The Structure of Traumatic Memories

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Abstract
For over 100 years, the nature of trauma and its effects on psychiatric disorders has been studied. Recently, because of advances in brain neuroimaging, we are able to verify and specify much of the architecture of the human brain, highlighting the importance of an understanding of memory and traumatic memory. The study of traumatic memory leads us to examine its possible etiology in a range of disorders including Dissociative Disorders, Mood Disorders, and Traumatic Disorders. We find that the architecture of our mammalian neurobiology both supports and predicts the symptomatology of Post Traumatic Stress Disorder (PTSD) and other disorders which have unintegrated traumatic memories as an underlying factor. Additionally, the limitations of talk therapy and the need for treatment modalities of integration indicate and support the overall approach of both Adler’s Individual Psychology and Shapiro’s Eye Movement Desensitization Reprocessing therapy.
The Structure of Traumatic Memory

"the … memory of the trauma … acts like a foreign body which long after its entry must be regarded as an agent that is still at work" (Janet, 1899 as cited in van der Kolk, B. A., 2000, p.239).

Memory

Memory is a sum of our experiences, integrated and translated into a cognitive belief system and narrative that guides our movements in life and our behavioral systems towards our goals. As Janet and others over the years have alluded, Traumatic Memory is a foreign body that is unintegrated. It is a loose cannon, able to disrupt and unbalance our behaviors if unprocessed and unintegrated.

Memory stores our understanding of experiences, putting them in context, forming a belief system, and guiding our actions and emotions in the present and the future. Memory, as most understand it, is the story of our lives. It is a declarative memory, that which we can put into a narrative. When we tell our story it is cognitive and verbal, organized and reasoned. This is the medium of traditional talk therapy. Therapeutic interventions are designed to highlight patterns and behaviors that seem maladaptive, emotionally dysregulated, or unreasonable.

Our experiences, and hence our memory and life story, begin at birth if not before. Our brain develops in phases over our growth, for as long as twenty five years for the neocortex. "Ornitz … has proposed four critical periods of major structural change in brain development: early childhood (15 months–4 years), late childhood (6–10 years), puberty, and mid-adolescence" (van der Kolk B. A., 2003, p. 294). Not only do our experiences shape and become our memory, they also shape and affect the developing neurobiological
systems that receive, process, evaluate and store our experiences. Events in our
development are brought into the brain and form neural pathways as they are experienced;
normal healthy experiences develop relatively normal and healthy neurobiology. There is a
range, of course, in our unique formulations of memory, life story and, as it turns out, our
unique neurobiology. Though much is in common in growing up in a world of humans,
much of our experience is uniquely individual.

Memory is usually thought of as occurring in three modes; these can be seen as
analogous to computer memory systems, which are based on the understandings of our
own working brain. The three types are: 1) Working Memory (Random Access Memory);
2) Declarative Memory (Retrieve Only Memory in our “hard drives”); and 3) Procedural
Memory (roughly, our Operating System).

Short Term Memory or Working Memory, is believed to be located in the cortical area. It is necessary for present day actions, useful and necessary for short-term actions,
but is left unstored. Long Term Memory or Declarative Memory, is stored verbally and
cognitively in our cortex, and it is what we usually mean when we say memory. It is the
repository of our cognitive belief system and our narrative story. Procedural Memory is a
set of actions, habits, or skills; it is an “operating system” that is relatively stable but also
regularly updated in a healthy human brain system. Procedural Memory or action systems
operate semi-automatically underneath these other memory systems, yet are normally in
touch with the cognitive components of our decisions. Updating is part of the concept of
“intelligence,” an important part of continuing human development. All these memory
evolve in the life of a child as experience is gathered and the brain is developing: neurons
connecting, pathways being established, and the brain structure growing.
In *normal* memory, the non-threatening experiences of everyday life are integrated into our Declarative Memory and cognitive awareness, becoming part of our narrative.

There are:

A variety of structures ... implicated in these integrative processes: (1) the parietal lobes are thought to integrate information between different cortical association areas, (2) the hippocampus is thought to create a cognitive map that allows for the categorization of experience and its connection with other autobiographical information, (3) the corpus callosum allows for the transfer of information by both hemispheres, integrating emotional and cognitive aspects of experience, (4) the cingulate gyrus is thought to function as both amplifier and filter, helping to integrate the emotional and cognitive components of the mind and (5) the frontal lobes are thought to function as a “supervisory system” for the integration of experience. (van der Kolk, Hopper, & Osterman, 2001, p. 105)

Trauma

“*Trauma is an event outside of normal human experience.*” (Brown L. S., 1995, p. 101)

In normal experience, sensory data enters our brain stem through the thalamus, travels through the amygdala which makes a preliminary emotional evaluation and, if not deemed threatening, the sensory information is sent to the hippocampus which puts the event into context in a cognitive map. All of this is then sent up to the neo-cortex for further integration, decision-making, and storage. An action decision is then determined (or not), which is sent back down the neural pathways to the appropriate motor systems; or it remains in the cortex for further processing, thinking, and memory integration. But if
the amygdala, known to “nonconsciously process frightening faces ... and ‘unseen fear’ ...
(Schore, 2002, p. 20) senses threat, it activates our built in survival system.

The locus of our survival systems is the amygdala, an older, evolutionary part of our
brain; it exists partially to provide us with an emergency short cut to survival. It *feels* the
experience, initially unmediated by the accumulated knowledge of the medial Pre Frontal
Cortex (mPFC). If there is a felt sense of threat the amygdala institutes a defensive fear
response, flooding the body with cortisol which puts the body into high alert: blood
pressure rises, muscles are energized, and we enter the fight/freeze/flight mode. This
direct and immediate action saves milliseconds and can very well save our life in the face of
threat or trauma.

As part of our evolution the brain has kept this shortcut as a defensive and
immediate response to life threatening experiences. In this primitive brain action the
sensory data does not get *oriented* by the hippocampus nor do they get evaluated and
decided upon by the mPFC or adult awareness; this would waste precious time and might
threaten our very existence. The instinct to survive takes precedence: hormones are
activated and our Procedural Memory goes into automatic, eliciting primitive action
systems of fight, freeze, or flight. There is “Increased activation of the amygdala in
response to traumatic scripts ... the amygdala transforms sensory stimuli into emotional
and hormonal signals, thereby initiating a down controlling emotional response” (van der

Declarative Memory and the neocortex are bypassed by a literal shortcut to
defensive action, mediated by the amygdala but unmediated by either the hippocampus for
context or the neocortex for cognition: our adult awareness is not consulted.
One of the most robust findings of the neuroimaging studies of traumatized people is that, under stress, the higher brain areas involved in “executive functioning”: planning for the future, anticipating the consequences of one’s actions, and inhibiting inappropriate responses, become less active. Specifically, neuroimaging studies of people with PTSD have found decreased activation of the medial prefrontal cortex (mPFC). (van der Kolk B., 2006, p. 287).

This primitive system maximizes our survival but not our healthy growth and movement if it is inappropriately stuck in the on position. “LeDoux concludes that without orbital prefrontal feedback regarding the level of threat, the organism remains in an amygdala-driven defensive” (Schore, 2002, p. 12). This emergency defense gives us valuable milliseconds of immediate response time, but the Traumatic Event has, at this point, not gotten to the Hippocampus or the mPFC. What if this Traumatic Event doesn’t enter our Declarative Memory; is it remembered at all?

**Traumatic memory.** “The issue of memory is central to all discussions of trauma” (van der Kolk B. A., 2000, p. 245).

Traumatic memory is unique in its central importance to the etiology of many mental disorders, most prominently Posttraumatic Stress Disorder (PTSD). PTSD, included in the Diagnostic and Statistical Manual since 1980, occurs in individuals who have experienced a perceived threat to their physical, sexual, or psychological integrity; or witnessed this threat to someone else. These individuals have the trio of symptoms of intrusive memories, numbing, and hypervigilance.

What we now call PTSD existed before 1980 under various names, amongst them
shell shock, battle fatigue, railroad spine, hysteria, rape trauma syndrome, and the thousand-yard stare. Perhaps the most timeless, succinct, and accurate name is speechless terror.

This describes both the victim’s immediate emotional response to the trauma, the flood of feelings without words to describe the experience, and the neurobiology of the body’s responses.

Our research indicates that during activation of the traumatic memory, the brain is “having” its experience. The person may feel, see, or hear the sensory elements of the traumatic experience, but he or she may be physiologically prevented from translating this experience into communicable language. When they are having their traumatic recall, victims may suffer from speechless terror in which they may be literally “out of touch with their feelings.” (van der Kolk, Hopper, & Osterman, 2001, p. 109).

Studies of people with chronic PTSD show decreased hippocampus volumes of some twenty percent; these subjects display “heightened activity in the right hemisphere, specifically in the areas that are most involved in emotional arousal: the amygdala, insula, and the medial temporal lobe” (van der Kolk, Hopper, & Osterman, 2001, p. 106).

Furthermore:

... during exposure to their traumatic scripts an area in the occipital lobe was activated, which suggested that our subjects registered an image of their trauma, and there was a significant decrease in activation of the left inferior frontal area ... Broca’s areas. Broca’s area is thought to be responsible for translating personal experiences into communicable language, a function
that clearly is impaired in people exposed to memories of their trauma (van der Kolk B. A., 2000, p. 251).

Sensory information, which was shunted away from the hippocampus delay of contextualization, remains in the system stored as powerful raw data. The effect of cortisol both emphasizes its emotional importance and locks it in place, unprocessed. Rather than disappearing, it remains as a fixed memory and a coupled survival action system, inactive until triggered.

Because it exists as sensory data we can look to the right hemisphere, where such data is believed to be stored, although stored may not be exactly the correct word; imprint is a better term. Once again, the concept of memory needs to be expanded and explicated. What is clear is that traumatic memory is largely non-verbal, unprocessed, and unintegrated.

So where is this memory? Brewin’s Dual Representation Theory of PTSD memories posits: “separate memory systems subserving vivid re-experiencing (non-hippocampally dependent) versus declarative autobiographical memories of trauma (hippocampally dependent)” (Peres & McFarlane, 2008, p. 478). This non-hippocampally dependent memory system is where the memory of the Traumatic Event resides, without context or a clear pathway to the neo-cortex. It remains an unintegrated sensory memory, not cognitive, declarative, or verbal. Lost but not forgotten, it reappears particularly as the PTSD symptoms delineated in Criteria B: re-experiencing.

Within the theory that Brewin and colleagues formulated is “the proposal that two types of memory representations are the “minimum cognitive architecture” within which the complex phenomena of PTSD can be understood: Verbally Accessible Memories
(VAMs), and Situationally Accessible Memories (SAMs)” (van der Kolk B. A., 2000, p. 247).

When a sensory element that was contained in the original traumatic situation enters the amygdala, it is read as a threat. If this triggers the release of cortisol, then the present situation links to the sensory survival pathways and accesses the emotionally charged SAM, or Traumatic Memory. This fixed, unprocessed, and emotionally charged SAM now floods into the present, without HC context or autobiographical relevance. These are the intrusive memories of Criteria B. “Distressing memories are the hallmark of PTSD” (Zucker, Spinazzola, Blaustein, & van der Kolk, 2006, p. 54).

This important point bears repeating, during a traumatic event the survival system and associated defensive structures predominate, while the structures associated with integration are prevented from operating by the blocking effect of cortisol, a hormone and brain design feature for the protection of the organism. “The imprint of trauma doesn’t 'sit' in the verbal, understanding, part of the brain, but in much deeper regions” (Wylie, 2004). This imprint remains within our system with different characteristics than Declarative Memory, characteristics that both cause and predict the symptomatology we see in our traumatized clients. Piaget proposed that “when memories cannot be integrated on a semantic/linguistic level, they tend to be organized more primitively as visual images or somatic sensations” (van der Kolk, Burbridge, & Suzuki, 1997, p. 519). Stored visually or somatically, these unintegrated memories can be triggered by images or sensations.

From the point of view of neurobiology, “the core issue that makes memories traumatic is the failure of the Central Nervous System (CNS) to synthesize the sensations related to the traumatic memory into an integrated semantic memory” (van der Kolk, Burbridge, & Suzuki, 1997, p. 104). From a cognitive perspective, “Failure to process
information on a symbolic level, a prerequisite for proper categorization and integration with other experiences, seems to be at the very core of the pathology of PTSD” (Levin, Lazrove, & van der Kolk, 1999, p. 161).

One may ask: do all experiences need to be synthesized and integrated? Perhaps not, but the important, emotionally charged events do need to be integrated. As will be seen, the only way to completely defuse these Traumatic Events is to integrate them on a symbolic and cognitive level.

Traumatized individuals are vulnerable to react to sensory information with subcortically initiated responses that are irrelevant, and often harmful, in the present. Reminders of traumatic experiences activate brain regions that support intense emotions, and decrease activation in the central nervous system (CNS) regions. (van der Kolk B., 2006, p. 277)

**The effects of cortisol.** Cortisol is the primary agent of change, a powerful hormone that is the accelerator in the body, activating the sympathetic nervous system to prepare us for action. Cortisol increases our blood sugar levels, represses the immune system, and aids in metabolism. Its function is to respond to and eliminate stress, returning us to the balanced state of homeostasis.

When we are exposed to a life-threatening trauma our brain sends our body into survival mode with a flood of cortisol. We become hyperaroused and are on high alert, ready for fight or flight; all defensive measures are at the ready. Appropriate for an actual on-going trauma, cortisol’s effects persist because of the nature of our sensitive neurobiology as well as the unique nature of traumatic memory. Chronically high levels of cortisol can cause neurobiological changes, especially in the early years of brain
development. In the thalamus, the conduit from the senses to the amygdala, there occurs:

... increased sensitivity of the thalamus to incoming stimuli. When the brain is exposed consistently to high levels of cortisol, the nervous system becomes sensitized to stimuli of a psychologically threatening nature. This process has been referred to as kindling, whereby, in chronic trauma, a stronger psychological and physiological response is elicited with triggers of diminishing strength ... This increasing degree of arousal can move a person through the response spectrum of vigilance, alarm, fear, and terror more rapidly. Individuals who experience trauma often have increased cortisol reactivity ... (Weiss, 2007, p. 117)

The range of defensive actions ranges from fight, freeze, or flight to flag or faint, because in low to normal amounts the hormone cortisol activates the sympathetic system and in high doses it activates the parasympathetic system. As Cahill noted:

The effect of emotion [on memory] would seem to be analogous to that of certain drugs, where a certain dose excites, while a still greater dose depresses.” Stratton’s observations clearly anticipate the now well-established “inverted-U.” (1997, p. 239)

Trauma triggers our survival mechanism, which accelerates us to a range of defensive responses, all of which have evolutionary precedents. It is easy to recognize anger as an appropriate response to threat, fueled by adrenalin; however surrender is also a survival response. How can surrender or fainting save us?

An evolutionary perspective suggests that dissociation, albeit hazarding the consequences of physical injury, is an adaptive, and when strike is close, final
remaining survival response to specific types of life-threats that include nearness of a superior perpetrator or other situations dominated by helplessness. Dissociation enables survival. (Schauer & Elbert, 2010, p. 110)

When our ancestors attacked another tribe they would kill off those who resisted. The women who fainted were co-opted into the tribe and survived, as did their bloodlines. Not able to resist an overwhelming force, and not being able to escape, they fainted. This was an evolutionary solution for the survival of their progeny, and hence fainting was preserved as a survival response in their DNA.

Neurobiologically speaking, cortisol produces either activation or numbing; both are survival strategies. The symptoms of PTSD can be traced back to these same survival strategies, Criteria D to the activation of hyperarousal, and Criteria C to hypoarousal and numbing. This last defensive posture contains the range of behaviors we know as dissociation. Criteria B, experiencing intrusive memories, has already been related to the survival shortcut engendered by cortisol. “Patients with PTSD seem to remain embedded in their trauma as a contemporary experience and often become fixated on the trauma” (van der Kolk, Burbridge, & Suzuki, 1997, p. 100). It is impossible to look at Traumatic Memory without considering Dissociation. “The lack of coupling of the amygdala and Anterior Cingulate Cortex (ACC) in the PTSD subjects may account for the disruption of spatiotemporal activity observed in this disorder” (Peres & McFarlane, 2008, p. 480).

The symptoms of PTSD are defensive behaviors, appropriate at the time of the event but disruptive in the continuing life of the traumatized individual. It is because of the unintegrated nature of traumatic memories that these past defenses are still in use. The organism continues to feel threatened and is in a continual state of defense.
Since at least 1889 it has been noted that traumatized individuals are prone to respond to reminders of the past by automatically engaging in physical actions that must have been appropriate at the time of the trauma, but that are no longer relevant. (van der Kolk B., 2006, p. 280)

The survival defenses that the hormone cortisol causes become the symptoms and procedural action systems that persist. Just as the chronic defensive state of anger and hyperarousal can become a defensive trait referred to as *kindling*, so can a chronic state of surrender become a defensive trait of dissociation.

**Post Traumatic Stress Disorder (PTSD)**

*People who suffer from PTSD seem to lose their way in the world* (van der Kolk B., 2006, p. 280).

This is an apt description of many, if not all, of our clients. As Adlerians we define health as the client’s movement towards their individual goals. Most clients appear to have lost their footing on their path, taken a wrong turn, an ill-advised shortcut, or simply stopped in place. In Adlerian terms, they are unable to fulfill the Tasks of Life.

Unable to integrate traumatic memories, they seem to lose their capacity to assimilate new experiences as well. It is ... as if their personality has definitely stopped at a certain point ... unless the dissociative elements of the trauma were integrated into personal consciousness, the patient was likely to experience a slow decline in personal and occupational functioning. (Schore, 2002, p. 12)

Though one wouldn’t say all of our clients have PTSD, traumatic events are of more importance in the etiology of mental disorders than commonly thought. More than just the
disorders of trauma, many other mental health issues have at their core a traumatic experience. Many people believe that the underlying cause of addiction is the desire to block one’s feelings, and these feelings are arising from a past trauma.

How common is trauma in the United States? A study of 8,098 non-institutionalized persons found that sixty one percent of men and fifty one percent of women had experienced at least one traumatic event in their lives. The researchers estimated lifetime prevalence for PTSD to be ten percent for women and five percent for men (Keltner & Dowben, 2007). And if there is trauma, there is traumatic memory:

Traumatic memories have also been observed in many people who manifest dysfunctional behavior patterns, but do not meet diagnostic criteria for psychiatric disorders. For example, the prevalence of partial PTSD in the general population is estimated to be approximately 30% (Peres & McFarlane, 2008, p. 479)

What is partial PTSD? Some, but not all of the criteria in the DSM-IV-T (Peres & McFarlane, 2008). Criteria C describes various avoidance and numbing responses that resemble both depression and certainly disorders of dissociation; Criteria D refers to symptoms of hypervigilance, coincident with many disorders of anxiety, and the items in Criteria B, seen in isolation, may appear to be psychotic delusions or phobic disorders. Trauma is likely a factor in mood disorders, dissociation, somatic disorders, and more in our DSM diagnostic classification system. This suggests that many diagnoses of Major Depressive Disorder, for example, could be co-morbid and likely caused by an underlying trauma.

The National Comorbidity Survey found that 84% of all individuals diagnosed
with PTSD met criteria for at least one additional lifetime psychiatric disorder (Kessler et al., 1995) and were at least eight times more likely to have three or more additional disorders than were individuals who did not meet criteria for PTSD. The disorders most likely to co-occur with PTSD were other anxiety disorders, major depression, somatization disorder, and a variety of Axis II disorders. (Korn, 2009, p. 266)

How common is PTSD in our clinical population and how often is it misdiagnosed?

Prevalence of Trauma-related disorders in general psychiatry:
Approximately 50%, major underassessment of Trauma; e.g., only 20% of cases of the most simple trauma-related disorder (PTSD) is diagnosed.

Prevalence of Dissociative Disorder: 10%. Prevalence of Dissociative Identity Disorder is approximately 1%, the same as schizophrenia. Prevalence of traumatic reports from patients with psychosis: very high. (Nijenhuis E. R., 2007)

Dissociative Identity Disorder (DID), seen as closely related to PTSD and very similar to Complex PTSD or Disorders of Extreme Stress (DES) NOS. *DID is thought to be misdiagnosed by six clinicians before the seventh arrives at the proper diagnosis.* The underlying causes are often not even searched for due to the current emphasis on brief therapy and immediate symptom relief. One can patch a tire a dozen times, but to drive on it one must put in less air, reduce one’s speed and load limit, and be very careful not to hit any bumps in the road.

**History of PTSD.** "Hysterics suffer mainly from reminiscences (Janet as cited in Zucker, Spinazzola, Blaustein, & van der Kolk, 2006, p. 54)."
The modern history of PTSD dates from the studies of Janet, Freud, and Breuer at the turn of the 19th century. Janet states:

... when people experience intense emotions, memories cannot be transformed into a neutral narrative: a person is "unable to make the recital which we call narrative memory, and yet he remains confronted by (the) difficult situation" (Janet, 1919/1925, p. 660). This results in "a phobia of memory" (p. 661) that prevents the integration ("synthesis") of traumatic events and splits off the traumatic memories from ordinary consciousness. Janet claimed that the memory traces of the trauma linger as what he called "unconscious fixed ideas" that cannot be "liquidated" as long as they have not been translated into a personal narrative. (van der Kolk & Fisler, 1995, p. 511)

This perspective, originally embraced by Freud and others, is surprisingly accurate and largely supported by current neurobiological research and theories. But Janet and his writings fell out of favor when Freud introduced his psychoanalytic theories, denying the existence of actual childhood sexual abuse in favor of the theory of unconscious drives.

Nonetheless we can see that there is a long history of the study of psychic trauma, a term originally coined by Freud. Thanks to the action of Vietnam veterans and the feminist movement of the 1970's, what was once called Post-Vietnam Syndrome and Rape Trauma Syndrome became united in the term PTSD in 1978. Classified as an anxiety disorder due to the cluster of positive symptoms displayed by trauma survivors, it is now seen as:

... in large part a disorder of memory, particularly of conscious memory.

Perhaps the most characteristic feature of PTSD is “intrusive” memories,
exceptionally strong, conscious memories of traumatic events, so strong that they are easily provoked by stimuli associated with the traumatic event or simply intrude on the consciousness of the patient unbidden. (Cahill, 1997, p. 242)

This memory, adrift from the contextualization of the hippocampus and floating in time and space, is what we mean by traumatic memory. And “it is in the very nature of traumatic memory to be dissociated and to be initially stored as sensory fragments that have few or no linguistic components” (van der Kolk, Hopper, & Osterman, 2001, p. 104).

Although traumatic intrusive memories are PTSD’s most characteristic feature, we must also consider the two main defensive paths trauma victims take as predicted by neurobiology and the effects of cortisol: hypervigilance or dissociation.

**PTSD: Hysteria and Dissociation.** Dissociation was studied extensively by Janet over 100 years ago, and much of what he wrote is still valid today: “double consciousness is present ... in every Hysteria and ... a tendency to dissociation ... memory of the trauma ... acts like a foreign body which long after its entry must be regarded as an agent that is still at work” (van der Kolk B. A., 2000, p. 239).

Other writers of the time also studied how dissociation plays a role in posttraumatic hysteria. In 1893, Freud and Breuer wrote of “psychic traumas ... the splitting of consciousness ... double consciousness ... the emergence of abnormal states of conscious, the basic phenomenon of this neurosis ... the recurrence of a psychical state which the patient has experienced earlier” and the notion that “dissociation serves as a defense against anxiety” (Steiner, Carrion, Plattner, & Koopman, 2003, p. 231). Adler, certainly aware of Janet’s work:
... alluded to the term “dissociation” as synonymous with “the apparent double-life of the neurotic” [and] the creation of dissociative fragments allows the client to maintain certain misbeliefs regarding his or her inadequacy and inferiority while establishing new “identities” with different coping and problem solving skills ... this splitting of self leads to a hesitant and ambivalent attitude toward life. (Allers & Snow, 1999, p. 164)

Dissociation, delineated in Criteria C, is a significant response to trauma and a significant component of what we call PTSD. There is a separate set of Dissociative Disorders, primarily distinguished by symptoms of memory loss and personality fragmentation. DID, the most severe disorder, is considered to be associated with a history of severe, chronic, childhood abuse of a physical or sexual nature. In fact, one cannot consider PTSD and traumatic memory without considering dissociation; and one cannot consider Complex PTSD, DID, or DESNOS without considering childhood trauma.

Dissociation at the time of trauma may be immediately protective but is a significant predictor of PTSD (Van der Kolk, 1996) and childhood dissociation may alter the ability in later years to apply normal problem-solving strategies to an intolerable situation. (Corrigan, 2002, p. 10)

Furthermore, evidence of dissociation during Acute Stress Disorder, the diagnosis given to trauma survivors in the first month post trauma, is a strong predictor for PTSD as well.

How related are the disorders of trauma and the dissociative disorders? They are both preceded by traumatic events, they share criteria with issues of memory and fragmentation, and they may be considered to exist on a continuum. “Therefore, our results support the idea that DID and PTSD are related disorders because both involve
psychobiological structures associated with detachment (Neutral Identity State) and re-experiencing traumatic memories (Traumatic Identity State)” (Reinders, et al., 2006, p. 738).

The literature suggests that a diagnosis of PTSD is appropriate for a single large traumatic event, referred to as a big T; for chronic trauma, such as long lasting childhood abuse, a diagnosis of Complex PTSD is more correct. As DID is virtually always preceded by a history of childhood abuse, one can begin to see the etiology of these disorders converging, particularly in the traumas of childhood development. Furthermore, Complex PTSD, which is a series of small t’s with one or more large T’s, is also compared to Dissociative Disorder NOS, as well as DESNOS.

DESNOS is conceptualized as memories split off, a disorder of self-regulation (Luxenberg et al., 2001). Specifically, DESNOS is increasingly understood by leading experts in the field to involve a chronic problem of state-dependent dysregulation that occurs in response to thematic cues that trigger a posttraumatic stress reaction. (Zucker, Spinazzola, Blaustein, & van der Kolk, 2006, p. 27)

As the effects of cortisol are two-fold, hyperactivation or dissociation, and considering that one of the primary symptoms of childhood disorders is dysregulation, it is not surprising that childhood development and attachment issues are at the core of one’s susceptibility to PTSD.

It has been said that the most significant consequence of the stressor of early relational trauma is the lack of capacity for emotional self-regulation ... expressed in the loss of the ability to regulate the intensity and duration of
affects ... Affect dysregulation is now seen to be a fundamental mechanism of all psychiatric disorders. (Schore, 2002, p. 11)

**Trauma and Childhood Development**

“... children are not resilient, children are malleable” (Perry, Pollard, Blakley, Baker, & Vigilante, 1995, p. 285).

Why are some people susceptible to developing PTSD and some not? All indications are that it primarily due to experiential factors during the individual’s childhood, specifically chronic physical or sexual abuse. Children are dependent on their caregivers; children’s primary task is to survive, and to ensure this they utilize various behaviors. Besides being *cute as the dickens*, they rely on their parents to be *parental*, reliable and secure providers. If children grow up in an unsafe environment, their defensive survival systems will be constantly activated. Clearly, the sensory data incoming to the developing brain cannot be processed by a neocortex that has yet to develop, or contextualized by a still growing hippocampus. The primitive survival functions of the brain, however, are in place: the thalamus and the amygdala.

Because the amygdala starts functioning almost immediately after birth, children rapidly are able to experience fear and assess danger. Because the hippocampus, which is necessary to put danger in a spatial context, matures only gradually over the first 5 years of life, however, children only slowly acquire the capacity to identify and organize the nature of threat. (van der Kolk B. A., 2003, p. 294).

If sensing trauma, fearful faces, or loud voices, the amygdala floods the developing sympathetic nervous system with cortisol. “The infant’s psychobiological response to
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trauma is comprised of two separate response patterns, hyperarousal and dissociation” (Schore, 2002, p. 15). These two defensive approaches, if chronically present, can wire the brain in the same manner that chronic adult trauma can. “The traumatized child experiences overactivation of important neural systems during sensitive periods of development” (Perry, Pollard, Blakley, Baker, & Vigilante, 1995, p. 277). If they continually experience trauma in their family, these survival states are preserved as neurobiological states.

Although there may very well be inborn temperaments, it is more than likely that early developmental experiences dramatically and structurally affect the growing neurobiology of the child as well; after all, children are learning machines engineered for survival. And as we have seen, when one is threatened cortisol floods the body and triggers survival action systems and behaviors. Chronic trauma turns a defensive state into a defensive trait.

When a child is hyperactive we often try to calm them down. In fact, a big part of our job as caregivers is to provide and eventually teach emotional regulation skills to the child. Their behavior is, initially, a matter of survival. They are hungry, upset, wet, or afraid; they are dependent on their caregivers, and they are signaling us. When the fearful situation is resolved, they calm down and achieve homeostatic balance. If they don’t become safe, if they are chronically abused or neglected, their system is being continually flooded with cortisol; it becomes kindled to respond immediately to distress.

Acute stress produces short-term and reversible deficits, while repeated, prolonged, chronic stress is associated with long-term patterns of autonomic reactivity, expressed in ‘neuronal structural changes, involving atrophy that
might lead to permanent damage, including neuronal loss’ ... Consonant with this principle, in earlier writings I have suggested that early relational trauma has a significant negative impact on the experience dependent maturation of the right brain, which is in a critical period of growth during the same temporal intervals as dyadic attachment experiences. (Schore, 2002, p. 11)

Attachment. Learning from experience is only possible when children are in a physiologic state that allows them to consider new possibilities” (van der Kolk B. A., 2003, p. 310).

The primary protective factor in childhood is secure attachment; Attachment style D is highly correlated with DID. “Disorganised-disoriented insecure attachment, a pattern common in infants abused in the first 2 years of life, is psychologically manifest as an inability to generate a coherent strategy for coping with relational stress” (Schore, 2002, p. 11). Interpersonal trauma is the most damaging type of trauma. Furthermore:

The importance of the anterior cingulate cortex in mother–infant interactions and other emotional attachments has already been alluded to, so Barach’s (1991) equation of Bowlby’s detachment with dissociation would immediately suggest a role for the anterior cingulate cortex. (Corrigan, 2002, p. 12)

When children use dissociation as a defense it is indeed a coping tool, but it is not resilient to forget trauma, it is an adaption for survival. “Dissociative amnesia is even more common in childhood victims of interpersonal violence than in combat soldiers and accident victims” (van der Kolk, Hopper, & Osterman, 2001, p. 101).
There is a range of temperaments both practical and adaptive in children. We know that children use dissociation in developmentally appropriate ways: fantasy play, identity development, integration of authority figures, and so on. But children also use dissociation defensively, moving from fight and flight to flag and faint; who has not seen a child worn out from stimuli, collapse and shut down? In the face of overwhelming experience, surrender or collapse is the appropriate survival defense. For children, many adult situations are too much, and it is part of the caregiver’s job to keep the child safe from these feelings and situations and to help them regulate emotionally. Imagine if the caregiver is the one exhibiting the overwhelming force:

... the infant, instead of finding a haven of safety in the relationship, is alarmed by the parent. They note that because the infant inevitably seeks the parent when alarmed, any parental behaviour that directly alarms an infant should place it in an irresolvable paradox in which it can neither approach, shift its attention, or flee. (Schore, 2002, p. 18)

Two neurobiological paths. Neurobiology predicts other variations in temperament and symptomatology, the opposite pole of the spectrum being hyperarousal. This can be expressed as hypervigilance or, as with many children, anger and behavioral disturbances. It has been theorized that males with BPD are underdiagnosed and may be the majority of individuals diagnosed with Antisocial Personality Disorder; the primary emotion these men present with is anger. The right hemisphere, the hemisphere of emotions and sensory information, develops first in children; male children lag in brain development and hence are more often stuck in hyperactive behaviors.
These factors indicate that by nature of their CNS and ANS immaturity males may be more susceptible to relational abuse, and that the dysregulation of early abused males is psychobiologically biased more towards hyperarousal, and females more towards dissociation. (Schore, 2002, p. 19)

Furthermore, investigators note the lack of integration between the two hemispheres of the brain, often coincident with deficiencies in the corpus callosum that links the two. They found:

... the middle portions of the corpus callosum were significantly smaller in boys with histories of severe abuse or neglect than in the control groups. In boys, neglect exerted a far greater effect than any other type of maltreatment; physical and sexual abuse exerted relatively small effects. In girls, however, sexual abuse was a more powerful factor and was associated with a major reduction in size of the middle portions of the corpus callosum. (van der Kolk B. A., 2003, p. 308)

One would expect that increasing communication between the two hemispheres of the brain would aid in self-regulation. Indeed the medication Lamictal is a mood stabilizer and anti-psychotic, as well as an anti-epileptic drug, which works through its effects on the corpus callosum and thus may aid in the treatment of emotional dysregulation.

Childhood development is, of course, hugely important to psychodynamic therapy. Children retain an imprint of what happens to them, but they lack the words and the brain development to process events into the context of a coherent narrative. In fact, the normal memories of early childhood sound eerily like traumatic memories: they are sensory, unintegrated, and lack a complete and coherent narrative. These are the same early event
memories that Adlerians make use of as Early Recollection's; these reveal the client's lifestyle, formed largely in the past and still in use in the present.

Early Recollectionss are rarely big T traumatic events; we are searching for cognitive beliefs, not trauma. The clients are directed to come up with early memories, not early traumas. The nature of self-protection keeps these recollections vague and their emotional charge moderate. The cognitive schema is laid out in the vignettes shared with the Adlerian therapist, who often asks for the most vivid part of the memory. What makes a memory vivid is the amount of emotion attached to it, which is emphasized by the cortisol released at the time. One of the precepts of ER's is that the vignettes presented have continuing emotional significance, even if invented rather than actual remembrances. Emotions are important not just for survival but also for learning what is significant; so it is with cortisol itself.

It is curious that the mechanism of memory for emotional significance is similar to that of survival. As past Early Recollections are used brilliantly to illuminate present beliefs, with a slight shift in perspective one can see the beliefs in the present as learned traits developed through past experience and preserved, or imprinted, in the individual's unique neurobiology. That is, rather than the projection of the present onto the past, one could see a feedback loop of past traits, developed through the experiences of chronic stress, forming an apperceptive bias for experiences during the maturation of the client as their cognitive schema was written.

It can be seen that the effects of chronic childhood abuse are widespread, and significantly predict emotional dysregulation, dissociation, and the development of PTSD. However, “Symptoms of PTSD in chronically traumatized children are usually not
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prominent and tend to be obscured by their other cognitive, affective, social, and physical
Association, 2010) is expected to include the diagnoses of Posttraumatic Stress Disorder in
Preschool Children, and Temper Dysregulation Disorder with Dysphoria, which address
these childhood disorders of trauma.

Dissociation

“An identity to function without access to the trauma-related memories” (Allers &

Although Janet studied dissociation extensively in his work of 100 years ago on
hysteria, he believed that it was due to a mental deficit of the patient and not, as Adler,
Freud, and others have seen it, as an extreme defensive response to the anxiety of an
unthinkable trauma. Dissociation is always a component of Complex PTSD, preceded by
chronic childhood trauma. It is delineated as a part of simple PTSD in Criteria D, a major
component of Acute Stress Disorder, and is a key predictor for the development of PTSD.
In addition,

Several diagnoses appear in the DSM-IV as dissociative disorders ... including
dissociative (psychogenic) amnesia, dissociative (psychogenic) fugue,
depersonalization disorder, dissociative identity disorder (multiple
personality disorder), and dissociative disorder not otherwise specified. It is
widely established that interpersonal childhood trauma reports correlate
with and most likely antedate the development of dissociative disorders.
(Steiner, Carrion, Plattner, & Koopman, 2003, p. 238)

Just as dissociation always involves trauma, disorders of trauma usually include
some measure of dissociation, and thus they have in common the uniqueness of traumatic memory; that is, non-integrated sensory memory charged with the hormone cortisol.

Dissociation is seen on a continuum from everyday dissociation, to traumatic dissociation, to severe dissociation. Dissociation is defined as "the segregation of any group of mental processes from the rest of the psychic apparatus" (Steiner, Carrion, Plattner, & Koopman, 2003, p. 231). Common dissociation is seen as a form of self-hypnosis, such as *highway hypnosis* or daydreaming; traumatic dissociation is a response to trauma, involving numbing, flattened emotions, and temporary de-realization. This may occur during a car accident, for instance, as time slows down and we space out. Severe dissociation is a chronic defensive measure of the personality that involves episodes of both depersonalization and derealization, and whose function is to preserve the individual through the non-integration of traumatic memories and overwhelming emotions. In extreme cases, the memory and action system is split off into another identity. As van der Kolk puts it:

the word dissociation is currently used to describe four distinct, but interrelated phenomena: (1) the sensory and emotional fragmentation of experience ... (2) depersonalization and derealization at the moment of the trauma (peritraumatic dissociation) ... 3) ongoing depersonalization and "spacing out" in everyday life ... and (4) containing the traumatic memories within distinct ego states...” (1995, p. 510)

Traumatic dissociation occurs when one is exposed to overwhelming force and the only option for survival is to freeze, surrender, or collapse. As cortisol floods one’s system the parasympathetic nervous system takes over, the body shuts down, and one is protected
through submission. Much of the brain is shut off during this response as well, leading to feelings of depersonalization and derealization. If one survives the traumatic event, the body and brain will normally be able to re-balance themselves depending on the severity of the trauma, the available support system, and the individual neurobiology of the individual. This occurs during the transitional period of time we refer to as Acute Stress Disorder (ASD), ranging from 2 days to 4 weeks.

If there was chronic abuse in one's childhood, the limbic system is likely primed to become severely dissociated: dissociation may already be established as a trait as well. To process and integrate trauma one must be able to experience emotions as well as process them; if the survivor can’t access the emotions because of dissociative tendencies, no processing or integration can take place and the defensive state of severe dissociation becomes chronic. The symptom of dissociation during the window of ASD is a high predictor for the development of PTSD. This dissociation, initially an immediate defense, becomes a chronic defense against the distressing traumatic memories of the event.

Those victims that have experienced chronic childhood abuse, particularly sexual abuse, have developed the traits of dissociation to protect the integrity of their personality. “If early trauma is experienced as ‘psychic catastrophe’ ... dissociation represents ‘detachment from an unbearable situation’ ... ‘the escape when there is no escape’ ... and ‘a last resort defensive strategy’....” (Schore, 2002, p. 16). The pathways of Procedural Memory protectively lead these survivors to dissociate when stressed. Dissociation is sometimes seen as a creative response to overwhelming trauma, especially abuse and neglect in early childhood. However it puts severe limitations on the richness of the client’s emotional and sensory life.
Many traumatized children and adults, confronted with chronically overwhelming emotions, lose their capacity to use emotions as guides for effective action. They often do not recognize what they are feeling and fail to mount an appropriate response. This phenomenon is called “alexithymia,” an inability to identify the meaning of physical sensations and muscle activation. Failure to recognize what is going on causes them to be out of touch with their needs, and, as a consequence, they are unable to take care of them. (van der Kolk B., 2006, p. 281)

Dissociation, especially Dissociative Identity Disorder (DID), was once thought to not exist or to be exceedingly rare, but recent estimates are that “the prevalence of pathological dissociation in the general population of North America was estimated to range between 2 and 3.3%; ... 5.4-12.7% for psychiatric inpatients; ... and 4.8 to 48.6% for Eating Disorders” (Spitzer, Barnow, Freyberger, & Grabe, 2006, p. 83). As stated before, to obtain an accurate diagnosis of DID, one must go through an average of seven misdiagnoses; it is well hidden, and often other symptoms predominate.

It is true that some twenty years after PTSD was labeled as a disorder, some therapists were complicit in creating false childhood memories in a few cases that went to court. The backlash to these creations, called False Memory Syndrome, banished the term Multiple Personality Disorder from the lexicon. Yet DID (as it is now known) certainly exists, and various levels of dissociation occur commonly with our clientele, though usually they are seen as passive traumatic memory loss or dissociative amnesia rather than actual dissociative identities. “... 78% of individuals who were questioned about traumatic memories from both childhood and adult traumas, initially reported not having any
memory of the event and were unable to give an account of what happened” (Peres & McFarlane, 2008, p. 483).

In Complex PTSD: “One or more dissociative parts of the personality avoid traumatic memories and perform functions in daily life, while one or more other parts remain fixated in traumatic experiences and defensive actions” (van der Hart, Bolt, & van der Kolk, 2005, p. 413). DID is essentially the same, except the reason for the symptomatic behavior, memory avoidance, is de-emphasized; rather, the symptomatology of distinct identity states takes center stage. “To that end, this protective identity state seems to apply a censor mechanism to avoid access to or subsequent processing of at least a part of the painful memories. A traumatic identity state ... has access and responses to the traumatic memories” (Reinders et al., 2006, p. 730). Dissociation is notoriously difficult to deal with because it is an extreme defense against the memory of trauma. Our patients deny the memory and deny the cover-up as well.

The theory of structural dissociation of the personality. Thanks to Van der Hart and the Theory of Structural Dissociation of the Personality (TSDP), there is an approach to working with individuals with dissociation and DID. Though it may at first appear that the identities one may encounter have endless variations, they actually exist in certain patterns laid out in this structural theory; just as cortisol predicts certain types of defensive survival patterns in PTSD, the function of dissociation predicts certain identities when a personality divides itself. Personality division is based on survival, and survival requires both the avoidance of the overpowering traumatic memories, and a need for present day functioning. Reinders et al. conclude:

... dissociative identity disorder is characterized by at least two types of
dissociative identity states. Dissociative identity states that inhibit access and responses to traumatic memories to be able to function in daily life and dissociative identity states fixated on (with access and responses to) traumatic memories. These types of dissociative identity states exhibit different regional cerebral blood flow patterns as well as autonomic and subjective reactions when exposed to identical trauma-related stimuli. (2006, p. 739)

Van der Hart calls this primary personality the Apparently Normal Personality (ANP), which functions in the world and avoids the pain of traumatic memories. It is approximately normal and can pass for such in most circumstances. The ANP appears very well adjusted, if a bit blunted and distant. This is the identity that functions in the day-to-day world, often typified by depressive characteristics, numbing, or a hypo arousal state. This is not the same as the Adult Awareness that one hopes for in working with DID patients, but it is the majority shareholder, as it were, of awareness. In terms of the Acute Stress Disorder resolving itself, or not, this would be the functional identity developed in months one to three following the traumatic event. Often this identity is of a workaholic nature, constricted in emotional affect. One can see how this could be a precursor to delayed onset PTSD, and how the repressed emotional identity would be one waiting to be heard, and healed. As dissociation is so often hidden, it depends on the courage of the individual as well as the skill of the therapist to determine whether this adult awareness is truly in recovery, or is an ANP in dissociative denial.

The other personality in TSDP is the Emotional Personality (EP), which is usually hidden until triggered. This identity is in touch with the traumatic memory, but it has
many of the limitations of traumatic memories themselves; it is sensory based, emotional, only somewhat verbal, and often dysregulated; it is the keeper of vehement emotions. The EP is not able to function in the world; its function is to keep the overwhelming memories away from the ANP and the daytime world.

In Primary Structural Dissociation there is one ANP and one EP; this is what occurs in simple posttraumatic dissociative disorders such as PTSD. Each of these personalities identifies itself as an I, they have a set of action systems and a first person perspective. But, as delineated above, they have different tasks in their lives, splitting up the survival of the organism.

Secondary Structural Dissociation also has one ANP, but because the trauma began earlier in life, or is more overwhelming, or chronic, the dissociation is more complex; there is now more than one EP. As the EP’s are connected to the defense responses, one may be associated with fight, another with flight, a third with faint, and so on. Secondary SD is associated with Complex PTSD, trauma-based BPD, and DDNOS-subtype 1.

Finally, Tertiary Structural Dissociation, because of the extent of the trauma, has multiple EP’s and more than one ANP. Tertiary Structural Dissociation is usually associated only with DID. When the abuse was chronic, extensive, varied, and began in early childhood, these individuals require multiple ANP’s in order to function at all in the world. These patients are the classic multiple personalities we think of, switching between identities as I, the ANP’s and the EP’s, triggered by seemingly insignificant stressors. Their integration is low and so is their prognosis; however, they are often highly intelligent, as it requires considerable cognitive power to maintain this complex and creative structure. They are divided into daytime ANP identities and nighttime EP’s. At the same time, there is
little energy left for the creative movement of life towards fulfilling life’s tasks or achieving one’s goals. These DID individuals chronically function at a low level.

This theory gives us a structure within which to view therapy with these clients. Realizing their survival-driven need to minimize their anxieties, their behaviors and symptoms begin to make sense to us. Clients who have been traumatized know the exquisite fear of near destruction, and they are extremely defended so as to not reexperience that exquisite pain. There are almost countless interwoven defenses that we face in the therapeutic milieu. “Adler (1956) described all symptoms as ‘safeguarding tendencies’ to be viewed as alibis used by client to hide their feelings of worthlessness and helplessness” (Allers & Snow, 1999, p. 163). Though Adler can be considered spot on with his analysis, he underestimates the gravity of these clients’ feelings of helplessness and overestimates the conscious choice of a severely traumatized client when he uses the term “alibis.” One wonders if the original German word was as pejorative.

The dissociation that keeps the identities apart is based on non-integration of the memories and of the personalities. The client has what Janet called a “phobia of memory” (van der Kolk & Fisler, 1995, p. 24). In fact, many DID clients have a phobia of integration, fearing grief and the loss of their parts. Integration is almost a dirty word to them. Cooperation between the personalities may be a more achievable and palatable goal. In any case, a direct attempt to integrate the personalities is unlikely to be successful. It is more useful to examine the functions of the safeguarding behaviors and to devise a therapeutic approach based on their presentation. Dissociative symptoms “are a core dimension of the DSM-IV diagnosis of ASD. These symptoms fall into five categories: derealization, emotional numbing, depersonalization, a lack of awareness for one’s
surroundings (i.e., stupor), and psychogenic amnesia ....” (Steiner, Carrion, Plattner, & Koopman, 2003, p. 236).

Van der Hart’s theory of TSDP focuses on derealization and depersonification as the primary symptoms to address. He sees the EP’s as existing in trauma time, and the ANP’s as living in dissociative denial in present time; the EP knows the memory and has the feelings, while the ANP is in touch with neither. One has to get the present day client to realize that the event happened to them (personification), and that is not happening now (presentification); it happened in the past. This will eventually lead to integration of the memories. As most theoretical approaches go, the description is vastly easier than the process.

Taken together, personification and presentification constitute the mental action of realization. Traumatized individuals, by definition, have not integrated their traumatic memories. They are characterized by some degree of nonrealization of their traumatization ... They are, in Janet’s (1919) terms, unable to give these experiences their proper place in their “autobiography.” The more or less complete lack of synthesis, personification, and presentification constitute the essence of trauma, and are at the heart of all psychological, psychobiological, and psychosocial trauma-related symptoms. (van der Hart, Nijenhuis, & Solomon, 2010, p. 77)

The Limits of Talk Therapy as a Treatment Modality

“... it is quite unclear to what degree verbal therapies can reset the biological changes of PTSD ... (van der Kolk B. A., 2000, p. 249).
Treatments of choice for PTSD and trauma at this time are Cognitive Behavioral Therapy (CBT), Prolonged Exposure (PE), and Eye Movement Desensitization and Reprocessing (EMDR). Of these, EMDR is the most recent and, although over 20 years of scientific studies attest to its efficacy, it is still not completely accepted by many traditional therapists. Additionally, Adler’s Individual Psychology provides an approach for the treatment of trauma, but at present its interventions may be sufficient only for simple traumas and not for the issues of Complex PTSD. Nonetheless, Adler writes that: “Memories can never run counter to the style of life” (Ansbacher & Ansbacher, 1956, pp. 73-74). An understanding of the structure of traumatic memories leads one to include the entire memory system, not just the cognitive memories we access through narrative.

The limitations of “talk therapy” itself have become clear. Research concerning traditional cognitive therapy has, at best, discovered “little evidence that making meaning of a [Traumatic Event] alone resolves PTSD” (van der Kolk B. A., 2000, p. 256). Though restructuring of the cognitive schema is a cornerstone of many therapies, including Individual Psychology, it is not sufficient.

No matter how much you talk to someone, the words will not easily get translated into changes in the midbrain or the brain stem. The implications for therapy are obvious. That is, traditional verbal therapy may well be ineffective, and perhaps detrimental. (Sweeney, 2007, p. 2)

It is detrimental because, in fact, we may be emphasizing cognitive denial of the traumatic memory while reinforcing the functional dissociation of the individual from their somatic memories.
... during state dissociation such mPFC activity might impede rather than facilitate extinction of conditioned responses, by preventing sufficient emotional engagement ... via inhibition of amygdala processing and central nucleus output to regions involved in conditioned autonomic, somatosensory, and behavioral responses. (Hopper, Frewen, van der Kolk, & Lanius, 2007, p. 722)

Some Cognitive Behavioral practitioners claim to evoke sensory and affective elements of the Traumatic Event, as well as narrative elements, but there is still almost complete dependence on verbal communication. “Breuer and Freud ... founded modern psychotherapy when they claimed that language could serve as a substitute for action: with its help, an affect can be “abreacted” almost as effectively” (van der Kolk, Hopper, & Osterman, 2001, p. 254). Unfortunately, almost is not the highest quality of care we can provide those who have been traumatized.

The best therapy claimed to offer is to help people inhibit the automatic physical actions that emotions provoke—limited extinction, and helping people with “anger management” and quieting them down before blowing off the handle, such as by counting to 10 and taking deep breaths. (van der Kolk B., 2006, p. 282)

In this case, we are bringing the symptoms of hyperarousal down into the “window of tolerance” (Ogden, Pain, & Fisher, 2006) but at the same time reinforcing distance from the somatic memories and a measure of dissociative hypoarousal. Though a therapy such as Dialectical Behavioral Therapy (DBT) is useful for emotional regulation of symptoms, it may diminish the integration of the traumatic memories themselves.
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Recollection without affect almost invariably produces no results: the psychical process which originally took place must be repeated as vividly as possible; it must be brought back to (tis) status nascendi and then given verbal utterance ... these memories, unlike the memories of their lives, are not at the patient’s disposal. On the contrary, these experiences are completely absent from the patient’s memory when they are in a normal psychical state, or are only present in a highly summary form. (van der Kolk B. A., 2000, p. 240)

Another limiting factor of traditional therapies, and this most certainly includes Adler’s Individual Psychology, is the difficulty of establishing the therapeutic relationship. This being a foundation for most therapies, one often finds traumatized clients to be tremendously wary; in fact, the establishment of safety and trust may become the primary therapeutic goal.

The promise of closeness and attunement for many traumatized individuals automatically evokes implicit memories of hurt, betrayal, and abandonment. As a result, feeling seen and understood, which ordinarily helps people to feel a greater sense of calm and in control, may precipitate a reliving of the trauma in individuals who have been victimized in intimate relationships. This means that, as trust is established it is critical to help create a physical sense of control by working on the establishment of physical boundaries. (van der Kolk B., 2006, p. 289)

As important as the therapeutic relationship is, it is not the end of the process and one should not settle for this with PTSD survivors. It is, however, a vital component of most
therapies, and may take a huge amount of time and effort to establish with trauma victims, especially those who have suffered complex trauma. This fear of intimacy predicts the difficulties of group therapy with trauma victims, as well as the rewards. Often these individuals are extremely isolated, and interpersonal relationships are distant goals for them.

**Prolonged exposure therapy (PE).** There is considerable history and theory supporting PE therapy, which has as its mechanism the process of desensatization. The retelling of the Traumatic Event begins with and relies upon the Declarative Memory of the client, and goes much further as it makes known the sensory components of the Traumatic Event. This assumes, of course, that the memory of the Traumatic Event is accessible and that the client is able to access the sensory portions of their traumatic memories. “PE also presupposes traumatic memories are available to conscious thought and can be organized with sufficient coherence to form a complete multimodal (cognitive-relational-somatosensory) narrative. Dissociation fundamentally compromises these basic conditions” (Rothbaum, Astin, & Marsteller, 2005, p. 354).

It is a laborious and emotionally painful therapy with a high dropout rate; in fact, many therapists have turned away from PE because it can be very difficult to put one’s client through such a difficult process. It is prone to leave the patients in distress between appointments, exacerbated by the requirements of written homework during these breaks. Cognitive restructuring is not considered an explicit part of PE. Although, once again, individual therapists may implicitly bring in the missing pieces needed for successful recovery from trauma, it is primarily a one-dimensional approach, based on the beliefs about catharsis and abreaction.
For a survivor of repeated familial abuse, with comorbid diagnoses, characterological damage, disorganized attachment, and chaotic lifestyle patterns, an isolated trial of PE may be as effective as tugging on a tangled knot: the result will be a tighter, more entangled mass, compounded by more frustration and despair that no help is forthcoming. (Rothbaum, Astin, & Marsteller, 2005, p. 353)

**The Need for an Integrated Therapeutic Approach**

What is needed for the integration of traumatic memories is an approach that brings the cognitive and the sensory together into the same place with the client, and a restructuring of the cognitive belief system as well. “Thus, confrontation of the memories does not appear to be sufficient to provide a therapeutic effect, but also requires the restructuring and integration of memories” (Peres & McFarlane, 2008, p. 484).

Clients who are severely traumatized with diagnoses of Complex PTSD, DID, and DESNOS invariably have a history of chronic childhood abuse. Their symptomatology, personality traits, and Lifestyle tend to the dissociative or shut down type. This is not surprising, as interpersonal and interrelational abuse are some of the most destructive and difficult experiences for a child or adult. “Traumatic attachments in childhood lead to self-modulation of painful affect by directing attention away from internal emotional states” (Schore, 2002, p. 22).

Clients who are shut down emotionally may be high functioning in their daytime life, at least in some of the Tasks of Life; as such, they may not appear in our offices until later in their lives, by then with established denial patterns and vague feelings of dissatisfaction. A diagnosis of Dysthymia, Generalized Anxiety, Mood Disorder NOS, Schizoid personality, or
other surface diagnoses may emerge, based on the presenting symptomatology of defensive behaviors.

Most therapists recognize the difficulty of dealing with this population, whose functional dissociation may hide a more complex emotional history; one that the client may or may not wish to explore. We are guided by the goals of the client but also by the knowledge of what is required to achieve those goals. These may not be in agreement. Clients often self-limit discovery of their past feelings as a way of self-protection. This is one and the same in the field of traumatic memories; both the current symptoms and the past trauma exhibit non-integration as both the problem and as the solution. Depending on the extent of the trauma, considerable courage may be required to undergo the pain and grief required for re-processing of the dissociative past to overcome their phobia of memory. This is likely the genesis of delayed onset PTSD as well as the seven misdiagnoses of DID.

The vestiges of chronic childhood trauma, hidden by amnesia, minimization, or distortion, may coalesce to resist any therapeutic process that threatens to expose the defensive survival strategies of the vulnerable child. Their adult, public selves may have appeared to be extremely well regulated until a significant stressor of life comes along to trigger a cascade of symptoms; often, further dissociation serves to regulate their symptoms and they return to functioning, perhaps using an addiction to conceal the pressing internal feelings of helplessness from their traumatic psychohistory. “One or more dissociative parts of the personality avoid traumatic memories and perform functions in daily life, while one or more other parts remain fixated in traumatic experiences and defensive actions” (van der Hart, Nijenhuis, & Steele, 2005, p. 413).
**Adler’s individual psychology.** When dealing with a traumatized individual, it is impossible to fulfill our therapeutic imperatives without exploring the psychohistory of the client. Adlerian concepts, created eighty years ago, surprisingly anticipate many modern explications of Traumatic Memory, neurobiology, and treatment approaches. Adler used memory in the formulation of his psychodynamic approach to cognitive schema. The accessing of recollections of pre-Declarative Memory events in the development of the individual forms their Lifestyle as well as their brains. According to Disque and Bitter:

Adlerians believe that the individual is in retreat from some task or experience that is perceived to threaten their very being. Their movement in life may resemble being stuck, and these feelings seem both overwhelming and disconnected from them; that is, they experience the emotion as out of their personal control. (2004, p. 116)

Adler’s Individual Psychology, with its emphasis on safeguarding behaviors, the formation of lifestyle in childhood, and the holism of the individual, is an umbrella theory that this writer finds compatible with the topic of this paper, the structure and treatment of traumatic memories. One of the differences, however, is that Adler emphasizes the choice of the client, and their presumed lack of courage in facing life’s tasks; that is, he views his client through the lens of cognition, adult awareness, and the executive functions of the neo-cortex. While noting that sometimes trauma will affect the client in overwhelming ways, and that dissociation is the “double-life of the neurotic” (Allers & Snow, 1999, p. 163) there is still a tone of shame and responsibility in the original writings carried over into current Adlerian doctrines. Yet Adler clearly believes that what he calls Lifestyle is formed by a child’s interpretation of their early experiences carried into the present. The
assumption that we can let go of childish beliefs by mere cognition belies the power of developing emotions, neurobiology, and the intricacies of memory, not to mention the trauma itself.

However, his prescient use of Early Recollections to augment his cognitive approach brings sensory and partially integrated memories into the therapeutic process. Early Recollections appear to be the quintessential traumatic therapeutic intervention. As Janoe writes about dealing with feelings through the use of early memories, Early Recollections are “the linkage between our rational, bodily, and emotional selves, which are not to be thought of as different or separate parts of our selves so much as different aspects of the same self” (Janoe & Janoe, 1973, p. 1).

Early Recollections enable the reliving of a past memory, acknowledge the limits of Declarative Memory, invite the somatic memories in, and reprocess the memory into the cognitive system as they update the cognitive schema. It is an intervention of integration, distortion correction, and re-aligned positive cognitions. As such, as we now know it fulfills all of the requirements to re-integrate traumatic memories. Adler’s therapeutic framework fits the structure of Traumatic Memory extremely well. “If an event, once charged with emotions, can be integrated into an individual’s autobiographical memory, it tends not to be available anymore as a separate and immutable entity. The memory becomes modified by associated experiences, emotional context and a state of consciousness during the recall process” (Peres & McFarlane, 2008, p. 483).

Early Recollections are not about traumatic memories. Except when they are. They can be coded, semi-accurate, distorted and protective versions of past events imprinted in both Declarative Memory and un-integrated Traumatic Memory. While Adlerian theory
implies that the memory is not necessarily factual, and that the beliefs are from the present, it can equally be true that the memory is factual and that the beliefs originated in the past. These beliefs are translated into cognition and distortions, and preserved in the present as Lifestyle. Chronic experiences, whether wholly traumatic or tinged with sub-crisis survival fears, can be preserved in the organism’s neurobiology and then expressed as part of Lifestyle. The Adlerian intervention of Early Recollections informs us of the current belief system, the current *Operating System* of this individual. Let’s call it TF Version 6.1. The therapeutic process collaboratively updates this system, fixes previous bugs, and adjusts for current realities.

Steiner et al. (2003) note that one author has distinguished between type I events (singular discrete events) and type II events (traumatic life events). Type I events “are more likely to lead to misperceptions and full, detailed memories, in contrast to the high levels of dissociative symptoms that she views as ensuing from type II events” (Steiner, Carrion, Plattner, & Koopman, p. 240). Adler’s use of Early Recollections is well able to deal with sub-traumatic chronicity and with type I traumatic life events, but has less success with traumatic dissociation such as might be associated with type II traumas.

All the therapies that rely upon cognition and narrative memories have limitations when dealing with Complex PTSD, the diagnosis associated with chronic abuse and a mixture of small t’s and large T’s. “These experiences are completely absent from the patient’s memory when they are in a normal psychical state, or are only present in a highly summary form” (van der Kolk B. A., 2000, p. 240). The substantial safeguarding behavior of dissociation is extremely difficult to disentangle, especially when it progresses to Secondary and Tertiary Structural Dissociation.
Some of the limitations of Individual Psychology for dealing with traumatic memories and their related disorders have already been noted. The need for a largely cognitive process, which could be severely limited with dissociative clients; the need for a trusting therapeutic relationship, which is very difficult to establish with severely traumatized clients; and the implications of shame and responsibility on what is possibly, if not probably, a victim of chronic childhood sexual or physical abuse. This Adlerian perspective, if proscribed indelicately, could send the client tumbling into shame and distrust, ruined any progress. Although shame is clearly a safeguarding behavior and in of itself, it can be of such power as to derail therapy in its entirety. Adler says that we are defending our self-esteem, but severely traumatized clients feel they are defending their very existence. Adler viewed “dissociation as a creative solution during the trauma of incest ... the solution later becomes an excuse to protect one’s self-worth, impose distance, and preserve one’s self-esteem, private logic, and fictive goals” (Allers & Snow, 1999, p. 164)

Eye Movement Desensitization Reprocessing (EMDR). “One of the basic premises of EMDR is that most psychopathologies are based on early life experiences” (Shapiro, 2001, p. viii).

Eye Movement Desensitization and Reprocessing is a recent therapeutic approach for the treatment of trauma discovered by Francine Shapiro in 1987, followed by the theory of Adaptive Information Processing in 1995. In the past twenty plus years it has become, in some circles, the treatment of choice for PTSD. There are countless studies supporting its efficacy over CBT, PE, and traditional psychiatric approaches. It can be as brief as a few sessions, there is a low dropout rate, and the effects are long lasting. The theory and
practice of EMDR closely follows our current understanding of both traumatic memories and recent neurobiological studies of the brain. Finally, and especially gratifying to this writer, it is consistent with the practice of Adlerian Individual Psychology. EMDR is reminiscent of the practice of collecting Early Recollections, especially as practiced by Janoe and Janoe (1973), who take a somatic approach to Early Recollections.

Though sometimes seen by only its unique characteristic, eye movements or other forms of bi-lateral stimulation, it is more than just a trauma resolution method. EMDR is an eight-step phase model of trauma treatment supported by substantial research. As this paper states, many psychiatric disorders have the symptomatology of traumatic memories in their criteria, and EMDR is therefore of value to more than just trauma survivors as traditionally defined.

EMDR addresses the structure of Traumatic Memory and the requirements for reintegration more completely than any of the individual therapies listed above, including Individual Psychology. It uses the exposure techniques of PE; in fact, it was originally called Eye Movement Desensitization, yet it is considerably more than just an exposure process. There is cognition, reframing, reprocessing, and considerable attention to safety in its eight-step protocol. Critics point out the desensitization component, and perhaps the cognitive element, but often wish to reduce it to a mere technique. This is mere squabbling between schools of psychological theory and not in our client’s best interests. EMDR has not only proven to be efficacious, its course of treatment is particularly brief.

In a waitlist-controlled study of 21 rape victims with PTSD, Rothbaum (1997) found that 91% of victims no longer met criteria for PTSD following four EMDR sessions, while no change was observed after 4 weeks in a
nontreatment group. Wilson, Becker, and Tinker (1995) recorded similar robust improvement following three sessions of EMDR in 80 psychologically traumatized individuals. (Levin, Lazrove, & van der Kolk, 1999, p. 159)

EMDR works through bi-lateral stimulation of the brain, allowing for the mutual vocation of both Declarative Memory and Traumatic Memory/Sensory Memory during its process. Studies pre and post EMDR attest to the brain changes that occur. “Upon recall of the traumatic memory during SPECT scanning, two areas of the brain were hyperactive post-EMDR treatment relative to pretreatment: the anterior cingulate gyrus and the left frontal lobe” (Levin, Lazrove, & van der Kolk, 1999, p. 159), and furthermore:

... anterior cingulate cortex activation in EMDR is associated with transfer of memories from emotional paralimbic systems to episodic memory systems (both hippocampal and neocortical) so that incidents can be recalled to consciousness without activation of affects, affectively loaded negative cognitions and somatic memories.” (Corrigan, 2002, p. 14)

Eye movements have neurobiological evidence to back them up as well. The eye movements appear to calm the individual during traumatic memory recall, shown in one of the few scientific studies actually performed during EMDR. While “performing eye movements with trauma-related recall deactivates the lateral PFC over-activation during trauma-related recall cross-sectionally and longitudinally, and indicate a biological basis for the clinical efficacy of EMDR in PTSD” (Ohtani, Matsuo, Kasai, Kato, & Kato, 2009, p. 381).

Learning can only take place in a calm physiological state, which is why mere catharsis is, in of itself, not sufficient for therapeutic progress; in fact, it may reinforce the
initial trauma as well as the safeguarding behaviors of repression and traumatic dissociation. What the above studies show is that there is a *meeting* of the two memory systems, the VAM and the SAM, during the relatively calm and controlled state of a set of EM’s. EMDR provides the container for these memories to meet, integrate, and be reprocessed in a state of relative calm and complete safety.

Safety and trust, of particular difficulty for trauma survivors, is uniquely addressed in EMDR; in this case, it is not necessary to establish a deep bond with the therapist. In fact, van der Kolk reports that he never even told his initial EMDR practitioner the actual content of his memories; yet at the end he still felt “as if something had been processed and left behind” (Wylie, 2004). To provide security for the individual, the practitioner installs with Eye Movements both a *safe place* for the client to envision themselves in, and the image of a *protector* to join them in the recalled event, if necessary. The client has complete control over the re-experiencing process, as they themselves call up the images and can stop the Eye Movement set instantly with a hand signal.

In this recall process the reliving is both sensory and largely internal; in fact, speaking during the Eye Movement sets is discouraged because engaging the verbal and cognitive brain diminishes sensory recall of the traumatic event in its entirety, and the efficacy of the session. Words themselves at this point are often defensive and interruptive, especially with an overly cognitive client. In EMDR, a picture truly is better than a thousand words; consequently, therapy can take but a few sessions for a simple T event. The processing is efficient, thorough, and yet deeply psychodynamic. One is reminded of the reliving of a car accident, where space and time obey no rules; the process can be frightening, but it is safe. This is exposure, brief and sensory exposure, with a unique
calming protocol followed by explicit positive cognitive change.

Some Adlerians complain that EMDR interrupts the reliving process; however this is very intentional and is done to ensure the client stays within the range of emotional regulation and doesn't slip or flip into traumatized re-experiencing or defensive dissociation. When one is undergoing the sensory process during EMDR, some describe it as *going down into the pit*; it is vital to come up for air, and frequently.

During this breathing time one does get to speak; these words serve as markers of a sort during the reprocessing of narrative memories. At these breaks, or at end of the session, the cognition established at the beginning is checked for its progress from negative to positive. This is the cognitive restructuring we also find in Individual Psychology, but it is explicitly laid out in this reprocessing phase. If the client needs some guidance, the practitioner will provide what is termed a cognitive interweave. This interweave will be familiar to all therapists, but in EMDR it is used sparingly. Students in training invariably talk too much. This is not a *talking cure*, and words usually get in the way. The hope is that the client will do all the work without the therapist's intervention.

EMDR works extremely well with the big T's of simple PTSD, often in a very brief course of therapy. It is also effective in some cases of Complex PTSD; however, one must always be careful to leave enough time in the session to bring the client back to the present, up and out of the emotional wormhole of unintegrated traumatic memories and the possible presence of the EP. The defensive symptoms of hyperarousal and dissociation may be triggered during EMDR, and it is necessary to take as many sessions as necessary to assure that the client has sufficient resources for self-regulation before embarking on the fourth phase of EMDR, the EM's.
Clients are screened for dissociative tendencies with the Dissociative Experiences Scale (DES). EMDR can work with clients with Primary Structural Dissociation and, with care and preparation, for those with Secondary Structural Dissociation. However, clients with severe dissociation or Tertiary Structural Dissociation, those with DID diagnoses or very complex and persistent PTSD, may need a year or more of therapy before engaging in the EMDR protocols. This is still a very difficult population to work with, no matter the approach.

Trauma is from the Greek, meaning a wound, inflicted externally. Many clients seem to have trouble with the concept of being traumatized, implying weakness or permanent damage; they prefer to deny that they have been wounded. For those who prefer to minimize, often the very same clients who don’t want to re-experience the event, there are stress management techniques and supportive therapies. Reintegration of traumatic memories can be a painful course, but it is a necessary one to regain the integrity of oneself.

The imprint of trauma doesn’t ”sit” in the verbal, understanding, part of the brain, but in much deeper regions-amygdala, hippocampus, hypothalamus, brain stem-which are only marginally affected by thinking and cognition. But if trauma is situated in these subcortical areas, then to do effective therapy, we need to do things that change the way people regulate these core functions, which probably can’t be done by words and language alone.

(Wylie, 2004, p. 5)

Discussion

The “slings and arrows of outrageous fortune” affect not all of us, although we are all affected by the experiences of our personal history. To a great extent whether we rise to
the definition of wounded or traumatized depends on our individual fortunes, our unique perceptions, and our memories. The study of memory leads us to see that memory is more than a narrative, especially our early memories, formed before the capacity for complete Declarative Memory is formed.

The study of brain chemistry indicates that we have a mix of sensory and cognitive memory in our Adult Awareness, and that in our early development the cognitive lags behind sensory and emotional memory. Similarly, when our survival system is triggered as adults or children, our cognitive understanding lags again as our amygdala takes a hormonally driven shortcut to shield us from trauma, whether real or perceived. Problems occur when this traumatic experience is not integrated completely into our cognitive schema.

Neurobiological studies show that chronic defensive states can become chronic defensive traits, a basis for Lifestyle, defensive safeguarding behaviors, and disorders of emotional dysregulation, mood, trauma, and disassociation. Whenever we feel threatened, our limbic system responds with emergency measures mediated by cortisol, preserved by cortisol, and detoured from the neocortex by cortisol. Much of the history of psychology has addressed the effects of trauma, beginning with Janet and progressing to Shapiro, van de Hart and van de Kolk. If left unintegrated these experiences remain as sensory memories that still have influence over our behaviors. If of sufficient fearful strength, they are wounds left in our systems as foreign bodies.

The structure of traumatic memories both delineates the formation of traumatic, nonintegrated memories and suggests healing approaches to these preserved traumas. What is needed is the integration of these memory systems; what is required for
integration is a safe meeting of the two memories, with the original sensory traumatic memories being re-processed and integrated into cognition and the cognitive schema realigned in acceptance of these memories. As the individual is released from the defensive and cortisol driven emotional state, they return to, or begin, healthy functioning; and they now can move towards their teleological goals in life. Individual Psychology addresses these needs in the intervention of Early Recollections, especially effective for simple traumas and for some types of complex trauma. Only EMDR, at this point in the progress of therapeutic practice, addresses more complex traumas and offers all of these components in their eight-phase protocol.

Understanding how the brain works, interwoven with our accumulated knowledge of the human condition, will lead us to an appreciation for sensory as well as cognitive memory and bring us to the perspective of the individual sitting in front of us as a holistic entity, with a past, present, and a movement towards their unique and integrated future.
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