

## Editorial Musings

### Reconsidering the Nature of Trauma

Bonnie Badenoch, PhD

Our word “trauma” comes directly from the Greek word *titrosko*, meaning “wound.” So from an interpersonal neurobiology perspective we might ask, “What is the nature of the wound to brain, mind, and relationships that produces both the objective conditions and subjective experience of trauma?” In mulling an answer to this question, we find ourselves immediately drawn into the dense woods of complexity theory. We understand that individual brains (and groups of brains) are complex systems, and therefore they are self-organizing (meaning that there is an intrinsic drive toward greater coherence), nonlinear (meaning that small changes in one component of the system can lead to large changes in the overall system), and both emergent and recursive (meaning that their organization is continually influenced by new experience, at the same time that established and emerging states are reinforced through feedback) (Siegel, 1999).

We also understand that over time, our brains develop a set of constraints, both internal (changing synaptic strengths in our brains) and external (relationships with our environment), that determine the limits within which we can function. Our neuroplastic brains allow these constraints to potentially shift, both in the direction of greater limits or greater freedom in our genetically hard-wired movement toward complexity.

Let’s see if we can make these theoretical abstractions more concrete. A baby comes into the world with her attachment system in full bloom, seeking safety and closeness, the basic nourishment for her brain’s inherent drive toward complexity. If she is met by a mother<sup>1</sup> whose own

brain is integrated in such a way that she can attune with her baby, providing warmth and security as well as flexible responses to ever-changing needs, then a foundation is built which allows her child to develop constraints that will encourage ongoing increases in complexity. Mother’s smile releases a cascade of bonding chemicals and neural firings in both of them that wire in an expectation of relational goodness. The recursive systems within the brain then reinforce these states of mind and increase the probability that they will recur. The sense of safety helps this child remain open to new experience, to emerging states of mind in each moment, while positive foundational states of mind regarding herself and her world grow more differentiated and stable, preparing her for linkage with others in ways that will keep the cycle of increasing complexity flowing. This balance between stability and newness is fertile ground for the emergence of increasing complexity.

Under less favorable circumstances, this child’s mother may not have the capacity to provide such nourishment. If a mother’s own constraints mean that her brain is less integrated and her mind less coherent, then attunement can more easily break down, and most likely she will not be able to offer the comfort of any repair for these ruptures in nurturance. Her baby will still be open and reaching with her attachment system, but will receive either inconsistent and potentially fragmenting information, or consistent but painful information from her mother. Over the days and months, her mother’s chaos or rigid coldness repeatedly releases a cascade of stress chemicals and wires in the expectation of relational distress

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<sup>1</sup> Please allow the word “mother” to stand for “closest caregiver,” including father, grandparents, and others

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who have a significant early and central influence in shaping their child’s brain structure and functioning.

and pain. This frightened child may become wary of new experience, and gradually become trapped in a series of dissociated neural nets formed from fragmenting experiences, or in a limited cohesive state of mind about her own lack of worth and what she can expect from the world, developed around her mother's consistent rejection or chaotic connection. In both cases, these implicit neural networks remain in isolation from the larger flow of the integrating brain because there is no empathic glue to sustain the flow of energy and information that could help them integrate. Then, these constraints become roadblocks to the natural flow and developmental path toward complexity.

Because brain *structure* is being relationally created at the beginning of life, these very early impacts become powerful influences on the way we perceive, behave, and relate, especially because they are held in implicit-only memory. However, throughout our lifespan, painful and frightening experiences *that remain uncomforted and dis-integrated* can create additional complexity-inhibiting constraints and reinforce existing ones. I remember psychologist Alice Miller saying in an interview that children who lost parents in the London bombings in World War II and were comforted had fewer ongoing problems than children who lost their dogs and were ridiculed for their sadness. The centrality of empathy and attunement to the integration of potentially traumatic experiences cannot be overstated.

In *The Developing Mind* (1999), Dan Siegel speaks to such disruptions in integration: "Dysfunction in self-organization can be conceptualized as due to any pattern of constraint modification that does not permit movement toward such complexity" (p. 223). This train of thought might lead us to a definition of trauma as *any wounding experience that constrains our brains/minds/relationships from their natural movement toward complexity*. In this definition, these experiences would be on a continuum from mild to severe, and could include

not only relational but environmental impacts, such as natural disasters, poverty, and war, especially in the absence of empathic repair. This view would also open the way to helping our clients (and ourselves) give due weight to relational experiences that leave no visible marks, but create rigid and/or chaotic pockets in our brains, minds, and relationships.

One of the most significant struggles some of my clients encounter is the presence of parental coldness coupled with the absence of obvious trauma. Early rejection leaves an implicit certainty that some badness in them caused one or both parents to be rejecting. In order to give tolerable meaning to the terrible feelings of abandonment,



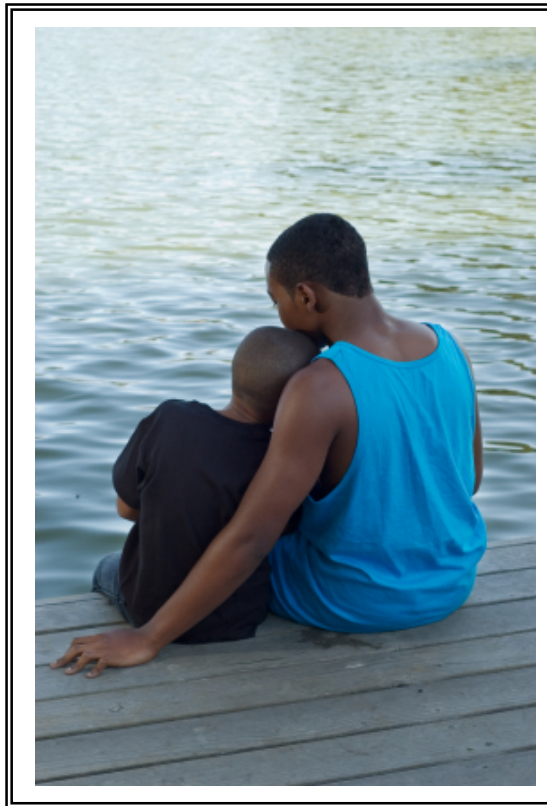
they develop a cohesive narrative about their inherent defects, which in turn becomes a trap blocking them from developing empathy for themselves or taking in care from others. After all, since they are merely bad seeds, why should they receive

compassion? If we develop a broad societal awareness that these early experiences of rejection are traumatic and brain-altering, we may be able to reduce the strength of the convictions of badness that the rejected person often carries into adulthood. I remember how long it took for society to accept that incest and child abuse were common realities that could and often did cause long-lasting damage. The pressure from the common belief that this rarely occurred caused many sufferers to remain silent, question the significance of their experiences, feel isolated, and believe they were "freaks." I believe we are at the beginning of a similar journey, this time toward a broad consciousness of both the experience and consequence of painful, disruptive attachments.

What determines whether an experience will create a complexity-inhibiting constraint? Potentially, many factors flow together to create probabilities

rather than certainties. For example, particular genetic factors may predispose us to greater or lesser resilience in the face of trauma (Kaufman, Yang, Douglas-Palumberi, Grasso, Lipschitz, Houshyar, et al, 2006). Our temperament may also help or hinder us in weathering attachment storms and other kinds of challenges (Kagan, 1994). Injury to the brain itself can permanently deter neural integration because of loss of or damage to tissue. However, many of our constraints are relationally generated, the result of painful or frightening experiences that are cut off from the larger flow of the integrating brain. *The combination of stress chemicals and lack of empathy both during the event and later contribute to the inability of such experiences to integrate.* Instead, these neural nets remain dissociated and isolated, largely in the limbic areas, becoming time bombs vulnerable to internal and external triggers, with their existence hinted at through the body's sensations and behavioral impulses, through painful relational patterns, often accompanied by a deep sense of shame.

As mentioned above, the single most consistent factor in ameliorating trauma is a caring, attuned relationship with someone who can contain and regulate us while we process the traumatic impact, whatever its origin. The research done by Joan Kaufman's group (cited above) shows that even with the less resilient genetic picture, daily contact with an adult the traumatized person can count on during the time of the trauma and even afterward can compensate for the genetic weakness conferred by having the gene variation that predicts less resilience. Similar research by Michael Rutter's (2005) group in London suggests this same gene accounts for variations in resilience in the strife of war or chronic stress. Interestingly, this gene only



expresses under the impact of trauma, pointing further to the many interwoven processes that contribute to our response to disruptive events.

Kaufman's research outcome makes sense from an IPNB perspective. Said very simply, when an upset, dis-integrated brain comes into the presence of a calm, integrated brain, the upset brain has a good chance of being supported in its natural movement toward complexity. We could imagine that the upset person brings his or her limbic system and the calm person brings middle prefrontal resources, so that the interpersonal system contains a whole brain that can move into an integrating flow. In this atmosphere of safety and connection, the long-isolated neural nets established by the trauma find a safe haven in which to open into working memory, receive comfort and regulation, and join the natural integrating flow of the brain toward complexity and coherence. In safety, our brains and minds can be more open to the new experience of relational goodness, which can then become part of the brain's recursive process. From a subjective viewpoint, we may experience an emerging wholeness and capacity for regulation that confers a sense of strength and equanimity. We may also become aware that we have internalized the relationship with the comforting other who has now become a permanent internalized resource in times of stress. Gradually, the new pattern of relationship gains strength, so that we are no longer caught in the endless tape loop

established by the past trauma. Moving forward, the experiences gradually become incorporated into the flow of our emotionally rich, resolved autobiographical narrative, able now to sometimes give voice to the intergenerational or societal tragedy at the heart of the wounding.

As we become part of these kinds of healing experiences, we might conclude that trauma may not be so much about the experience itself as about the way our brains/minds/relationships find the integrating resources within ourselves and through others to deal with the neural impact. Whether the content of the trauma is our mother's deep depression, our parents' divorce, or a history of sexual abuse, the restorative process follows the same pattern, making use of relational goodness to foster the shift in constraints so they support rather than block the natural flow toward complexity.

If we decide to work within this definition of trauma, then almost of all of us are survivors at least to some degree. With every empathic encounter with ourselves or others, we may also potentially be collaborators in the healing of traumatic experience. In my fantasy of our possible human future, I imagine a society in which we teach our children about this lovely responsibility to foster neural integration in ourselves and others, side by side with the ABCs and the healing arts of reflection and compassion.

**Bonnie Badenoch, PhD, LMFT** is co-founder of Center for Brain-Wise Living, a nonprofit counseling and consultation group in Portland, Oregon. She enjoys providing consultation, supervision, and training with the brain in mind, and as a therapist, specializes in helping people heal torn attachments. Her doctorate in comparative religion and practice of meditation inform her work and support her confidence in life's positive possibilities. She is also a founding board member of GAINS and its current vice president, as well as the Editor-in-Chief of the GAINS Quarterly. Seeking to foster the integration of Interpersonal Neurobiology into the practice of therapy, she has written *Being a Brain-Wise Therapist: A Practical Guide to Interpersonal Neurobiology*, published in 2008 by Norton in their IPNB series. You can visit Bonnie's website at [www.brainwisetherapist.com](http://www.brainwisetherapist.com) or email her at [bonniebadenoch@mac.com](mailto:bonniebadenoch@mac.com).

Until we stop ourselves or, more often, have been stopped, we hope to put certain of life's events "behind us" and get on with our living. After we stop we see that certain of life's issues will be with us for as long as we live. We will pass through them again and again, each time with a new story, each time with a greater understanding, until they become indistinguishable from our blessings and our wisdom. It's the way life teaches us how to live.

--Rachel Naomi Remen, Author

