses encapsulated in the emotion schema (as the analyst necessarily does—perhaps in a different way—with the patient.)

We express and represent emotion schemas in two major ways: as narratives of specific episodes from our past, drawn from memory; or as enactments, a playing out of the schema in the present, the here-and-now. In either case, whether through retrieval from memory or as enactment, the activation of an emotion schema involves not only words and images, but also some degree of arousal of the sensory and bodily experiences of the affective core. Just as visual images are now known to activate the same neural pathways involved in visual perception, the activation of the affective core of a schema involves actual physical pathways of pleasure and pain happening in the body in the present, to varying degrees.

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The activation of the affective core in connection to the people and events of life is crucial to the emotional information-processing system, to enable emotional evaluation of events as they occur in terms of their impact on the person's well-being. The person perceives an element of the event— an object in a particular place and at a specific time—or retrieves it from memory; the emotional information about this event comes from the activation of the subsymbolic sensory and somatic functions of the affective core. In adaptive functioning, that is how we use feelings to evaluate events, to know if something is good or bad for us.

Occurrence, Reactivation, and Reconstruction of Threatening and Painful Events

Characterization of Pathology

Pathology is determined by dissociation and distortion within the emotion schema, so that the emotional evaluation of the events of life is not effective. Thus new events are perceived in distorted ways, and the new information that is taken in does not correct the distortion but, rather, reinforces it.

Threats to the integration of the emotion schemas occur throughout life, primarily involving upsurges of arousal that are overly intense in relation to a person's capacity for self-regulation. In healthy-enough development, upsurges of arousal are regulated initially through the relationship with the caretaker; the child gradually develops mechanisms of self-regulation and self-soothing in this relational context. Where arousal is overwhelming or the caretaking is dysfunctional, effective mechanisms of self-regulation do not develop.

The failure of integration is particularly severe when the caretaker is herself a source of threat to the child's well-being—terrifying, humiliating, or otherwise destructive. A schema of the caretaker as a threat, activating a response of terror in the child, is unbearable, in part because of the intensity of the experience, which overwhelms the child, and, most crucially, because the caretaker is the one to whom the child must turn for protection in time of danger. The schema of mother as a danger to oneself is incompatible with the schema of mother as protector; the child is under attack and there is no place to turn.

The child then attempts to deal with the threat in some way. She cannot realistically attack or escape physically; she is small and weak and fears being abandoned. What she can do is turn attention away from the threat

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and from the perception of the caretaker as the source of terror; dissociation of the emotion schemas occurs through such a process. Bromberg (2001) writes about a patient who says:

> When I was little and I got scared—scared because Mommy was going to beat me up- I'd stare at a crack in the ceiling or a spider web on a pane of glass, and pretty soon I'd go into this place where everything was kind of foggy and far away, and I was far away too, and safe. At first, I had to stare real hard to get to this safe place. But then one day Mommy was really beating on me and without even trying I was there, and I wasn't afraid of her. I knew she was punching me, and I could hear her calling me names, but it didn't hurt and I didn't care. After that, anytime I was scared, I'd suddenly find myself there, out of danger and peaceful. I've never told anybody about it, not even Daddy. I was afraid to because I was afraid that if other people knew about it, the place might go away, and I wouldn't be able to get there when I really needed to [pp. 904–905].

Dissociation and distortion within the emotion schemas may occur in response to acute external traumatic events at any time in life, as well as through more chronic problems of the caretaking situation. The development of general structures of dissociation in the context of chronic early stress will render the individual more vulnerable to the later events of life.

We may see the processes of avoidance and dissociation in response to aversive threatening stimuli as having their roots in generally expected organismic responses to such events. The major types of response to threat for all organisms have been characterized as flight, freeze, and fight (Timberlake and Lucas, 1989; Nijenhuis, Vanderlinden, and Spinhoven, 1998); these operate at different points in the occurrence of the threat and in response to different types of danger. Flight or freezing responses are most characteristic of a child who is powerless to attack the caretaker; freezing has the added physiological benefit of associated analgesia, reducing the level of pain. We see this in the example of Bromberg's patient quoted earlier. Threats occurring later in life or in other circumstances may activate the particular patterns of fight, flight, or freezing that constitute the characteristic organization of a person's response to threat.

In all cases, the response to threat involves some form of dissociation within or between the emotion schemas; these dissociations may take several major forms. Dissociation within schemas may emerge as arousal of the subsymbolic components of the affective core of terror with associated flee or attack or freeze responses, without recognition or acknowl-

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edgment of the object that is the source of the activation; or a distorted image of the object may be experienced as split off from the subsymbolic components of the affective core. Dissociations within schemas also lead to dissociations between them. My claim is that such dissociative processes underlie all emotional disorders, whether or not a specific trauma is identified.

This formulation of dissociation within and between the emotion schemas as underlying emotional disorders is compatible with clinical observations and also with biopsychological data. Van der Kolk (1994) has described the occurrence of fragmentary memories with vivid, intrusive, unmodulated affect, not oriented to space and time, or generalized feelings of anxiety, anger, fear, or uneasiness, which he refers to as body memories. Such feelings have been characterized by van der Kolk and Fisler (1995) *as disconnected images and waves of disjointed sensations and emotions.* In multiple coding terms these are accounted for as dominance of the subsymbolic components of the emotion schema while avoiding acknowledgment of their source. Payne et al. (2004) have identified this form of dissociation with the defense of "undoing" (Freud, 1926) in which autobiographical information associated with the trauma is pushed out of awareness, leaving persistent, generalized, free-floating anxiety without an apparent source.

Clinicians have also identified the converse form of dissociation in which a person retains memories of abuse or trauma but affect is flat. This form of dissociation is related to the mechanism characterized by Freud (1926) as "isolation of affect" and may be described by clinicians as emotional blunting or emotional numbness. As Chefetz (2004) characterizes this phenomenon, the idea of a feeling is dissociated from the bodily or emotional experience of it; thus a patient may say, "I know I am angry, intellectually; I just can't feel it, none of it" (p. 251). In such cases, symbolic elements of the schema remain accessible without connection to the associated bodily states.

The psychological formulation of dissociation within emotion schemas as underlying pathology is directly supported by biological evidence. Memories of specific events are experienced and stored in multiple systems, including all sensory modalities, motoric systems, and visceral and autonomic systems. Operation of emotional memory and emotional information processing depends on communication among hippocampal, amygdalar, and cortical networks. There is no single anatomical location for the representation of the stressor events; they are widely distributed

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throughout the limbic system and cortical zones. The hippocampus and adjacent medial temporal regions are critical to the integration of components of information from these multiple systems in episodic memory, and to orientation of episodes in space and time in autobiographical memory. Stress affects integration of information through direct impairment of hippocampal and cortical functions, and through disturbance in their modulation of the amygdalar functions.

According to Jacobs and Nadel (1985), in the absence of an intact hippocampus-based memory system, the amygdala-based system stores emotional information unbound to the spatiotemporal context of the relevant events. This process results in a pool of emotional memories, essentially a population of sensory and perceptual fragments, that are acquired during the traumatic event but encoded without a coherent spatiotemporal frame to organize them.

There is also evidence that the brain regions and hormonal effects that are activated during encoding of stressful events are activated as well during retrieval of these memories (Damasio, 1994, 2003). Just as visual images are now known to activate the same neural pathways involved in visual perception, the arousal of the affective core of a schema involves actual physical pathways of pleasure and pain happening in the body in the present, to varying degrees, and may elicit responses that are similar to the actual event. This process accounts for continued proliferation and elaboration of these maladaptive perceptions and response patterns long after the external stressor is past, and is a crucial factor in treatment.

Attempts at Self-Repair

The affective core of an emotion schema is likely to be activated when elements associated with the schema occur in a person's life. If the schema is one in which dissociation has occurred, these upsurges in arousal may have no apparent source. People seek in many ways to provide emotional meaning for these feelings of agitation and arousal, and will attempt to regulate and contain them. The regulatory and control strategies range from the apparently effective modes of resilience to the myriad forms of emotional disorders, from neurotic to severe posttraumatic forms. In apparent resilience, for example, the arousal may operate as motivation for achievement or may stimulate a lifetime of devotion to the welfare of others. In generally less adaptive modes, a person may attempt to seek meaning for the painful arousal in somatic complaints, in identifying potential aggressors, or by reinterpreting the arousal—for ex-

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ample, interpreting unacceptable anger as anxiety; or by turning it against the self in depression and suicidal attempts. The many complex constructions of pathology, including addictions, phobias, eating disorders, and even psychotic symptoms, may be accounted for by such attempts at managing the affect of a dissociated schema and providing some symbolic meaning for the subsymbolic response; they may be seen in a metaphoric sense as disorders of the immune system in the psychic domain.

Dissociations within the emotion schemas can lead to dissociations between them. In reasonably adaptive functioning we maintain multifaceted complex images of others and of ourselves, coexisting in memory on a single autobiographical time line. In some cases, however, the attempts at repair of the schemas lead to splitting of the representations of others and to breakdown of the self-representation and interference with the organization of autobiographical memory. An elaborated schema of one's mother as benevolent and the source of sustenance cannot exist in autobiographical memory alongside an image of mother as threatening one's life. An image of oneself as rageful and powerful that may be developed later in life as part of one's body armor is not compatible with an early image of oneself as helpless and alone. Thus one may experience oneself as having separate parts of the mind that function with some autonomy; the syndrome of dissociative identity disorder (DID) may be understood as involving such dissociations among the emotion schemas, along with other features.

Summary of Pathological Processes

To summarize this very brief and oversimplified characterization of path-ology in multiple coding terms, I would like to emphasize several major points with respect to the several forms of dissociation that have been identified here:

First, it is the integrative function of the multiple code system, the referential process, connecting subsymbolic and symbolic processes within the emotion schemas, that is impaired by trauma or chronic stressors, not one or the other of the processing systems. The individual continues to process information on the subsymbolic and symbolic levels, and both modes of processing may occur within awareness but without connections among these experiences. A young woman suffers from severe lower body pain, including stomach or menstrual cramps, which appear to have no organic basis, and visits gynecologists repeatedly for this condition, even demanding surgery. She also has memories of sexual abuse

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by her brother, largely devoid of affect but does not connect her current bodily experiences with her memories of abuse. A young athlete finds himself unable to perform adequately in a particular important game, and the self-doubt reverberates to destroy his coordination further; he remembers being beaten by his father and is grateful to his father for the discipline, but does not connect the experience of failure with the beatings.

Second, the nature of pathology and the crucial problems for treatment are determined not only by the initial dissociations that occur in response to threat, but also by the secondary effects, the attempts at self-protection and development of emotional meaning for upsurges of arousal that a person employs once the dissociation has occurred. We see this process in both cases just described: the somatizing in the first case; the self-doubt and failure of physical coordination that is preferable to rage at the father in the second. These attempts at self-repair add layer after layer to the onion of pathology that must be addressed before the initial avoidance can be understood.

Third, to emphasize again: there is a spectrum of dissociative processes that apply in all aspects of life, adaptive as well as maladaptive. It follows that analyses of the psychological processes of dissociation and their biological correlates apply to varying degrees and in different ways for all emotional disorders.

Implications for Treatment

For all psychic disorders, the minimal goal of treatment may be stated as enabling more adaptive and effective regulation of the painful hyperarousal of the affective core of the emotion schema, so as to provide a functional space for the patient to go on with life with reasonable satisfaction and without overwhelming pain. This may also require that the patient give up the modes of self-cure that have proven maladaptive. There are two major alternative therapeutic strategies for achieving these goals: one is to enable more adaptive means of affect regulation without addressing the initial sources of the dissociation; the other is to work toward integration of the schema; this would necessarily involve some reactivation of the initial threat. In actual clinical work, the two approaches are likely to interact to varying degrees.

To the extent that the affect is experienced as overwhelming, actually threatening homeostatic regulation, maintenance of the dissociative processes may be appropriate. This may apply for all patients at certain

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times. The approaches of symptom management—developing mechanisms of self-soothing, building a sense of mastery, and prescribing medication—may also have positive secondary effects; patients learn to be less afraid of the emerging upsurges of arousal as they acquire better mechanisms of managing their effects, and may develop new and positive associations to the contexts in which such tension reduction occurs. They may gradually then become more amenable to techniques involving titrated activation of the schema's affective core.

There are obvious problems if treatment ends without addressing the dissociation to some degree. What patients are able to avoid at certain times, in certain contexts of life, remains alive to trouble them later, when their life situation has changed. The zones of relative comfort may diminish, as more experiences become colored by expectations of dreaded events. Through the activation of the painful affective core in different contexts, not recognized or understood, the events and images that need to be avoided will expand. This is the developmental proliferation of pathology—the tunnel vision—that narrows the possibilities of life.

Bromberg's (1998) portrayal of his patient Christina, "a beautiful and talented poet in her early 50s," illustrates the process of survival by maintaining a rigid dissociative structure, and its effects. Christina was a survivor of brutal childhood trauma, whom Bromberg describes as going seamlessly through the actions of life like a very effective wind-up toy, doing what is expected of her, entirely repudiating spontaneity of response. Her inner world remained vulnerable to sudden violent disruption in response to such events as thunderstorms and other loud and sudden noises, which she managed to some degree by a series of rituals. As Bromberg describes her, "Christina was a patient for whom life was a series of rituals to be performed while she was waiting for death, and therapy was simply one more ritual among many" (p. 323).

The second major strategy of treatment, working toward the goals of reintegration, requires the patient to break through the rituals and confront the demons, to allow the activation of the dreaded schema in the present to some degree, with its potential risks and rewards. Elsewhere (Bucci, 2002, 2003) I have discussed in detail how the referential process works in the context of the treatment relationship to bring about changes in the emotion schema—changes in what we perceive and feel and what we expect from others, not only in what we do. This basic process applies in any uncovering treatment, with variations depending on the nature of the emotional disorder.

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The referential process involves three major phases: 1) arousal of the affective core of the emotion schema; 2) experiencing imagery of a specific episode and telling it in concrete detail or reenacting aspects of it; and 3) some reflection and examination of the episode. Reintegration of the dissociated schemas requires repeated playing out of these phases in the interpersonal context of the relationship, so that the affective core itself gradually undergoes change in relation to perception of the present, memories of the past, and expectations of the future. The change in the subsymbolic processes of the affective core in relation to imagery and perception of objects and events is what we mean by working through.

The referential process applies in treatment of all disorders, whether or not specifically trauma related; the following specific issues need to be confronted when one is working with patients with severe disorders reflecting massive dissociation within and between the emotion schemas:

1) Actual change, reintegration or reconstruction of emotion schemas, requires actual activation of the affective core of the dissociated schema to some titrated degree in relation to a new object and in a new context with a new recognition of the capacities of the self. We need to recognize when it is useful to facilitate such activation and when it is not. We also need to keep in mind that the analgesic function of the freeze response to the original threat may not operate at the time of memory retrieval; survivors have described how the retelling of an event is experienced as more painful than the actual occurrence.

2) The protective processes that people have developed throughout life to shield themselves from the emergence of the dreaded affect will continue to operate in the treatment.

3) In many cases, particularly in instances of long-standing and chronic abuse, the protective processes have become intrinsic components of the person's self-schema, sense of self, and view of the world in relation to the self. The patient may experience any challenge to these protective processes not only as a risk of activation of the physiological components of the dreaded affective core, which have the potential to threaten life, but also as threatening his sense of self. The anticipation of loss of self, with its component of shame and helplessness, is in some respects as painful or more painful than anticipated danger to life, as Bromberg (1998) has emphasized.

4) If activation of a schema does occur to a relatively intense degree, even in a new context, there is the danger that the new context will be drawn into the schema, rather than the schema being perceived as new.

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5) Focus on general themes that do not involve the referential process and do not activate the affective core will leave the schema largely unchanged, although new strategies for avoidance may be enhanced by this means.

6) The danger exists that pathology may be reinforced rather than alleviated through activation of the affective core. The danger is greater to the extent that the treatment situation actually shares elements with the initial traumatic events; as, for example, when a therapist maintains a neutral or distancing mode or focuses on interpretation of resistance with its element of blame - thus resonating unintentionally with the feelings of humiliation and powerlessness that are at the core of the patient's distress.

Bromberg's (1998) description of Christina's treatment illustrates some of these issues. He reports that after about four years of treatment, experienced largely as hopeless by both analyst and patient - but with a few breaks in the wall of futility—Christina's long-anaesthetized appetite for life began to find voice and life began to seem worth the risk. At this point, Christina reported the following dream, which provides a good metaphor for the vicious circle of treatment of trauma and dissociation, with perhaps some hope:

> She was walking along the top of a seawall that began to get narrower and narrower until she was at a place she couldn't go forward without falling into an abyss. But she couldn't go back because she couldn't turn around. The scene then shifted to her looking at herself in a mirror and suddenly noticing a second head growing out of the side of her own head. The face wasn't there yet, and she was terrified of it appearing. She didn't want to see it [p. 325].

Bromberg writes, "In allowing herself to dream the dream, she was conveying that although she felt her analysis might be leading her toward 'the black hole' of madness she was no longer accepting the existential deadness of dissociation as the price for escaping potential retraumatization" (p. 325). In time, in the course of the analytic work,

> Christina was now able to experience anxiety for the first time and distinguish it from the traumatic dread that had been her constant companion, telling her she was always on the edge of the "black hole". She could now recognize anxiety as something unpleasant but bearable - something she *felt* rather than a way of addressing the world. . . . She recognized that she was now taking the risk of pursuing a life that included self-interest, and

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> that in choosing to live life rather than wait for it, she had accepted the inevitability of loss, hurt, and ultimately death as part of the deal [p. 328].

Strachey (1934) discussed the "neurotic vicious circle"; issues similar to those that Strachey noted apply in different ways to the broad range of patients whom analysts see today. We need to recognize the risks and the rewards of this uncovering process. The tradeoff of psychic numbness coupled with chaotic intrusion on one side, against vulnerability to pain that is viewed as unbearable on the other, exists to varying degrees and in different ways for patients with all emotional disorders, not only for victims of abuse. The challenge of the treatment is determined by the intensity of the threat and its meaning for the individual. The challenge also depends on the mechanisms of repair that were overlaid on the initial dissociation to enable the person to go on. The circle will be broken as both the estimate of the magnitude of the danger and the estimate of one's own strength are revised through exploration in the new context of the treatment relationship. The reward includes vulnerability to pain and fear, but also feelings like bravery, love and joy—a sense of self, a connection to others, and a sense of life.

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Wilma Bucci, Ph.D. is a Professor, Derner Institute, Adelphi University; and Honorary Member, American Psychoanalytic Association and New York Psychoanalytic Institute

Derner Institute
Adelphi University
Garden City, NY 11530
bucci@panther.adelphi.edu