

Bridging the Black Hole of Trauma: The Evolutionary Significance of the Arts

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One word for the Devil is 'Diabolos', the divider, the splitter-into-fragments. Healing likewise has always been associated with integration, integrity and becoming whole. From ancient times to the present, artistic performance in all its variety has been connected to healing of self and community and yet a recurrent question arises, 'What are the arts for?'. A less than concrete answer to this question appears to justify reducing or eliminating funding to arts-related programs whenever financial crisis occurs. This paper explores the evolutionary significance of trauma, dissociation, and the human brain and raises the possibility that the evolutionary selection of artistic performance is as a primary integrating mechanism for traumatized individuals and groups, without which human beings may not be able to fully heal. Copyright © 2010 John Wiley & Sons, Ltd.

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Every work of art points somewhere beyond itself; it transcends itself and its author; it creates a special force field around itself that moves the human mind and the human nervous system.

Vaclav Havel, *Disturbing the Peace* (p. 198)

INTRODUCTION

For as long as humans have been capable of pondering the nature of illness, disease has constituted a dis-integration, a loss of intactness, a separation into parts, a break up, a deterioration, a reduction to fragments or parts. One word for the Devil is *Diabolos* – the divider, the splitter-into-fragments (Skynner and Cleese, 1993). Western medicine traces its roots to the ancient Greeks and the original therapists, the *therapeutes*, those chosen as the attendants of the cult of Asclepius, the god of healing. According to Plato, it was Asclepius who was able to bring about 'love and reconciliation between the most antithetic elements in the body' (Meier, 1989, i).

As the story goes, Asclepius was the son of Apollo who learned the art of healing from Chiron, the Centaur, half-man, half-beast. Healing the two Chiron-sides of man, the

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irrational and the rational, was the work of Asclepius, who practiced the double side of medicine – the science and the art. The other vital position that Asclepius held was as the patron of artists. Serving the god required artistic performance in the form of ritual, poetry, songs, music, and performances. Musical and poetic competitions took place at his place of worship and the temple of Asclepius in Athens was immediately adjacent to the great Theatre of Dionysus (Meier, 1989).

Native American cultures also provide us with examples of the relationship between healing and the arts. According to the Navaho, ‘*to be sick is to be fragmented. To be healed is to become whole, and to become whole one must be in harmony with family, friends, and nature*’ (Van der Hart, 1983, p. 57). In tribal groups, healing ceremonies are the main therapeutic and the entire social group participates. The ceremony often includes a re-enactment of the initial or pathogenic trauma that is supposed to have caused the loss of integration, and a fundamental part of the ceremony is often a re-enactment of the great myths of the tribe (Ellenberger, 1970). The ceremonies comprise a complex performance utilizing music, dance, art, costumes, and verbal scripts, all in a group setting that typically involves the entire community. This ceremonial activity is used for individual healing but serves a basic social function as well, marking off major events, both natural and traumatic, for the entire tribal group.

Throughout the centuries, philosophers and artists have pondered the question, ‘What is art for?’ Why are human beings drawing, staging, singing, and dancing at least as far back as our ancestors who lived within highly decorated caves? The art historian, Dissanayake (1988, 1992) has written convincingly about the evolutionary nature of artistic development, but why would such a complicated and apparently superfluous capacity become so highly developed? What is the survival value of singing, painting, dancing, and storytelling?

Evolutionary psychology looks at the inherited architecture of the human mind as the product of an evolutionary process, reflecting the needs of our hunter-gatherer ancestors. After all, human minds, human behavior, human artifacts, and human culture are all biological phenomena – aspects of the phenotypes of humans and their relationships with one another (Cosmides et al., 1992). This paper is an attempt to look at trauma, dissociation, and artistic performance from the point of view of ‘conceptual integration’ – the principle that various disciplines within the behavioral and social sciences should make themselves mutually consistent and consistent with what is known in the natural sciences as well (Cosmides et al., 1992).

In this paper, I will make the case that artistic performance, in all its variations, is a primary integrating mechanism in an organism highly susceptible to the protective, but ultimately destructive mechanism we call *dissociation*. The traumatic nature of our evolutionary history necessitated the development of adaptive coping skills, but the result of employing these skills is fragmentation and the loss of integrated functioning. Human beings are uniquely capable of altering reality in many different ways, but this altering capacity can become so profound that we are equally capable of losing our way, trapped in our self-created, self-deceptive, dissociated reality, which may bear little relationship to the fundamental nature of earth, air, and other living beings. There is already a large accumulated body of knowledge about the relationship between creativity and individual healing. I hope to establish a firmer theoretical framework for why this relationship is so important. This framework has not just individual, but social implications as well. We must keep in

mind the lessons of our ancestors about the essentially social nature of human survival and of artistic performance – creative expression may turn out to determine the state of health or illness of an entire society as well.

ABOUT EVOLUTION, TRAUMA, DISSOCIATION, AND THE HUMAN BRAIN: RECALLING OUR EVOLUTIONARY CIRCUMSTANCES

Flooded with images of the wanton destruction that man has wrought on his environment and upon the other animal species that share this world with us, it is difficult to remember that it has not always been this way. For the millennia before written history, human beings were not predators but prey. Exposure to overwhelming traumatic events and human evolution are intimately entwined. In her book, *Blood Rites*, Barbara Ehrenreich has pointed out that ‘the original trauma, meaning of course, not a single event but a long-standing condition – was the trauma of being hunted by animals and eaten’ (Ehrenreich, 1997, 47). Viewing our distant past from this perspective, it is a wonder that our species even survived, given our lack of adequate defense or protective adaptations.

To do so, we developed some very special adaptive skills. We learned to bond together – and fight together, not only for food but also for mutual defense. We developed unique forms of communication in order to convey information over time and over space – symbols and then language. Our brains enlarged, becoming capable of making thousands of associations to any event. Our memories became more tenacious than those of our mammalian ancestors, compelling us to hold on to information throughout a lifetime, particularly memories induced by fear. Our emotional systems, hardwired to our autonomic nervous system as an inheritance from our mammal relatives, became even more intimately connected to our memories, our need to attach to others of our kind, and our complex network of thoughts and ideas.

Although ultimately this growing complexity gave us superiority over other species, there were some distinctive problems. Like our modern computers, the sophisticated functioning of our complex brains demanded a high degree of ‘system integration’ and certain optimal conditions for proper operation. Traumatic experience produces a physiological overload that the brain and body are unable to manage adequately, preventing us from continuing to function normally. Our primary defense to cope with this physiological overload is a mechanism called ‘dissociation’. Although a life-saving coping skill in the short-run, dissociation produces fragmentation of vital mental functions, and the result is diminished integration and therefore impaired performance. Let’s look more closely at how dissociation works.

PURPOSES OF DISSOCIATION

Human beings alter their reality with such consistency and frequency that we are forced to conclude that this capacity is innate and must therefore have significant survival value. We alter our reality through our capacity to enter different states of consciousness that allow us to maintain separate – and often contradictory – bodies of knowledge. We call this capacity *dissociation*. In its acute state, after some tragic occurrence, it is common to recognize that people are ‘in shock’ – that is, they are acutely dissociated. As a result they may not remember the terrible events that just occurred, or they may remember them but

have no feeling about the events. Sometimes the shock is so sudden and profound that the person separates from consciousness and faints. Until recently, however, we have thought little about what it means to be 'in shock' most of one's life – to suffer from chronic dissociation because of terrible things that have happened repeatedly. Nor has there been a clear recognition that dissociative experiences cover a wide spectrum from the extreme states that require psychiatric treatment to experiences that we all have every day.

Although it sounds complicated, dissociation is actually something that is familiar to all of us. Think back to the last time that you were driving your car for a reasonably long distance. While automatically engaging in an activity – driving – that years ago demanded your full attention, you were also able to engage in any number of other activities – planning a talk, recalling a conversation from the night before, singing a song and remembering the events surrounding the last time you heard that song. Here is an example of how you, in your everyday life, carry on functioning while drawing upon several different bodies of knowledge, although only really paying attention to one. This everyday example of a trance-like experience is so routine for us that we barely ever recognize or think about it and yet this is an example of a dissociative experience.

There are several presumed reasons behind the evolutionary development of the capacity for dissociation, including the recognition, as in the example above, that it allows us to be more efficient, able to do two or more tasks simultaneously (Ludwig, 1983; Putnam, 1989; Schumaker, 1995). Through this mechanism, much of our behavior can become automated so that we are able to perform complex tasks like driving and navigating an automobile while planning a morning's lecture or reworking an argument with a spouse.

Another adaptive purpose for dissociation is the degree to which it promotes a group response. Inducing dissociation or a trance state is far easier in a group setting and all cultures have social mechanisms, often closely tied to artistic performance, that are designed to induce group trances (Schumaker, 1995). There are good evolutionary reasons for this. 'The central problem for any species whose primary adaptive techniques depend largely on collective, rather than individual, action, is to develop and maintain social coherence and coordination over time' (D'Aquili, Laughlin, and McManus, 1979, 28). Dissociation serves this task extremely well, allowing participants in a socially contrived trance induction to enter the same emotional state, the same level of arousal, and the same level of vulnerability to suggestion. All of these factors serve to enhance group cohesion, decrease group conflict, and be more open to the instructions of a leader. Tribal dances, music, drumming and chanting all serve this purpose, affecting not just our psyche but our brain function.

But most importantly for the purposes of this discussion, dissociation is a primary response to traumatic experience. This appears related to at least two other functions of dissociation: it allows us to transcend, to escape from, the constraints of reality and in doing so, it allows us to tolerate irreconcilable conflicts. This is vital for a species whose consciousness demands the constant ordering of reality. This demand has been termed the 'cognitive imperative', referring to the 'drive in man, other mammals, and birds to order their world by differentiation of adaptively significant sensory elements and events, and to the unification of these elements into a systemic, cognitive whole' (Laughlin, McManus, and d'Aquili, 1979). Humans, however, although subject to this cognitive imperative, have a special dilemma that does not appear to plague our mammalian or avian cousins – there is a great deal about reality that we simply cannot bear. There is a high price to pay for

self-awareness. How does one place into a meaningful and ordered scheme, the idea of one's own death? 'The human brain evolved in such a way that it became capable of arriving at greater order than it perceives' (Gazzaniga, 1985, 164).

The order that we perceive in our reality, the order that allows our brain to have an environment necessary for maximal functioning, is the safety and meaning that we create together as a social species. When the human brain became capable of our unique consciousness and its overwhelming awareness of self, other, life, and death, our survival demanded an evolutionary strategy that would allow our brain to dissociate itself from its own information when necessary – when the contradictions that we perceive in our awareness of life and death become too much to bear. Through dissociation, we can deny important aspects of reality that are too disorganizing, too threatening to our own internal stability either individually or as a group. And yet, survival demands that we keep both sides of the contradictory information available just in case we should need it. In that way we know without knowing. For the individual, this knowledge that is out of conscious awareness becomes the material that people spend years in individual psychotherapy trying to retrieve. Groups of people tend to dissociate as well, often not fully dealing with a group traumatic event until decades after it has occurred (Pennebaker et al., 1997).

During our long and traumatic evolutionary history, we learned to perceive the environment selectively, selectively process information, selectively store memories, selectively disengage from stored memories, and to replace dissociated data selectively with less disturbing data (Schumaker, 1995). The neural devices subserving this ability to deceive ourselves resulted in a sense of personal reality that could vary dramatically, from person to person and culture to culture.

This personal, individual sense of reality is profoundly determined by how much it lines up and is consistent with what our culture defines as reality. Cultural reality has been defined as 'the constellation of externally delivered suggestions that are normalized on the basis of group endorsement' (Schumaker, 1995, 22).

Defining a shared cultural reality is a central function of any workable culture. Religious, moral, political, and economic ideological systems are designed to provide a basis for that sense of cultural reality in which each individual participates. The main difference between culturally accepted alterations of reality commonly noted in religious ceremonies and political events, and the common forms of twisted reality noted as the symptoms of psychopathology, is that in the former people agree together to ignore and deny the distortions and contradictions that exist, while in individual pathology no one else agrees with the view of reality shared by that individual. Instead, the person is called delusional, mad, or at the least eccentric. There is a borderline between these two realities, however. Children, artists, prophets, visionaries spend time there and how they will be greeted in their culture will be determined by many factors including how willing the culture is to come to grips with a denied reality and how well the individual can manage to fit into the culture without appearing too threatening.

Our capacity for dissociation grew out of another vital need springing from our traumatic past. Our central nervous system is very vulnerable to the effects of stress. Overwhelming stress is physiologically and cognitively disorganizing. Dissociation helps to protect and buffer the central nervous system from this physiological and emotional hyperarousal.

Our emotions alert us that something is out of kilter, not right, not what we want. They are our sensitive ‘mental radar. We perceive the experience of our feelings through our minds but because every separate emotion evokes a specific pattern of response in the autonomic nervous system, every emotion radiates an effect throughout every organ in our body. Every language, in fact, has dozens of expressions for emotions that are expressed in physical terms – ‘a lump in the throat, ‘a broken heart, ‘bowels in an uproar, ‘a sickening feeling’ – all are examples of this deep knowledge. But because our emotions are so intimately connected to our vital organs, it is entirely possible to die of fright or die of a broken heart. Additionally, prolonged emotional arousal has negative consequences for vital organ systems in the form of stress-related illnesses (Horowitz, 1986, McEwen and Gianaros, 2010).

Since one of the main purposes of our emotions is to alert us to the occurrence, significance, and nature of events and experiences that are part of our reality, any disorder, any disruption of established meaning or belief, will evoke a powerful emotional response. This response will not stop until the disparities are resolved, until we have reordered our reality (Harber and Pennebaker, 1992). Our feelings will not let us rest until our inner conflicts have been resolved.

Given our evolutionary exposure to repeated traumatic experiences, it stands to reason that survival would be greatly served by the development of a mechanism like dissociation that allows us to reorder reality in a more palatable way, separate our emotions from our experience, and even separate our sense of self from the reality of what is happening. All of these devices can effectively calm down our bodies’ hyperarousal. ‘As we replace reality with bias and distortion, we buffer the nervous system and safeguard psychological intactness’ (Schumaker, 1995, 32).

The result of this phenomenon is that health is associated with illusions, in fact ‘a considerable amount of insanity, in the sense of being out of touch with reality, is requisite to optimal mental health’ (Schumaker, 1995, 21). According to one researcher who has extensively studied ‘positive illusions’, our ability to redefine our reality results in an increase in productive work, improves aspects of our intellectual function, improves our memory, inhibits disturbing memories, increases motivation, improves performance, improves coping, and gives us better physical health (Taylor, 1989). Certainly, people who are highly self-conscious, know themselves well and have more realistic perceptions of the world also tend to be more depressed (Schumaker, 1995). As Santayana put it, ‘Sanity is madness put to good uses; waking life is a dream controlled.’ Let’s look in more detail at what we are learning about the effects of traumatic experience (Santayana, 2009, 269).

THE EFFECTS OF TRAUMA

Traumatic experience is profoundly disruptive to every aspect of a person’s function. Any experience of danger is associated with hyperarousal, a total body response that produces a profoundly altered state of consciousness and marked changes in the way our minds deals with information, memory, and emotions. The shocked individual goes into survival mode, preparing himself or herself to do anything that will further the chances of sustaining life. In service of this, consciousness narrows to a focus on whatever is provoking the dangerous situation. The body and mind prepare to take action. In this state, the capacity for decision-

making is dramatically altered and information processing is confined to the needs of the immediate moment without consideration for alternative plans or the long-range consequences of decisions that are made (Janis, 1982). Emotional states of fear/terror are stimulated rapidly and serve to motivate the person to fight or to flee. If the emotional state is so paralyzing that individuals cannot adequately protect themselves by either fighting or fleeing, then the only option they may have open is to separate from – or dissociate – from emotions entirely. This is particularly true for children in frightening situations who are physically unable to fight back or to run away from the source of the danger.

One of the most remarkable aspects of trauma is the loss of language, the sense of ‘speechless terror’ that so often accompanies overwhelming life events. Studies of the brain-in-action have demonstrated that when a traumatized person is remembering a traumatic event, the language areas of the brain literally shut down while the nonverbal visual and sensory-emotional areas of the brain remain quite active (Rauch et al., 1996). Memory functions shift, so that verbal memory – the memory we draw upon when we are thinking – is diminished or shut-down entirely, while an alternative visual and sensory-physical memory function is utilized, providing faster access to information that could be life saving (Van der Kolk, 1994). But the result is that we lose language – we lose the capacity to put the most terrifying aspects of an experience into words and therefore we cannot ‘remember’ those aspects of the events, meaning we cannot put them into words. If we cannot remember the events, then we cannot think about them, cannot talk about them, cannot share the experience with others.

But this loss of language occurs in other states as well. As far back as 1912, the early psychoanalyst George Groddeck commented on this when he noted that ‘when something has to be communicated from the innermost soul as happens particularly in relationships between men and women, then it is done by gesture, touch, by the light of the eyes, perhaps even by music, but never by language. The barrier is insurmountable’ (Groddeck, 1977, 249). Elaine Scarry, in her book about the body in pain, has pointed out that ‘physical pain does not simply resist language but actively destroys it, bringing about an immediate reversion to a state anterior to language, to the sounds and cries a human being makes before language is learned ... to witness the moment when pain causes a reversion to the prelanguage of cries and groans is to witness the destruction of language’ (Scarry, 1985, 4).

TWO HEMISPHERES – TWO MINDS?

This loss of language function is critical to our understanding of what happens to the traumatized person. Language serves many functions including social communication, but perhaps most importantly, language allows us to order reality. As discussed above, there is evidence that this loss of language function under conditions of high stress is related to an actual inhibition of the language areas of the brain. Language functions are controlled by one hemisphere of the brain – whatever side is dominant in the particular person, usually the left side. During a traumatic experience it is thought that the dominant hemisphere is inhibited while the nondominant hemisphere, controlling sensory-perceptual experience is stimulated (Van der Kolk, 1994).

This lack of symmetry between left and right hemispheres is unique to human evolution. As a prominent neuroscientist has commented, ‘hemispheric asymmetry is probably the

most fundamental biologic hallmark of human cerebral evolution' (Mesulam, 1985, 49). The nondominant hemisphere – the right in most people – is specialized for at least four areas all of which relate to our topic: complex and nonlanguage perceptual tasks including our ability to identify familiar faces; where and what we decide to pay attention to; behavior that is influenced by emotions; and the emotional aspects of communication (Mesulam, 1985). This includes 'prosody' – the parts of speech that convey attitudes and emotions – as well as 'kinesics', the limb, body and facial movements associated with nonverbal communication (Ross, 1985). As we will see, facial expression and the prosodic aspects of speech, and emotional behavior are all involved in emotional contagion, social interactions and the arts.

We also know that the nondominant hemisphere processes information differently from the dominant, language hemisphere. It reasons by nonlinear association rather than by syllogistic logic. For the dominant hemisphere, cause creates effect in a logical sequence. But in the world of the nondominant, usually right, hemisphere, things are not sequentially, cause-and-effect logical. One doesn't necessarily arrive at conclusions as a result of a sequence of step-by-step thought. Instead, there is a holistic kind of knowing that often is described as 'intuition' or 'hunch'.

The nondominant hemisphere is far superior to the dominant hemisphere in part-whole relations – seeing and experiencing events or objects all-at-once rather than in parts. There is a sense of timelessness about the nondominant hemisphere perception, because it may be the logical sequence of language that gives humans our sense of time (Van der Kolk, 1994). 'The perception of time and language are inextricably bound up with one another' (Høeg, 1995, 253). No other species speaks and no other wears watches or invents clocks. The 'language' of the nondominant hemisphere is very different. It uses word-pictures, not words; recognizes facial expressions, and can sustain emotional expression and goals different from the left (Galín, 1974).

In fact, the nondominant hemisphere can apparently feel things that are different from what the dominant hemisphere feels. The hemispheres differ in the processing of emotion, with the dominant hemisphere appearing to control positive emotions and the nondominant controlling negative experience and expression of negative emotions (Mesulam, 1985). The left, or dominant hemisphere seems to operate the system that compels us to approach certain experiences or people by activating the emotion we describe as happiness, and the right, nondominant hemisphere operates the system that compels us to withdrawal from activities or people who upset, frighten or disgust us (Davidson et al., 1991).

It has been suggested that the two hemispheres experience two different realities, two separate states of consciousness. This separation has been demonstrated in people who have the connections between their two hemispheres severed to prevent epilepsy – the so-called 'split-brain' patients. 'The mental processes in the right, cut off from the left that is directing overt behavior, may nevertheless continue a life of its own. The memory of the situation, the emotional concomitants, and the frustrated plan of action all may persist, affecting subsequent perception and forming the basis for expectations and evaluations of future input' (Galín, 1974). But there is also reason to believe that trauma produces a kind of 'split-brain' phenomenon in which there may be some kind of inhibition between the right and the left hemispheres as a result of experiences too overwhelming for the mind to handle that produces a similar effect.

At least one author has gone so far as to conclude that the unconscious mind *is* the non-dominant hemisphere and that traumatic experience causes a disconnection syndrome between the hemispheres (Joseph, 1992). 'The right hemisphere maintains a highly developed social-emotional mental system and can independently perceive, recall and act on certain memories and experiences without the aid or active reflective participation of the left hemisphere' (Joseph, 1988, 630). The symptoms of 'hysteria' are frequently associated with trauma and Joseph has pointed out that people suffering from hysteria are two to four times more likely to experience pain and other distortions on the left side of the body, suggesting an etiology related to the nondominant, right hemisphere (Joseph, 1988). Interestingly for our purposes here, the nondominant hemisphere is also involved in music, drawing, poetry, singing, cursive writing, construction, body image, and gestures (Joseph, 1988).

It is becoming increasingly clear that the traumatized person loses access to language, that it is not that the words are present and then 'repressed', but rather that the traumatic experience has never been verbally processed. Instead, the traumatic experience is 'articulated' in an entirely different language – the language of the nonverbal, of the enacted. These languages may not readily translate between each other, with the result that we end up seeing the behavior – the ultimate action – without having any access to the reasoning upon which that action is based (Galín, 1974).

This may relate to what is perhaps the most interesting aspect of dissociation, what John Beahrs has termed 'co-consciousness', meaning that every individual is both a unity and a multiplicity at once (Beahrs, 1982). The memories, feelings, and thoughts associated with dissociated fragments do not disappear from the mind; they simply disappear from consciousness. At the level of conscious awareness, the trauma – or parts of the trauma – did not occur. And yet, at another level of reality, the person does know, does remember the experience. 'At the level of unconscious awareness, reality remains undistorted and the person remains undeceived ... All forms of dissociation-based reality distortion and self-deception are limited to the window of consciousness' (Schumaker, 1995). This again, is 'knowing and not knowing' that have been so well-described in Holocaust survivors (Laub and Auerhahn, 1993).

The trauma was too much to bear. It could not be categorized, ordered, or placed in a meaning scheme that is in the past and can therefore be relegated to the past as a memory. Instead, the traumatic experience will remain unmetabolized, unintegrated and still present, continuing an existence in the ever-present 'now' of the nondominant hemisphere reality, haunting the person as it reappears as nightmares, flashbacks and behavioral re-enactments. Until some other experience occurs which permits a reordering of reality and incorporation of the trauma into a new sense of meaning, this 'haunting' will continue and the traumatized person, now victimized by the working of their own mind, may develop all kinds of secondary behaviors as attempts to cope with this continuing problem. Addictions, compulsive behaviors, behavioral re-enactments, anxieties, phobias, depression, and a variety of physical symptoms can all be manifestations of these failed coping skills.

The victim of trauma can self-protect in the short-term from unbearable emotion by dissociating from parts of experience. But the incongruity does not go away. Instead, it begins haunting the person, fueled again by the 'cognitive imperative', the need to bring order to disrupted and incomplete cognitive-emotional schemas.

Mental health professionals see these as symptoms of post-traumatic stress disorder in which the dissociated memories emerge as nightmares, sensory and emotional flashbacks, and behavioral re-enactments. These intrusions may be the way the nondominant hemisphere ‘remembers’ or attempts to communicate with its other side. But integration between the two sides is prevented because the dominant, language-based and logical hemisphere cannot tolerate the strange and apparently chaotic ordering system that is more typical of nondominant hemispheric functioning. We experience this ‘stranger’ within as something dark, dangerous, mysterious – perhaps the other that Carl Jung called ‘the Shadow’ – something to fear, ignore, medicate, avoid, or run away from.

Without a cultural context, without some way of translating between the language of the right and that of the left, integration cannot occur. Instead, the psyche, like a broken phonograph player, keeps replaying the same fragments of a post-traumatic tune, unconnected to a melody line.

TRAUMATIC RE-ENACTMENT AND FAILED ENACTMENT

It is this problem with integration that propels ‘traumatic re-enactment’, the profound tendency to compulsively and behaviorally relive the traumatic experience outside of conscious awareness. History repeats itself but with every repetition, the price goes up. It was Freud who focused attention on the repetition compulsion: ‘He reproduces it not as a memory but as an action; he repeats it without, of course, knowing that he is repeating ... he cannot escape from this compulsion to repeat; and in the end we understand that this is his way of remembering’ (Van der Kolk and Ducey, 1989).

Robert Lifton, a psychiatrist who has made an intensive study of various traumatized and traumatizing populations, has talked about the ‘failed enactment’ that occurs at the time of a traumatic event, as ‘some beginning, abortive image forms toward enactment in a more positive way that is never possible to achieve ... a schema for enactment that is never completed’ (Lifton, 1988). This failed enactment is associated with profound feelings of helplessness, which is a fundamental characteristic of any traumatic experience.

If we understand that re-enactment behavior is a message, a signal, a ‘cry for help’ from another parallel consciousness, a consciousness that is nonverbal and yet intelligent, we can begin to understand symptoms and all kinds of human pathology in an entirely different way. A schema for enactment that is incomplete will continue to press for completion according to the cognitive imperative. A speechless consciousness, attempting communication with its social group, can only do so through the medium of other forms of communication, through behaviors that *tell the story* of the wounding experience. If the person cannot integrate the traumatic experience because the experience itself resists words and therefore cannot be ordered, then the person can do nothing except turn outside himself to his or her cultural group for help. But as we will see, there are monumental barriers to getting this help.

Traumatic experience shatters basic personal and cultural assumptions about the primary way we order reality. Suddenly there is no safety, the world no longer makes sense, other people cannot be trusted, the future is no longer predictable, and because of dissociation, the past is no longer known (Janoff-Bulman, 1992). After the trauma, one of

the most perplexing experiences for the individual victim is that the world goes on as before, even as their own world has been completely shattered. Other people outside of the 'trauma envelope' appear relatively oblivious to the traumatic event. For the victim, personal reality is no longer congruent with cultural reality. The individual spontaneously attempts to realign the two realities to produce re-attunement between the individual and the cultural, by behaving in ways that are obviously divergent from their previous behavior. Early on they may attempt to talk about their experience and to share their overwhelming emotional states. This need to talk, to confess, to release stored tension is powerful and important for continuing mental and physical health (Harber and Pennebaker, 1992).

But the culture actively inhibits their responses. Listeners will switch the topic away from the trauma and attempt to press their own perspective upon the victim. They often exaggerate the victim's personal responsibility or even avoid contact with the victim altogether. In mounting these social obstacles to meaning-making, the listeners protect themselves by avoiding having their own cognitive schemas disrupted and in doing so they avoid the hyperarousal that is frequently an accompaniment of emotional contagion (Coates et al., 1979; Harber and Pennebaker, 1992). The price for the individual victim, however, is a high one. They cannot make meaning out of the traumatic event without a cultural context and the consensual validation that accompanies it, yet the cognitive imperative demands a resolution of the conflict and a restabilization of the sense of personal reality. The only viable solution is further dissociation.

EMOTIONAL CONTAGION

It is of interest that a social species would erect such social obstacles to the integration of post-traumatic experience. To understand the necessity of such obstacles we have to look more at the issue of emotional contagion. We are born with at least nine different affects. This is the word given to denote the biologically based, innate foundations for all emotional experience. 'Affect makes us care about different things in different ways. The reason that emotion is so important to a thinking being is that affect controls or acts upon the way we use thought ... whenever we are said to be motivated it is because an affect has made us so ... Affect is the engine that drives us ... Not only does affect influence and often control the thinking made possible by the most advanced structures of the new brain ... but it is a form of thinking – the action thinking of the old brain' (Nathanson, 1992, 59). As alluded to above, emotional experience profoundly influences thought, alerting us to contradictions in what we know or perceive and keeping us focused on this discrepancy until we have resolved whatever conflict exists (Harber and Pennebaker, 1992).

Managing our emotions – modulating and containing them – is dependent on the interaction we have with others 'from cradle to grave', in the words of John Bowlby, the great attachment theorist. Other people play a vital role in 'training' the central nervous system how to respond and our relationships with other people have a great deal to do with the way in which our brain actually develops (Schoore, 1994). Because we are a social species, dependent for our survival on other people from the time we are born, evolution designed us to resonate with the emotions of others (Nathanson, 1992). Such resonance has high survival value. It is life-saving for a mother to have a special and specific reaction to the

cry of her baby and it is very useful for the entire tribe when one individual scout, spotting danger, is able to convey an immediate sense of that danger to his fellows by expressing his emotions through voice and gesture.

This resonance is conveyed in a number of ways. Every emotion evokes a different pattern of response in the nervous system affecting not just our internal organs but our facial and bodily expression as well. Every emotion also triggers a tendency to act in a certain way (Lazarus, 1991; Nathanson, 1992). And every emotion triggers a response in other people as well. Emotional contagion is defined as ‘the tendency to automatically mimic and synchronize facial expressions, vocalizations, postures, and movements with those of another person, and consequently, to converge emotionally’ (Hatfield et al., 1994). We are profoundly influenced by other people’s emotional states, from the time we are born. We respond to another person’s emotional state within one twentieth of a second and in that time our physiology is changed and our bodies become synchronized to the emotional state of the other. This happens outside of our conscious awareness and is beyond our ability to control (Hatfield, et al., 1994).

Emotional contagion is so powerful and so much an implicit part of our voice, muscular effort, posture, and facial expression, that we can begin to alter our identity, and therefore our sense of reality, in fundamental ways without even knowing we are doing so.

This ability to change ourselves under the influence of others has been recognized since ancient times. Plutarch said, ‘If you live with a cripple, you will learn to limp’ and Euripides wrote, ‘Where there are two, one cannot be wretched, and one not.’ Centuries later in *The Purloined Letter*, Edgar Allen Poe wrote, ‘When I wish to find out how wise, or how stupid, or how good, or how wicked is anyone, or what are his thoughts at the moment, I fashion the expression of my face, as accurately as possible, in accordance with the expression of his, and then wait to see what thoughts or sentiments arise in my mind or hearts, as if to match or correspond with the expression.’ And Stephen King, in his novel *Rose Madder*, has an enraged battering husband, who is tracking his wife, take on her identity as a strategy for finding her. ‘Never mind, he told himself. Never mind, just do your job. And right now your job is to walk like Rosie, talk like Rosie, think like Rosie’ (King, 1995, 110).

It should come as no surprise, given this vulnerability to experience the emotional states of others, that listening to victims of trauma could produce a noxious physiological and psychological state in the listener that people would quite naturally avoid. Members of their family and their extended social group are likely to take any possible measures to prevent victims from sharing their experience and therefore spreading the contagious emotion. This produces powerful negative consequences for the victims since the tendency to avoid disclosure of emotions is associated with increased risks for physical and mental illness, greater physiological work, and impaired information processing (Harber and Pennebaker, 1992).

Likewise, the benefits of emotional expression have been known since ancient times. The word, *catharsis*, derives from the Greek meaning purification, cleansing (Jackson, 1994). For Aristotle, the term expressed the effect produced by tragedy and certain kinds of music. Breuer and Freud (1957) observed, ‘Each individual hysterical symptom immediately and permanently disappeared when we had succeeded in bringing clearly to light the memory of the event by which it was provoked and in arousing its accompanying affect, and when the patient had described that event in the greatest possible detail and had put the affect

into words.' Janet said that the 'cathartic treatment' was another name for his 'mental disinfection by the dissociation of traumatic memories' ... in each case the traumatic memories were liquidated (Jackson, 1994). More recently, Pennebaker and colleagues have demonstrated the powerful health benefits of trauma confession (Pennebaker, 1993, 1997, 1999, 2004).

SURVIVAL VALUE?

From an evolutionary point of view, this sequence of events would not seem to have a great deal of survival value. Trauma produces dissociation, leaving us vulnerable to post-traumatic intrusive experiences that begin a cycle of continuing deterioration. Other members of our social group, who could theoretically promote healing and recovery, instead tend to avoid their own internal disruptive response by avoiding the victims so that 'victims may be trapped in a complicated dilemma, in which they can maximize their social acceptance only at the expense of their personal adjustment' (Coates et al., 1979). How then can we explain the survival value of such mechanisms? Why would we evolve a system that is life-threatening in the short term but produces such widely detrimental results to physical, emotional, and social health in the long term?

It is my contention that post-traumatic effects are the unfortunate consequence of emergency measures aimed at promoting survival and that there is no other innate mechanism residing solely within the individual that insures reintegration. The result is that the unfortunate survivors of trauma encounter their own 'black hole' phenomenon (Pitman and Orr, 1990) within which the light of awareness, of peace, and of wholeness is absorbed. On opposite sides of this gaping chasm are the individual and personal wholeness, the individual and the social group.

But if there is no innate mechanism in the individual then there must be other explanations for a system that appears so mystifyingly destructive. Three possibilities spring to mind: the effects of post-traumatic stress do, indeed have significant survival value; Nature made a boo-boo; or the healing mechanism resides not within the confines of biological evolution but social evolution. I will provide some evidence to support the latter hypothesis. I believe that it is in the evolved development of our mimetic response to others that we must look for some answers, and in our capacity to define cultural reality through ritual, religion, and all forms of art that we can delineate the key to individual and group healing. *Artistic performance is the bridge across the black hole of trauma, the evolved individual and group response to the tragic nature of human existence.*

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