

Review of: "Viewing trauma as a developmental process emerging from chronic repeated experience and reiterated meaning-making mental processes"

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Tronick and Hunter, both developmental neuroscientists, have written a critique of the widespread view of psychological trauma, still held by “most clinicians and diagnostic manuals,” that says that single severe stressful events, by themselves, cause psychopathology, have a relatively fixed meaning, and are inescapably traumatic; and that minimizes the impact of the ongoing disturbing interpersonal context within which many singular traumatic events arise—as if child abuse, the trauma they mainly address, takes place in an otherwise “pastoral” family life, rather than an ongoing “grim, rugged landscape.” The authors emphasize, instead, the cascading, reverberating damage done by chronic, repeated stressful experiences—typically the matrix within which singular, severe episodes of abuse arise. “[T]he damage—the trauma—emerges from the accretion of meaning continuously made by reiterated mental processes and repeated events.”

The conceptual framework and critique Tronick and Hunter give us are solidly grounded in empirical research; clearly reasoned and concisely presented; and to my mind demonstrate persuasively how trauma is in fact a more complex phenomenon than traditionally understood (though, full disclosure: I had already held that view). The reader should note that I am a clinical psychologist and psychoanalyst, not a neuroscientist, and over a long career I’ve spent most of my professional life doing and writing about clinical work.

What follows is, first, a summary of the paper’s main ideas, with my occasional comments interspersed. Afterwards, I pose two unanswered questions the paper left me with—areas the authors might elaborate to strengthen it even further.

The authors’ developmental perspective is rooted in research that has shown that it is “chronic stressors [that] tend to produce lasting effects on our brains and bodies ... from the molecular epigenetic level to the systemic and behavioral,” including many bodily systems. Acute stress does not produce such changes. “The chronic, stabilized nature of traumatizing childhood environments is a key to understanding their pernicious effects. In sum, attempting to conceptualize trauma as a universally discrete, acute event obscures these linkages.”

While the authors’ elaboration of the neurosomatic impacts of chronic stress is essential to how they conceptualize the enduring impact of terrifying, overwhelming experiences, and provides context for understanding the impact of the social surround, it is their elaboration of social factors that drives their critique.

The authors describe the internal neurosomatic events, and qualitative developmental cognitive changes, that can make

even single terrifying events a source of enduring damage—that, in other words, can make a single event a source of chronic stress. However, “An event that is repeated [in the external world] triggers the host of processes again and again. Its effects are more likely to accumulate, be more intense, affect a wider range of experiences and the child’s sense of their world.”

A fundamental conceptual basis the authors use to examine psychological trauma—specifically child abuse—is open-systems theory. This theory posits that children, like all biological systems, must continuously and actively engage with the world in order to get the resources they need for development. What they get, or don’t, from their environment “sculpts their neurosomatic systems, experience and ways of being for good or ill.” Children require sufficient positive input from their environment—not just material, but also emotional—in order to grow and develop optimally. But if adequate positive emotional input is lacking, or crowded out by fear experiences, children will focus only on survival and on detecting threats. They will often feel fear even in response to small stressors, leaving little room to take in positive social experiences, feel emotions other than fear, or become aware of their inner experiences. All of this interferes with their psychological and brain development.

Also central to the authors’ argument is the well established view that the child, from her earliest time, actively and continuously constructs meanings for what happens to her—meanings that include expectations other people as well as a sense of who she herself is in relation to people and things in the world. The meanings a child makes of her experiences are based on how they are processed by her innate neurosomatic thresholds and characteristics, as well on the meanings she has already constructed of earlier interpersonal events, especially those with caregivers. Conversely, the meanings the child has made of earlier events affect how she perceives and reacts to later events. Expectations of danger can cascade, with later events seen in an increasingly distorted and debilitating way. One implication of the influence of earlier meanings on later ones is that similar events may be experienced very differently by different children, and further, that certain events may be traumatic for one child but not for another. And the meaning of a given event may change, even over a short period of time—the authors point to infants’ quickly evolving response to the still-face situation as an example of how the same event can quickly become more traumatic; in the still-face example, this shift is based on the child’s growing sense of helplessness to influence the caregiver. The meanings a child has made of earlier events may also change over longer spans of time, as her developing cognitive and language abilities affect how she recalls them. They conclude, therefore, that it is problematic to say that particular events will always be traumatic for every child, and to define trauma simply by the nature of the event itself. I’ll come back to this point later, when I get into my own thoughts about the paper.

The authors also emphasize the lasting ways that stressful events affect, and are remembered by, the body. Even before a child’s language and symbolic capacities develop, and before she is able to construct memories she will later be able to consciously recall—and even, in some ways, in fetuses in utero—a child’s interactions with the environment are recorded in multiple neurosomatic systems. These include the cerebral cortex and brain stem, as well as the immune system, the autonomic nervous system, the gut biome, and the hypothalamic-pituitary-adrenal axis. These “known but unremembered” painful experiences are “stored in the brain and body’s operating patterns, activation preferences, set points, thresholds, duration, shape and refractory period of the response, and other response features, throughout the embodied somatic

systems” in the form of “reoccurring neural activation rhythms that make and hold their meaning.” In both lower and higher-order brain systems, “patterns of neural activity co-occur with sufficient frequency, intensity or pattern, [and] become ‘connected’ at a synaptic level.” These body memories may shape a person’s later expectations of others and her understanding of who she is in relation to others, even if these memories are unavailable to consciousness and lack representational content. “This implicit coding or forming of neurosomatic reactivity is remarkably durable over the life span,” and may persist despite later adult realistic expectations. Early stressful experiences have such long-term effects because so many of the meanings the child has made of them are connected to fundamental regulatory and neurosomatic processes (I would have appreciated a brief, concrete example of this, though the basic concept is clear enough), and also because, when they happen, the infant does not yet possess a very differentiated perception of the world or fully developed regulatory processes, which could modulate the meaning given to these experiences.

Which leads to the principle of reiteration, or repetition. A child’s brain, cognitive functioning, and consciousness develop and become organized (and less “messy,” as the authors put it) as experiences with caregivers are repeated, with each repetition accruing additional meaning. But these repetitions happen not just in the physical world—they also happen internally, in the child’s mind and brain. Internal repetitions are recalled and “processed by the brain as if they were actually *external*”—as if they were new events happening in the outer world. Inner repetitions reinforce original external events.

Stressful experiences, especially, are “never just one-and-done ... there is no such thing as an acute singular traumatic event, an event that happens only once.” Fear conditioning, which has evolved due to its survival value and happens after a single exposure to a frightening stimulus, reinforces the principle of repetition in the case of frightening events. Even “a single-one-time-only traumatic event ... is repeatedly experienced and transformed,” “is internally reiteratively processed by a child over time, maybe over a lifetime: it lingers, pokes, prods, intrudes.” “Extinction is unlikely.” “Even a singular, isolated trauma by a stranger ... can have life-long detrimental effects.”

These internal repetitions cause a child to continually “anticipate it happening again ... [a] self-generated mental reprocessing ... [that] will go on and on with continuous, never-ending meaning-making processes, changing the meaning and fueling and self-amplifying them. Even more insidiously, she may make a self-conception that she is someone who should be slapped”—the example the authors use—“a destructive meaning that will have profound consequences for her expectations and interactions with the world in the future.”

However, possibly in conflict with the authors’ arguments that internal repetitions make even singular traumatic events unlikely to extinguish and likely to have damaging long-term effects, they also say, and document, that “singular events may only weakly initiate internal repetitive mental processes, may have few triggers, and fewer dysfunctional regulatory effects because the child’s caretakers/social partners provide ameliorative regulation, and because the meaning made by the child makes the event benign. Thus, most of us will be exposed to a traumatic event in our lives, but only a minority will develop a lasting disorder like PTSD as a consequence.”

The authors’ position that “ameliorative regulation” by caregivers and significant others blocks cascading destructive

internal repetitions and long-term debilitating consequences is in line with recent research and clinical literature documenting how crucial an empathic, understanding response by caregivers and other significant people is for a trauma victim's recovery (see, for example, Herman, 2023). These two views about the outcome of truly one-off traumatic events when the important other people in the victim's life respond in an understanding, empathic, nurturing, and responsive way may not actually be in conflict; but I would think more discussion here would have been illuminating. More about this later.

In any case, the authors say that a pattern of repeated, actual, *external* events is worse. "[T]here are differences between ... singular and repeated events." A stressful "event that is repeated triggers the host of processes [that reinforce disturbing, frightening meanings] again and again. Its effects are more likely to accumulate, be more intense, affect a wider range of experiences and the child's sense of their world."

The authors also emphasize that repeated abuse is very likely to take place in the context of other frightening, stressful events, and that "the likelihood that the rest of her world is 'normal' is vanishingly small." "Even a single slap in the context of disturbed parenting could be enough to disrupt the child's development. ... it might not have had so debilitating an effect except for the already vulnerable state of the child given the in-between disturbed nonslapping caretaking she has received. So, we ask, is a slap, a fast physical event taking only milliseconds, really an acute singularity?"

And they underline the importance the caregivers' response has in shaping how an event affects a child: "...how others in the child's life make meaning of the event, especially in how the meaning made by others of the event affects the child's relations with them. ... [for example, the parents'] sense of horror ... [or] their punitive reaction to the sibling, will likely lead to changes in the ... meaning made of the event by the younger child." The authors cite their own research which has demonstrated infants' high level of sensitivity even to emotional states in their mothers that are hard for other people to detect. We can add here the crucial importance of an empathic, understanding response by caregivers and other significant people for a trauma victim's recovery, as I noted above.

The authors also point out that chance perceptions during a frightening event, things "unique to the child and unique to the original experience ... the crushed beer can, or the flowers in the room where the beating took place" may go on to become triggers that readily "reignite" the experience, making her even more vulnerable to internal traumatic repetitions.

Finally, the authors look at what all this suggests for treating the effects of trauma—recommendations that I find persuasive. In treating children, they recommend, in the Vygotskian tradition, that the child be "given opportunities and expectations, usually by or with another person, that are neither too familiar and simple, nor too unfamiliar and complex. ... [a] child with a psychic dysfunction has to be allowed to select or guide the information that she is presented with such that it fits and can be worked on by her meaning-making capacities to make new meanings." For adults, "it is critical to determine where the meaning 'resides'"—which of the neurosomatic systems are involved. Since a multiplicity of systems is likely to be involved, multiple, simultaneous forms of treatment are likely to be necessary, focusing on both cognitive and somatic levels; ideally, the particular somatic systems involved should be identified and targeted (though the authors acknowledge that our current ability to diagnose which systems are involved, and to target treatment, "should not be overstated"). Treatment methods may include "somatic, verbal, neurophysiologic, medication, drugs, relational, experiential, narrative, video, and all therapies that are alphabetically identified (CBT, DBT, EMDR), and others too

numerous to mention.” Because of the need for expertise in very different areas, treatment by a team may be optimal. The patient’s meaning-making processes must be reorganized through repetitive experiences, both within the treatment and, since most of people’s lives are lived outside of therapy, also with other people in the person’s life.

How I think this strong paper could be even stronger

The authors have outlined what I see as a robust and persuasive conceptual framework for looking at trauma. I appreciate their clear elaboration of the internal process that inevitably follow and reinforce single terrifying experiences. And I think the way they spell out the crucial role of repeated interpersonal experiences—both those in someone’s ongoing social world, and also how people respond after a terrifying event happens—in determining its ultimate impact, is an essential correction to the simpler, commonly held view that trauma is a single event. I would have liked them to push their framework to explore two extremes cases at closer range, to sharpen their concepts even further. These cases lie at opposite ends of the violence continuum: singular horrific events in an otherwise benign social context, and ongoing subtle forms of neglect in the absence of gross neglect or violence.

Singular horrific events in an otherwise benign social context

The authors argument against the view that trauma is a one-and-done event, divorced from someone’s ongoing social environment and the meanings they attach to what happened to them, is intuitively persuasive in the case they focus on, child abuse by parents; children are still dependent, and their self-regulatory processes are still developing, being shaped by, and enmeshed with the responses of the very people who are also their abusers. But what about one-time violence against children by people outside the family? What about adults?

The authors “disagree with the argument made by some clinicians and researchers, and reified in some of our diagnostic manuals that specific events are inescapably traumatic. Of course, some events are more likely to generate a traumatic-like experience, but still, the meaning of it will be different for different children [and] is not fixed.” The authors stop short of saying that even the most shocking isolated, one-time events, regardless of the personal meaning these events have to the victim, will, *in and of themselves, always* leave some kind of lasting traumatic impact. But given that the one-and-done view of trauma is the main target of the authors’ critique, it seems important for them to address this question. Are there *any* single events so horrific that they *always* leave a lasting traumatic impact—irrespective of their personal meaning for the victim, and even when she has grown up in, and still lives in, an attuned, caring environment? It seems almost foolish to ask this question about reality, given that many people damaged by the horrors of the last century and the current one have undoubtedly been people who grew up loved and secure and who, after their unbearable experiences, settled into caring, affirming, understanding surroundings. But if the authors’ answer to this question is yes, I think it’s important that they be able to account for this from within their conceptual framework.

It’s unclear to me what the authors’ conceptual framework, by itself, would say about the possibility that even the most horrific one-off events will *always* cause long-lasting damage to *everyone*, regardless of their past experiences and surrounding circumstances. They emphasize the extensive neurosomatic effects of chronic stress, and describe how even single-event traumas can, essentially, be chronically stressful due to the ongoing, and easily triggered, internal reiterations

they create, which themselves can have cascading traumatic effects. As they themselves say, “extinction is unlikely.” In other words, such events are almost certain to do lasting damage. But they also make a strong case that a reliably benign surrounding social milieu can help extinguish these inner repetitions, thus minimizing any lasting impact of extreme events; this suggests that, under optimal social conditions even these extreme events may not seriously harm a person over the long term. Is there clinical and/or research evidence that can help us understand how the worst kinds of one-off experiences *inevitably* play out, regardless of earlier or subsequent social circumstances? Can the authors refine or reconcile their competing concepts to address that question?

Ongoing subtle forms of neglect in the absence of gross neglect or violence

There is another area I would have been interested to hear more about, and that I think would have strengthened the authors' argument about the potential damaging effects of a child's ongoing family environment. The authors include parental neglect as one ongoing source of chronic stress, and consequently damage to a child. But they don't specifically address—though don't exclude—more subtle versions of ongoing neglect that characterize many children's existence and place them in a rather constant state of anxiety. The high incidence of the various forms of insecure attachment attest to how common this is, even in the absence of frank abuse or gross neglect. A very common example is parents who, due to their own troubled histories, or for other reasons, are preoccupied with the constant management of their own unstable moods and emotions. Some of these parents may appear, at a quick glance, to be emotionally involved with their children, but they don't respond to the child as the child really is; the child is used as a “self-regulating other” (Stern, 1985), or in some subtle but consistent way exploited or betrayed (see Freyd, 1996), even in the absence of gross abuse or obvious neglect; and the parent's engagement lacks attunement, empathy, and responsiveness to the child's thresholds, capacities, actual characteristics, emotional state, and what the child really needs at the moment. A common subgroup of such situations involves troubled parents who require their children to be caregivers to them, or whose constant neediness or emotional withdrawal communicates to the child that she had better take emotional care of the parent if she has any hope of getting care herself. Such children are likely to be continuously, anxiously attuned to their parent's feelings and needs, and may become compulsive caregivers—at great cost to their own freedom to actively engage the world in their own way, according to their own wishes and feelings, and ultimately at great cost to their social and emotional development (Bowlby, 1980). Such a child is likely to become what Sandor Ferenczi (1933) called a “nurse for life,” as well as having characteristics Tronick and Hunter describe in children who live in an ongoing state of fear. If the authors see these kinds of situations as doing similar kinds of long-term damage to more obviously traumatic situations, this would seem to reinforce both their concepts about how chronic stress is reiterated neurosomatically and also their understanding of the damage created by a child's ongoing interpersonal environment, separate and apart from singular severe events.

What counts as “trauma”

A final, brief, appreciative comment: many people have strong opinions about what experiences should and should not be called traumas. The authors themselves question the term. But “it is sticky,” they say, and they feel “stuck using it,” though they reframe the term's meaning within their “more developmentally informed perspective.” But their conceptual framework provides specific psychological and neurosomatic criteria to help assess the actual damage different events

cause in different contexts, rather than getting caught up in ideological disputes about terminology.

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