

## **Emerging Trauma Therapies: Critical Analysis and Discussion of Three Novel Approaches**

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*Trauma-related disorders and treatment have gained increasing attention in the last 3 decades, spurring the development of novel treatment approaches. Many of these are incorporated into clinical practice despite lacking a solid evidence base or unbiased analyses to facilitate interpretation of existing information. Although treatments might draw on elements from validated therapies, questions regarding the incremental efficacy of new approaches persist. Three novel therapies that might warrant further examination include energy psychology, yoga, and brainspotting. The emergence of novel, trauma-related therapies is examined, and the history, theory, practice, and evidence base of these 3 specific therapies are outlined. Directions for future work are discussed. Expositions such as this might serve as a helpful resource for clinicians seeking discernment regarding treatment for posttraumatic stress disorder.*

**KEYWORDS** *brainspotting, emerging therapy, emotional freedom technique, novel treatment, PTSD, thought field therapy, trauma, yoga*

The concept of trauma has gained increasing attention in the last three decades, both in the general population and among clinicians and researchers. Growing recognition of the impact of traumatic experiences—instigated, in part, by increasing recognition of psychopathology associated with experiences of military deployment, natural disasters, and terrorist attacks—has perpetuated a greater focus on treatment of trauma-related disorders. Although 60% to 90% of the population will sustain exposure to a traumatic

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stressor at some point, 7% to 9% of individuals will go on to develop posttraumatic stress disorder (PTSD), the diagnosis most closely linked to traumatic experiences (Foa, Gillihan, & Bryant, 2013; Kessler, Chiu, Demler, & Walters, 2005). This percentage can be more than twice as high for certain groups, such as war veterans, women, and minorities (Kessler, Sonnega, Hughes, & Nelson, 1995; Libby, Reddy, Pilver, & Desai, 2012). Further, PTSD has a high comorbidity rate of 88% (Emerson, Sharma, Chaudry, & Turner, 2009), is associated with increased risk of suicide (Kessler, 2000), and often significantly inhibits normal functioning for individuals due to high levels of distress.

An increased focus on trauma has spurred research on PTSD as well as development and refinement of treatment (Cukor, Olden, Lee, & Difede, 2010). There are various effective, evidence-based therapies indicated for treatment of PTSD, including exposure-based therapies, trauma-focused cognitive behavioral therapy (CBT), eye movement desensitization reprocessing (EMDR), and limited evidence for psychopharmacological treatment (e.g., Bisson et al., 2007; Bradley, Greene, Russ, Dutra, & Westen, 2005; Foa, Franklin, & Moser, 2002). Bradley et al.'s (2005) meta-analysis of 26 studies with 44 treatment conditions concluded that treatment for PTSD is highly effective, with 56% of those who received some measure of treatment and 67% of those who completed a treatment course no longer meeting criteria for PTSD. However, a majority of individuals might continue to experience "substantial residual symptoms" after treatment (Bradley et al., 2005, p. 225), and Cukor et al. (2010) reported that 33% to 44% of individuals do not benefit from treatment for PTSD. Further, Bradley and colleagues found that two thirds of those who initially experience recovery will relapse within 6 months.

It has been documented that PTSD is significantly difficult to treat; symptoms can persist for decades, and a high number individuals never seek or complete appropriate treatment, despite the chronic nature of the disorder (Foa & Meadows, 1997; Libby et al., 2012). The combination of increased focus and the unmet needs of the third of individuals who do not respond to treatment have created space for innovation in this field. In response, a growing number of novel therapies have emerged. Many of these clinical interventions correspondingly draw on the body of literature and theory that have emerged in trauma research and practice. Although these novel therapies might be widely used, there is a paucity of data and a general lack of understanding about a number of them.

In this discussion, the field of emerging trauma therapies is examined, including relevant questions regarding how these therapies seek substantiation and how practitioners can discern between new treatment options. In a more focused discussion, three specific emerging therapies are addressed: energy psychology (including thought field therapy, emotional freedom technique, and Tapas acupressure technique), brainspotting, and yoga. Each of these three emerging trauma therapies entails relatively foreign techniques or mechanisms, and, thus, perhaps holds the greatest risk for misunderstanding



or inappropriate implementation. Each treatment approach is discussed with corresponding examination of existing literature and evidence.

## CONTEXT AND TRENDS AMONG NOVEL THERAPIES

Emerging therapies for trauma span a broad range of approaches. A literature search yielded a number of surveys that reveal a wide diversity of novel therapies (see Bomyea & Lang, 2012; Cukor et al., 2010; Cukor, Spitalnick, Difede, Rizzo, & Rothbaum, 2009; National Research Council, 2012; R. Shapiro, 2010; Welch & Rothbaum, 2007). Discerning which treatments might be most worthy of consideration or attaining an adequate understanding of individual approaches can be difficult. Although studies are being conducted by private researchers, the Department of Veterans Affairs (VA), and the Department of Defense—sometimes catapulting novel therapies into greater use and access to research funding (Institute of Medicine, 2012)—few of the large array of novel treatments have empirical support for application as trauma treatments, failing to meet criteria for evidence-based practice (Foa & Meadows, 1997). In place of empirical evidence, novel treatments might rely on client and clinician reports of efficacy, pilot project case studies (Institute of Medicine, 2012), and the “soundness of their theoretical rationale and associated evidence” (Welch & Rothbaum, 2007, p. 475) to establish credibility.

As noted by Foa et al. (2013), the difficulty of discernment regarding treatment approach has been evidenced by the high percentage of clinicians who use or rely on treatments for PTSD “of unknown efficacy” (p. 65) within a clinician culture described as “antagonistic to evidence-based treatments” (p. 65) and training. This might be due in part to clinicians’ aversion to subjecting vulnerable clients to exposure therapy, which is a component of a majority of supported treatments for PTSD (Foa et al., 2013). Pignotti and Thyer (2012) reported that among Licensed Clinical Social Workers, who make up the majority of psychotherapy providers in the United States, 75% endorsed use of at least one “novel, unsupported therapy (NUST)” (p. 331). Of particular interest, the authors found that female clinicians who specialized in trauma were significantly more likely to use NUSTs, perhaps in part due to the proliferation of novel therapies for trauma, which are discussed here. Regarding usage of NUSTs, Pignotti and Thyer found that a majority of clinicians rated clinical experience above published research as the rationale for treatment selection. However, the process of discernment should entail clinicians conducting careful analyses of available information and evidence to integrate this with their clinical expertise—a practice that is often difficult to execute while maintaining professional responsibilities. Consequently, translational work and descriptive studies such as that presented here are needed to facilitate the discernment process for clinicians.

A large number of the emerging therapies for PTSD treatment seem, at first examination, to be outliers in the clinical field. Use of unprecedented techniques and nontraditional protocols might appear contrived and prevent these therapies from gaining legitimacy or alienate practitioners from examination or use of these techniques. Conversely, with the constant recycling of ideas and techniques in the therapeutic field, it is uncommon to find a practice that does not integrate elements of a previously tested treatment or theory on closer examination. These commonalities might, in fact, create a frame of reference and greater understanding of those therapies that initially seem unusual (Comas-Diaz, 2006).

EMDR, developed by Dr. Francine Shapiro, is of particular note in this discussion because the treatment shares similar beginnings with many emerging therapies for PTSD. At its inception, EMDR was a novel, untested practice that was “discovered” by a clinician, entailed the unique and odd-seeming practice of bilateral stimulation through eye movements, and was from the very first reports linked with claims of rapid, enduring resolution of PTSD symptoms (Greenwald, 1996; F. Shapiro, 2002). Over time, EMDR went from being practiced under the label of an “experimental treatment” (EMDR Institute, 2011) to establishment as an “evidence based practice in the treatment of trauma symptoms” (Lee & Cuijpers, 2013, p. 231) as indicated in guidelines from both the VA and the American Psychological Association (APA). Although many might still identify EMDR among the “emerging therapies” listed here, its acceptance and evidence base, despite a still-dubious mechanism, makes it a compelling case example (Lilienfeld & Arkowitz, 2008; F. Shapiro, 2012). It has perhaps cracked open the door of acceptance for new treatments, creating space for greater innovation and flexibility within the field.

Whereas varied theories and elements of evidence-based treatments serve to inform and ground novel therapies, certain themes can be found in common within this expanding field and link to a rapidly growing body of research on PTSD and trauma. Regardless of theoretical orientation or method of practice, neurobiological research and understanding appear to be at the cutting edge of therapy—and, therefore, many emerging trauma treatments—as reflected by the work of researchers and writers such as Seigal, Perry, Schore, Pollak, and Teicher. An element of the neurobiological focus is a fundamental shift in how the mind–body connection is viewed. This has incited increased integration of somatic elements into therapy and theory regarding how trauma is encoded in the mind and physical body, with corresponding implications for how to resolve its effects. Researchers and writers, such as van der Kolk, Ogden, Levine, Rothschild, and Scaer, are at the forefront of this movement from which dramatic implications for a shift in PTSD treatment have come.

Respected yet controversial researcher van der Kolk has made increasingly strong statements regarding the futility of talk therapy for those suffering



from PTSD, arguing that trauma is experienced and stored in subcortical areas of the brain, and resolution of PTSD, therefore, must happen through engagement of subcortical processes—namely, engagement of the physical body—rather than higher level cognitive processes engaged through talk therapy (Wylie, 2004). Pronouncements like these, which call the function of therapy as it has traditionally been conceptualized into question, are controversial indeed. However, the incorporation of these elements into many emerging therapies, including energy psychology, yoga, and brainspotting, could explain their wide use, as discussed in the following section.

## ANALYSIS OF THREE EMERGING THERAPIES

### Energy Psychology

#### DEFINITION AND HISTORY

Energy psychology is not one technique, but a collection of similar therapies that share the core strategy of combining physical interventions (related to acupuncture), which regulate energy fields and decrease hyperarousal, with mental engagement of a target issue or emotion through imaginal exposure to alter the distress response (Feinstein, 2008). These techniques include thought field therapy (TFT), the emotional freedom technique (EFT), and the Tapas acupuncture technique. TFT was developed by Callahan, a psychologist who drew on applied kinesiology and insights from Chinese medicine. Callahan discovered the technique in 1979 when his client tapped with fingers on a specific point on her body—which he later termed a meridian point—and a long-held trauma was spontaneously released. By the 1990s, his techniques were being practiced more widely and were even developed into other named techniques, including Tapas acupuncture technique. In 1995, Callahan's mentee, Craig, simplified the protocol to a universal algorithm of meridian points while focusing on a target, naming this approach the EFT. These techniques were unified under the Association for Comprehensive Energy Psychology in 1999, but are still practiced as distinct therapies (Mollon, 2007). Although the number of practitioners is unknown, the newsletter *EFT Insights* has hundreds of thousands of subscribers (Feinstein, 2008).

#### THEORY AND LINKS TO OTHER MODALITIES

Both Callahan (1985) and Craig (2007) posited that the body has energy fields, called *thought fields*, in which genetic or biological predispositions, trauma, energy toxins, and other issues cause blockages—or *perturbations*—in the body's energy flow (meridian system), or *qi*. These, in turn, are identified as the cause of all psychological problems (Karatzias et al., 2011; McCaslin, 2009). TFT and EFT mechanisms are linked to less acknowledged practices

such as acupuncture, muscle testing procedures from applied kinesiology, quantum physics, and paranormal concepts (e.g., morphic resonance), as well as supported therapies, including EMDR, exposure-based treatments, and building the therapeutic alliance (Mollon, 2007 cited by Feinstein, 2008).

EFT practitioners hold that by using manual stimulation at traditional acupuncture points while focusing on an issue associated with emotional distress, these blockages can be resolved permanently (Craig, 2009). Callahan stated that the thought field is attuned when a person focuses on the source of distress, permitting a clinician and client to identify and act on the corresponding perturbations through tapping, which adds energy to the field and corrects the imbalance (Callahan & Callahan, 2000). Although meridian points are compared to acupressure points in the literature, there is little mention of what separates them, aside from how they are acted on. It is noted that energy psychology's concept of *subtle energies* hails from an Eastern philosophy framework. It holds that the body's electrical systems and energy field exist and are "readily verified" (Feinstein, 2008, p. 199). Detractors, however, roundly refute this claim (e.g., McCaslin, 2009).

A secondary theory around EFT's mechanism is that focusing on memories or issues that trigger the brain's pathways of *limbic hyperarousal* (or fear response, which sustains PTSD), paired with simultaneous acupoint stimulation to disrupt arousal pathways in the amygdala and other areas of the brain, reduces or interrupts hyperarousal (Feinstein, 2008; Ruden, 2007). This, presumably, allows memories to be reconsolidated, or lose their power to trigger distress, and the pathway of elevated limbic response to be permanently reset. Building on this theory, Ruden (2007) posited that abnormal glutamate functioning in the amygdala is encoded with other neurochemicals in the triggered response pattern, functioning to "re-load, the pathway . . . immortalizing it" (p. 72). It might be possible to disrupt this reaction neurochemically; tapping is believed to induce activation of serotonergic pathways, which function to inhibit or disrupt this response pattern, a phenomenon that has been used successfully in studies on rodents. As such, TFT might activate serotonin distinct from the function of a selective serotonin reuptake inhibitor (SSRI) in the immediacy of its administration and its explicit link to trauma. Ruden argued that this theory is testable, and infusion of other serotonin-releasing agents should, therefore, produce similar results.

## PRACTICE

Callahan (1985) called TFT "the five minute phobia cure," originally using it to treat anxiety disorders, but later indicating the therapy for treatment of PTSD as well. Feinstein (2008) noted that energy psychology techniques can be used "in independent psychotherapy, as an adjunct to other therapies, and as a back home tool for emotional self-management" (p. 199). According to



various authors (Callahan, 1985; Craig, 2007; Karatzias et al., 2011; Ruden, 2007), the basic practice of energy psychology entails eliciting the distress and hyperarousal associated with a traumatic or disturbing memory or experience and then tapping on various meridian points on the face, body, and hands while experiencing this induced exposure; this works to reduce distress and facilitate processing.

There are specific protocols associated with use of each energy psychology practice, although all of them employ the basic technique noted earlier and ask clients to rate their subjective units of distress (SUDS) using scaling before and after tapping. Tapping could be done by the client, the therapist, or both. Callahan's procedure indicates specific sequences, called *algorithms*, that vary in response to client presentation (as cited in McCaslin, 2009; Pignotti, 2005). Craig's protocol includes a "set up" (2007; Craig & Craig, 2014) of setting a focus and stimulating one meridian point, followed by tapping six to eight times on a prescribed 12 points while reciting an affirmation, such as, "Even though I have this problem, I deeply and completely accept myself" (Craig, 2007; Craig & Craig, 2014); after this, clients might count, roll their eyes, and hum a song. These practices following a client's affirmation are believed to engage both hemispheres of the brain in greater processing (Gaudio, Brown, & Miller, 2012). Rounds of tapping are continued to achieve reduction of SUDS and elimination of hyperarousal.

Because the basic technique is somewhat formulaic, it can be learned and practiced by therapists or individuals with ease (Craig, 2007). There are myriad training resources available for purchase and free online as well as from trainers. The Association for Comprehensive Energy Psychology (ACEP) encourages certification in either EFT or Comprehensive Energy Psychology (CEP). Each certification process entails multiple levels of 2-day trainings and optional certification, costing several hundred dollars for trainings to thousands for certification. (ACEP, n.d.).

#### EVIDENCE OF EFFICACY

As even energy psychology proponent Feinstein (2008) noted, energy psychology is "exceedingly controversial" and "relies on unfamiliar procedures adapted from non-Western cultures, posits unverified mechanisms of action, and early claims of unusual speed and therapeutic power ran far ahead of initial empirical support" (p. 199). Energy psychology has not yet built the body of empirical research required to scientifically establish its efficacy, although an "unusual amount" (Feinstein, 2008, p. 202) of gray literature, such as anecdotal reports, theses and dissertations, uncontrolled investigations, and unpublished research, exists in support of the technique (Feinstein, 2009). It would appear that interpretation of the existing body of literature can bend two ways, with ardent supporters and vehement detractors calling on

the same studies to support their claims in this debate between entrenched, opposing sides.

Meta-analyses (Feinstein, 2008, 2009, 2012; Karatzias et al., 2011) have found mixed preliminary evidence in this alternative body of literature suggesting EFT and TFT might be effective treatments. Feinstein (2012) stated that studies in the last 5 years have provided more significant evidence in support of these treatments, including four randomized, controlled trials and five outcome studies, as well as studies that found EMDR and EFT to have similar efficacy and that use of EFT alongside CBT increases effect sizes. Other findings have shown support for use of EFT with veterans (Church, 2010; Church et al., 2013) and adolescents (Church, 2010). EFT has also been found to shorten treatment time when used as an adjunctive therapy and as lacking any evidence of harm (Flint, Lammers, & Mitnick, 2006).

In attempting to understand the mechanism of tapping, links have been made to studies that show that coordination of visual and manual tasks facilitates more vivid memory recall (Sapkota, Pardhan, & Van der Linde, 2013) and studies substantiating the positive effects of acupuncture and acupressure (Chung, Chen, & Yeh, 2012; Hollifield, Sinclair-Lian, Warner, & Hammerschlag, 2007). Linkages like these, Feinstein (2009) argued, support the concept that individuals might benefit from tapping, regardless of order, number, selection, or method of stimulating acupoints. Feinstein noted additionally that EFT has reached the minimum threshold for designation as an evidence-based treatment, having met APA criteria through the existing evidence, although this claim has not been met with such designation by the APA.

In contrast, Gaudiano et al. (2012) pointed out EFT's lack of valid scientific bias, efficacy, or superiority over other treatments and identified many characteristics of pseudoscience in a literature review that was based on several of the same studies reviewed in Feinstein's (2009) analysis. Detractors, such as Pignotti (2005), McCaslin (2009), Waite and Holder (2003), and Devilly (2005), also flatly refuted efficacy claims and pointed to conflicts of interest as well as skewed interpretation of data and questionable source material, including faulty study designs and a lack of rigorous peer review, thus attributing the positive effects of energy psychology found earlier to placebo or mechanisms from more proven treatments. Further, McCaslin (2009) discredited down-regulation of the amygdala, stating functional magnetic resonance imaging (fMRI) studies have shown similar effects across therapies and, as a result, findings are not attributable specifically to EFT. McCaslin also challenged tapping, equating it with distraction, and the APA went so far as to censor EFT as a valid therapy in 1999 and upholds this still today (Feinstein, 2009).

Regardless of the controversy, it has been observed that large numbers of practitioners implement energy psychology with clients, with 43% of clinicians in one study reporting frequent use of these techniques (Gaudiano et al.,



2012). However, these same clinicians were also found to be more reliant on intuition and therapeutic eclecticism, supportive of alternative treatments, and upholding of erroneous health beliefs, and to have lower scores on a test of critical thinking. As the debate stands, clinicians might well be able to support a decision for or against the use of these techniques dependent on clinical expertise, although more generalizable and decisive data remain to be published.

## Yoga

### DEFINITION AND HISTORY

Widely acknowledged in other contexts, yoga's healing and transformative potential have just begun to be studied formally in the United States. Although yoga is a novel therapy for treatment of PTSD, as a tradition and practice, it has a rich history across cultures and has been found to create improvement in measures such as quality of life, emotional well-being, and stress management (Spinazzola, Rhodes, Emerson, Earle, & Monroe, 2011). As indicated earlier, growing recognition of the impacts of traumatic experiences on the body and acknowledgment of the limitations of cognitively processing trauma have created a need that yoga might be able to fill as an adjunctive treatment (Emerson, as interviewed in Douglas, 2012). van der Kolk, the neurobiological researcher who led this charge, described his research on the brain as having led him to yoga as a trauma therapy. van der Kolk (interviewed in Wills, 2007) explained that in looking for ways to help clients regulate hyperarousal, feel safe within their bodies, and be more oriented in time and space, yoga emerged as a therapeutic practice. This has guided his efforts to examine and promote yoga as a trauma therapy.

### THEORY AND LINKS TO OTHER MODALITIES

The theory of why yoga works as a therapy for PTSD is rooted in neurobiological research that indicates traumatic experiences leave lasting "imprints" in an individual's sensory and hormonal systems. As van der Kolk (2009) explained, this causes people to experience hyperarousal and become "terrified of the sensations in their own bodies" (p. 12), continuously experiencing a traumatic state, which causes them to lose their orientation to themselves and the world. Living in this state of emergency triggers the release of neurochemicals, which are meant to enable the body to engage in action, but these overwhelmed individuals instead remain paralyzed and unable to react. Yoga is believed to help traumatized bodies take effective action and regain natural movement through physical practice.

Practitioners of yoga develop awareness and mastery of their bodies, allowing them to reorient themselves and enabling them to tolerate distress

through meditation and mindfulness; these increase awareness of the impermanence of negative feeling states. This enlarged ability to observe and tolerate discomfort while maintaining a feeling of safety is thought to serve as a “positive imprinting process.” It also allows individuals to “befriend” the bodies in which trauma has been experienced (van der Kolk, 2009, p. 13). Researcher Khalsa (2007) stated that control of target actions, such as the breath or body postures, generates changes in the brain, limbic system, and hormone-related stress cycle, facilitating a focus on the present. This is congruent with Levine’s (2010) somatic theory, which indicates awareness of body memory and sensation in an integrative approach to processing trauma.

#### PRACTICE

There are many schools of yoga. Kripalu yoga, Hatha (gentle) yoga, and Yoga Nidra (yogic sleep—renamed iRest for implementation with veteran populations) are among those that have been adapted to provide trauma-sensitive instruction (Pollack, 2010; Spinazzola et al., 2011). Although each might have different components, most forms of yoga implement a combination of meditation and mindfulness, breath work, and physical postures of varying difficulty with trauma-sensitive modifications.

Yoga as a PTSD therapy is accompanied by an expectation that the yoga specialist is a part of the clinical team and should be integrated and supervised accordingly (Emerson, cited in Douglas, 2012). As such, The Trauma Center in Boston has spearheaded a movement to provide specific preparation for specialists, entailing a 110-hour trauma-sensitive yoga teacher training, costing around \$4,000 (The Trauma Center, 2007), with similar programs springing up nationwide (Sparrowe, 2011). Other offerings include a 3-day training on integrating yoga as a somatic-based psychotherapy into practice using chair yoga, breathing, and meditation; these often cost several hundred dollars and include a certification option (Lutz, 2010).

As identified by Emerson et al. (2009), who have implemented the yoga program at The Trauma Center under Van der Kolk’s direction, adaptations of common yoga practices fall under the five domains of environment, exercises, teacher qualities, assists, and language. The environment could be modified to limit distractions and increase a sense of safety (e.g., students are not asked to practice with their backs to the door). Exercises are paced carefully and given with modification options to avoid triggering students and to increase personal awareness and choice. Teachers practice slowly and clearly to create a feeling of safety, and *assists* (physical modifications of others’ poses) are rarely done, and then only with prior permission. Language is significantly modified from normal instruction to reflect a paradigm of choice and to engender a sense of community and support among



participants. Practice is often weekly or more frequent, with indication for personal practice at home (Emerson et al., 2009).

#### EVIDENCE OF EFFICACY

Like energy psychology techniques, a rigorous evidence base has yet to be established for the use of yoga as a PTSD treatment. This evidence base might be emergent, however, as program development and data collection are underway. Preliminary studies and meta-analyses have overwhelmingly found that yoga as an adjunctive intervention has significant effects on alleviating PTSD and could be provisionally considered consistent with definitions for evidence-based practices (Brown & Gerbarg, 2011; Cukor et al., 2009; Emerson et al., 2009; Kirlin, 2010; Libby et al., 2012; Sparrowe, 2011; Spinazzola, Rhodes, Emerson, Earle, & Monroe, 2011; Telles, Singh, & Balkrishna, 2012). The mechanisms of yoga have been independently studied, and a meta-analysis conducted by Spinazzola et al. (2011) found wide support for the positive impacts of various components. These benefits include the positive effects of breath work in improving emotional and biological regulation; the influence of meditation and mindfulness in decreasing ruminations, anxiety, depression, stress, and substance abuse; and the impact of asanas (postures) associated with positive changes in the neurocognitive aspects of PTSD, such as present-focus, safety, and equalization of the body's biochemical systems (Spinazzola, 2011; Kirlin, 2010).

Efficacy for yoga as a treatment has been found among specific client populations, including veterans (Brown & Gerbarg, 2011; Johnston, 2011; Stankovic, 2011); survivors of natural disasters (Descilo et al., 2010); adolescents (Lilly & Hedlund, 2010); and women who suffer from complex, treatment-resistant PTSD (Sparrowe, 2011). In fact, because diagnosis of PTSD in U.S. veterans is increasing, the VA has initiated implementation of yoga and funded research on its effectiveness (Lutz, 2010; Zimmerman, 2010), with one study finding that the majority of VA PTSD programs implement yoga and mindfulness practices as part of therapy (Libby et al., 2012). Research has not stopped there; 13 yoga research trials are listed on the governmental trials funding page alone (see [www.trials.gov](http://www.trials.gov)), and there are multiple dissertations and theses on yoga treatment of trauma as well (e.g., Dixon-Peters, 2007; Gulden, 2012; Johnston, 2011; Kirlin, 2010; West, 2011). These studies are not without flaws; many trials have small participation numbers, and van der Kolk (cited in Wills, 2007) reported his yoga studies have had the highest dropout rates of any studies he has conducted. This might be linked to the commonly held bias toward yoga as alternative, spiritual, or new-age, although efforts like that of the VA could contribute to normalization of yoga as an accessible practice (Libby et al., 2012).

A need for methodologically sound empirical studies persists, as does the need for dismantling studies to determine the most effective practices among the wide variations between schools of yoga (Kirlin, 2010). Although the literature seems to indicate general and fairly unified support for use of yoga as an adjunctive treatment for PTSD, the lack of critical controversy over yoga's efficacy might be largely due to its recommendation as an adjunctive rather than primary treatment modality. Indeed, much of this support is based on "gray literature" similar to that used to establish efficacy of energy psychology; if this emphasis was to shift toward yoga and other body-focused therapies as primary therapies (as Van der Kolk seems to support), the consensus might well move away from support of yoga as a treatment.

## Brainspotting

### DEFINITION AND HISTORY

Among the newer of novel therapies for treating PTSD is brainspotting (BSP), a brain-based dual-attunement model of treatment (Grand, 2013). Originally a practitioner and great proponent of EMDR, in 2003, Dr. David Grand discovered BSP while conducting slowed eye movements with a trauma client. Although bilateral eye movements are a central aspect of EMDR therapy, Grand was modifying the normal pace of this practice when he stopped motion and had his client hold her gaze in a spot where he noticed a wobble movement in her eyes. Witnessing the resultant rapid processing reaction, which cleared his client's previously inaccessible trauma, Grand felt he had made a breakthrough in discovering a new therapeutic technique (Grand, 2013). Grand developed the treatment model from there, calling it brainspotting. Psychologist Lisa Schwarz trained with Grand, later becoming a collaborator and developing Grand's BSP model beyond its original form, naming it resource brainspotting for treatment of clients with severe attachment and dissociative disorders (D. Grand, personal communication, May 2013). The resultant fully articulated resource model BSP incorporates techniques applicable for all clients. Although BSP does not enjoy the body of research EMDR has amassed—in fact, there remain to be any formally evaluative studies published on this treatment—many EMDR practitioners and other clinicians have "enthusiastically adopted" the treatment, reporting high rates of success (R. Shapiro, 2010, p. 119). To date there are more than 6,000 clinicians trained in the model worldwide (Grand, 2013).

### THEORY AND LINKS TO OTHER MODALITIES

BSP claims a brain-based mechanism and emphasizes the importance of *dual attunement* of the therapist with the client and the client's neurological



processes (accessed through location of and work with relevant eye positions). Similar to other therapies, clients are asked to initiate activation around a problem issue. The therapist then locates an associated eyespot with the client in which the client processes while listening to bilateral music.

The theoretical explanation of BSP is that brainspots, or relevant eye positions, are physiological subsystems related to the energetic and emotional activation of a trauma and facilitate “direct access to the autonomic and limbic systems” (Grand, n.d., para 4). Processing in these brainspots in a supported context is thought to facilitate rapid discharge and resolution of traumatic experiences. Work with brainspots and bilateral stimulation of the brain are posited to down-regulate the amygdala, facilitate homeostasis (Scaer, cited in Schwarz, 2013), and result in deconditioning of maladaptive response patterns, thus enabling the body’s innate tendency toward self-healing and release of *traumatic capsules* (Schwarz, 2013). The technique “processes and dismantles the symptom, the underlying trauma, the somatic distress, and the dysfunctional beliefs at the reflexive core” (Brainspotting International, 2009, para 5). Further, BSP has been described as utilizing internal resources of strength and groundedness, allowing pendulation between positive states and trauma states to contain the processing of trauma (Grand, 2013; L. Schwarz, personal communication, May 2013).

Additional theoretical perspectives have been drawn on to support this proposed mechanism; a recent article published in *Medical Hypotheses* presented a highly complex descriptive model for BSP’s neurological pathway (Corrigan & Grand, 2013). Research of the notion that minute eye movements—called microsaccades—are associated with focus and internal processing has been presented as support for the concept that attunement to physical cues, such as eye movements, is a way to access stored trauma in specific eye positions (Martinez-Conde & Macknik, 2007). Research regarding the adaptive orienting response in relation to eye movements has also been drawn on, bolstering the theory that eye movements are implicated in the processing of significant events and, therefore, a means of access as well (Corrigan & Grand, 2013).

Although many comparisons have been made between BSP and EMDR, D. Grand (personal communication, May 2013) asserted that, aside from engagement of the eye as an element of treatment, the mechanisms of BSP are essentially different from that of EMDR. BSP has instead been identified as drawing more heavily on theories such as Levine’s somatic experiencing, due to BSP’s engagement of and attunement to the body and the concept of pendulation between trauma and resource states (called *vortexes*; Levine, 1997). Corrigan and Grand (2013) posited that BSP is the most “subcortical” (p. 760) of all treatments, allowing clients to access deeply stored trauma and for action to “anchor at the midbrain” (D. Grand, personal communication, May 2013) without disruption from more cortical processes incited by many other treatments. In this way BSP

has been additionally aligned with current theories and research regarding neurological, body-oriented, and somatic engagement in trauma therapy.

#### PRACTICE

BSP has been established as an integrative model, with the expectation that clinicians will incorporate the therapy into their modality of practice. As such, there currently is no prescriptive treatment protocol. Rather, clients are asked to focus on an issue and “activate” themselves regarding that issue, allowing themselves to engage difficult emotions or affect. Clients then identify where they feel the activation in their bodies, provide an associated SUDS rating, and are guided through steps to locate a relevant eye position for processing. There are several methods for locating, or mapping, brainspots on the x, y-axis, including *outside window*, in which a finely attuned therapist looks for any physical cues while sweeping across the client’s gaze with a pointer, and *inside window*, where a client is able to determine location of the eyespot through his or her own identification of increased distress (Grand, 2013). Another method, one-eye BSP, is used with specialized goggles that block a portion of the field of vision and allow clinicians to find the more activated eye and the *resource* eye, or the side that feels more calming and stable to the client. Gaze spotting entails identification of brainspots clients naturally gravitate toward while processing emotional content (Grand, 2013). Additional methods include *z-spotting*, which engages a “third dimension” through modulating the client’s brainspot on a near–far, or “*z-axis*”; and *rolling* BSP, which is employed by slow movement of the pointer or finger that a client tracks with his or her eyes, stopping at each identified brainspot for processing (Grand, 2011, 2013). Work with *resource* eyespots has also been fully integrated into treatment.

Once this process is initiated, clients listen to bilateral music on headphones at a low volume while in their eye position, and they often experience an intense flow of memories, emotions, and associations. This process can take place without extensive verbal exchange, and clients are asked to remain open and without expectation, which Grand called *focused mindfulness* (Grand, 2011). Clients process until their SUDS score is lowered, and then are asked to reinstate activation as much as possible, called “squeezing the lemon,” to process to completion. Length of treatment is dependent on the extent of traumatic experiences (Grand, 2011).

Although this represents the basic methodology, many other techniques are used in BSP. BSP instruction entails 2-day trainings (or using a training DVD) for each of three phases, with an option to pursue certification through supervision. Each training costs several hundred dollars (less for DVDs), with additional costs for certification (EMDR International Association, n.d.; Grand, n.d.).



## EVIDENCE OF EFFICACY

As there are not yet any studies supporting or rejecting BSP's efficacy, anecdotal evidence, treatment information, and soundness of theory constitute the available material for discernment regarding this therapy. BSP practitioners report that their clients experience "fast, deep response and move quickly through issues" (R. Shapiro, 2010, p. 119), and some EMDR practitioners have described BSP as a "greater precision tool than EMDR" (J. Ryan, personal communication, April 2013) and "more containing and stabilizing for traumatized clients" (L. Schwarz, personal communication, May 2013). Additionally, several research studies regarding BSP are currently underway, including a randomized trial involving fMRI imaging in relation to BSP and another randomized study comparing EMDR with BSP; results are forthcoming (D. Grand, personal communication, May 2013).

In the Corrigan and Grand (2013) article, the authors highlighted research that provides evidence for BSP mechanisms. These included studies that indicated that blinking, which is one cue used to locate brainspots, has been associated with altered brain function and processing. The tendency toward spontaneous eye movement during searching thought processes, followed by gaze fixation when information is found, have appeared to further support proposed connections between eye movements and internal processing (Corrigan & Grand, 2013).

As evaluations and critiques of this therapy are yet to be published, identification of detractors is not possible. Confounding consideration of BSP at this stage is the fact that all material regarding treatment comes from its originators and collaborators, implying inherent bias. It remains to be seen if this therapy will persist to establish a solid evidence base.

## CONCLUSION

New emerging therapies and novel techniques will certainly continue to exist at the periphery—and, indeed, in common practice—of trauma treatment. The process of gaining acceptance as an evidence-based treatment is intensive and can be further inhibited by the fact that scientific research institutions seldom fund unproven treatments, limiting opportunity for expansion in the field (van der Kolk, cited in Wylie, 2004). However, innovative treatments persist and are implemented with legions of clients, amassing anecdotal and clinical evidence of relative efficacy.

Unfortunately, the opportunity costs inherent in emerging treatments are not only born by clients, but considerable financial cost associated with training for many of these therapies is covered by clinicians looking to expand their expertise (McCaslin, 2009). The limited time and funds available to clinicians only increase the importance of committing to well-chosen treatment modalities.

As clinicians face the daunting task of discerning which treatments warrant implementation and which might be best renounced, translational studies and aggregation of existing sources are needed to tip the balance in favor of treatment selection based on information rather than intuition. Still, with many treatment options, including those in this analysis, clinicians will be hard-pressed to discover a definitive evaluation of efficacy and might need to rely on clinical judgment ultimately to reach their own verdict.

In regard to research and development of new approaches, critical discussion is needed to address the process by which treatments gain legitimacy and the validity of outcome measures that carry the most weight in consideration of efficacy in this field. Dismantling studies are more broadly prescribed to enlarge our understanding of what common elements serve particular populations and diagnoses, and greater attention to generalizability, including application of treatment with diverse populations and cooccurring disorders, is of increasing importance. Finally, let Pignotti and Thyer's (2012) findings of widespread, but unexamined, use of novel treatments by trauma therapists serve as a cautionary note. The field of trauma specialization might necessitate innovation, diversity, and the willingness to straddle conflicting findings pertaining to controversial treatments. However, unstudied application of untested treatments ought not to supplant critical judgment in work with this most vulnerable of populations.

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