



15 years ESJ
Special edition

Equine-Assisted EMDR, DBR Therapy, and the Introduction of Animal-Assisted Interweaves

Sarah Jenkins, MC, LPC, Cpsychol

EMDRIA Approved EMDR Training Provider and Consultant

[Doi:10.19044/esj.2025.v21n40p56](https://doi.org/10.19044/esj.2025.v21n40p56)

Submitted: 20 March 2025

Accepted: 14 May 2025

Published: 07 July 2025

Copyright 2025 Author(s)

Under Creative Commons CC-BY 4.0

OPEN ACCESS

Cite As:

Jenkins, S. (2025). *Equine-Assisted EMDR, DBR Therapy, and the Introduction of Animal-Assisted Interweaves*. European Scientific Journal, ESJ, 21 (40), 56.

<https://doi.org/10.19044/esj.2025.v21n40p56>

Abstract

Despite there being a wide range of models for providing animal-assisted interactions in mental health settings, there is still no universally accepted standard of practice for providing trauma treatment, particularly for those with complex trauma. With this in mind, this article introduces a conceptual framework for partnering with animals via two specific phase-based trauma treatment models. To further promote the mind/body connection, especially in the healing of complex trauma, it is the author's supposition that two trauma treatment models, specifically EMDR and Deep Brain Reorienting (DBR) ® therapies, are highly suitable for collaborating with animals, all whilst maintaining treatment fidelity as well as client and animal welfare. In particular, the author explores the clinical rationale behind and examples of partnering with equines and canines through what the author has termed "Animal Assisted Interweaves" (AAI) alongside the phased trauma treatment approaches of Eye Movement Desensitization Reprocessing (EMDR) via EquiLateral: The Equine-Assisted EMDR Protocol ® as well as Deep Brain Reorienting (DBR)®.

Keywords: EMDR, DBR, Trauma Treatment, Equine-Assisted Therapy, Animal-Assisted Therapy

Introduction

Love Dogs

One night a man was crying,
Allah! Allah!
His lips grew sweet with the praising,
until a cynic said,
"So! I have heard you
calling out, but have you ever
gotten any response?"

The man had no answer to that.
He quit praying and fell into a confused sleep.

He dreamed he saw Khidr, the guide of souls,
in a thick, green foliage.
"Why did you stop praising?"
"Because I've never heard anything back."
"This longing
you express is the return message."

The grief you cry out from
draws you toward union.

Your pure sadness
that wants help
is the secret cup.

Listen to the moan of a dog for its master.
That whining is the connection.

There are love dogs
no one knows the names of.

Give your life
to be one of them."

- Rumi

To consider partnering with animals, it's crucial to provide a brief overview of AAT as a whole. Contrary to popular belief, AAT is not a therapeutic modality in and of *itself*. Instead, AAT is defined by the *treatment*

approach chosen by the human service professional, which determines the lens through which interactions with the animals are viewed. Animal-assisted interactions are introduced to help facilitate specific treatment goals aligned with the provider's psychotherapeutic approach. Subsequently, it is also recommended that those who provide animal-assisted interactions within the context of psychotherapy adopt "therapy first" language, as exemplified by what the author has termed Equilateral: The Equine-Assisted EMDR Protocol ® aka Equine-Assisted EMDR (EA-EMDR).

The partnership between humans and animals to enhance mental and physical well-being and achieve therapeutic objectives is not a novel concept. Child psychiatrist Boris Levinson is widely regarded as the pioneer of animal-assisted therapy and championed the inclusion of animals in child psychotherapy as early as 1997. Nevertheless, the field of Animal-Assisted Therapy (AAT) still faces challenges such as inconsistent terminology, varying definitions, and differing practice guidelines. Contrary to popular opinion, as opposed to merely introducing an animal into the therapy room as a "therapy animal," interactions with animals are to be delivered by formally trained human service professionals who stay within their scope of practice to meet clients' physical, social, emotional, or cognitive goals, while also ensuring client and animal welfare (Jegatheesan, B. et al, 2014).

It is also crucial for clinicians to discern that there are different designations, such as service animals, emotional support animals, and therapy animals (Chandler, 2017), each with its own specific guidelines, legal ramifications, associated restrictions, and responsibilities. Furthermore, in addition to meeting the standard of practice within their chosen field, providers (such as social workers, counselors, psychologists, medical providers etc.) must maintain a working knowledge of the animal's health, and behavior as well as be able to be able to readily identify and attune to indicators of increase stress in the animal (Jegatheesan et al, 2014) in order to intervene appropriately. Furthermore, as recommended by the American Counseling Association (ACA) (Stewart et al, 2016) Animal Assisted Therapy core competencies help to ensure not only clinically sound but also ethical practices that prioritize the welfare of both animals and clients.

It cannot be emphasized enough that as with *all* animal-assisted services, practitioners must prioritize the welfare of *both* the animal and the client. Practitioners are reminded that animals are not merely "tools" to be "used" in clinical work but are to be considered co-facilitators and mindful participants. It is unethical to disregard an animal's distinctive and species-specific behavioral cues, especially of distress, and to do so in service to the human mammal's healing process having "taken priority." *Practitioners are advised to receive specialized training to prioritize the well-being of both clients and animals. Such training should cover the identification of and*

addressing of species-specific needs, distress cues, and potential defensive actions.

Conceptualizing Complex Trauma

More often than not, in clinical practice, clients with trauma histories do not present with a single traumatic incident (Kessler, 2000) as an example of “simple” PTSD (Post Traumatic Stress Disorder). With extensive histories of interpersonal traumas that occurred at various developmental stages and across different categories, including, but not limited to sexual, physical, emotional, maltreatment, and neglect, and often with early life onset (Van der Kolk, 2005), a “complex form of post-traumatic disorder [presents] in survivors of prolonged, repeated trauma” (Herman, 1992) exists, commonly referred to as “complex PTSD.”

Even with the diagnostic criteria for PTSD identified in the current DSM V, one can consider that a PTSD diagnosis is also described by leaders in the field as still not being comprehensive *enough* and does not provide the entire clinical picture when it comes to developmental trauma. Furthermore, trauma, especially that experienced in childhood, can contribute to a myriad of symptoms that may or may not cluster into and meet full criteria for PTSD, and could be also mistakenly identified as solely “co-occurring” symptoms or diagnoses such as depression, dissociation, instability of affect, self –injury attachment challenges, somatic issues, impulsive behaviors as opposed to part of the whole picture.

Two distinct subtypes of Post-Traumatic Stress Disorder (PTSD) have been proposed in both neurobiological and clinical research. These subtypes are the reexperiencing/hyperaroused PTSD subtype and the dissociative PTSD subtype (Lanius et al., 2010). Each subtype has a unique impact on an individual’s ability to self-regulate. Evidence suggests that the dissociative subtype exhibits a more pre-frontal cortical “overmodulation” of affect (Lanius et al., 2010) and associated limbic activation. In contrast, the reexperiencing/hyperaroused PTSD subtype is characterized by the opposite, whereby the pre-frontal cortical region impact on limbic activation is limited.

Keeping in mind the neurobiology of trauma, clients with complex trauma and dissociation often present with extensive histories of treatment. They might enter the therapy room feeling exasperated, having exhausted all their options and feeling despondent that “nothing seems to help.” Those enduring unhealed complex trauma may find it difficult to maintain daily life, relationships, or simply “hold on.” They often grapple with dissociation, suicidal ideation, addictions, and various substitute actions to numb their inner experiences. In addition, the impact of their unhealed developmental traumatization i.e., what did occur in the past, but especially what did *not* occur i.e. neglect, abandonment, misattunements, and lack of emotional and physical

connection from the caregiver, can continue to be experienced as so fragmented, so non-realized, that the material cannot be assimilated and brought to resolution. As is the nature of unhealed trauma, these implicitly stored experiences continue to be triggered and reenacted through the perspective of the unhealed past, both in client's internal world as well as through patterns in their external world.

Methodology of Study

This paper provides a discussion of clinical integration with a client case as compared to a formal research study. As such, insight is shared from a conceptual framework and clinical observation of this, as compared to the conduct of a clinical trial or controlled study. It is from such observation and clinical integration that scientists and practitioners continue to enrich insight gleaned from that of clinical trials and controlled studies.

Staged Trauma Treatment and Complex Trauma

A fundamental principle in working with clients experiencing complex developmental trauma is that achieving a heightened sense of internal and external stability is paramount for the eventual processing of unresolved, deeply ingrained pain that manifests in their current symptoms and distress. Within the field of complex trauma and dissociation, it is widely acknowledged and standard practice that healing from trauma entails distinct stages. Consequently, numerous leaders in the trauma recovery field have championed an overarching three-stage model of trauma recovery. A phased approach was originally proposed by Pierre Janet (1) for the treatment of PTSD, which encompassed containment, stabilization, and symptom reduction; modification of traumatic memories; and integration (Van der Hart et al, 1989). The significance of employing a staged approach to the treatment of complex trauma was elucidated by Judith Herman (1992), who outlined a three-stage process of stabilization, traumatic memory processing, and ultimately reconnecting and reintegrating into life.

Albeit, while the staged approach to the treatment of complex trauma, may be presented as if in a "linear" progression, those well-versed in working with complex trauma are also well aware that the process is more aptly described as a circular one. Clients who present with complex trauma may vacillate in their capacity to process, whereby it may be necessary to *return to* stabilization interventions, not only in session but also in between sessions and in response *to* what was processed. Furthermore, no matter the underlying theory of processing that *drives* the phased model of trauma therapy that one utilizes, there will *still* unfold a dance in the clinical work, whereby the clinician and client must regularly ascertain if there is a need to shift one step back, and return to stabilization. There must also be an ongoing evaluation of

how and *if* processing has occurred, to then ascertain when to then step forward to processing again. Furthermore, the phased model includes an ongoing consideration of how trauma memory processing and the integration of trauma memories impacts the client's current level of functioning in and returning to daily life.

"Rose"

"Rose" came into the author's office with a presentation of complex trauma, having reported a lack of treatment success in the past. Rose described her now aging parents as "good people," and immediately, as if quickly throwing a dart on a dart board, hoping that it would land somewhere in the vicinity of me, blurted out "Dad got angry sometimes, revealing a childhood history of emotional, physical, and medical neglect, as well as physical and verbal abuse and domestic violence.

Rose's focus on the external over being able to get in touch with her internal experience was reflected in a seemingly compulsive focus on only her daily life. It was clear that the behaviors she engaged in *now* were defensive actions from the past i.e. bouts of anger, shut-down, and jags of feeling tormented by a depth of crying, and later deep shame, that brought her to her knees. She came to therapy not knowing why she was crying, all day and all night, and in response to the recent death of a pet, "I don't know what's wrong with me. It doesn't make sense" and as a high-level executive, a self-described "workaholic," she just wanted to "be able to focus on my job." There was, literally, no expressed or implied awareness of how the death of her beloved pet had put her system into a complete state of overwhelm from the *past*.

The magnitude of Rose's non-realization coupled with a lack of tolerance for calm, history of eating disorders, social isolation, and minimal coping skills served to ensure that the magnitude of her internal and external distress was not going to settle without her getting support. She was stuck in a constant internal push and pull between trying to just "do life," while at the same time, feeling the pull of a traumatic history that weighed on her, a forty-year anvil that planted itself on her heart, threatening to crush her with every shallow breath that she took.

The waves of overwhelm came in on her and she would go into such a complete state of reliving, that to cope, she had to stay completely unaware of her internal experience. From her perspective, how could she do daily life, any other way? But, her childhood probably had "nothing to do with it." She felt completely separate from it.

Turning Towards the Intolerable

The mind-body connection, and one's ability to turn inwards *towards* one's internal experience, to have the ability to engage in trauma processing

without reliving, is also key to the trauma processing that is described as following stabilization. Nevertheless, a “profound incapacity for full orienting to traumatic events” (Corrigan et al, 2024) especially impacts those whose traumas still haunt them, and the actual dropping inside and turning towards the distress *is* threatening in and of *itself*. There can exist a conflict, in the form of an “orienting away from the sum of this information, an unconscious turning away from it” (Corrigan et al, 2024) that does not comprise a conscious “resistance” or “block” to accessing, but rather a neuroanatomically driven dissociative process.

In childhood, one’s internal experience of being not only physically but psychologically “held” by “other” in the external world, as in the attachment relationship, is foundational and supports a greater ability to be present to one’s internal world, to feel that one exists, or as yoga scholar Stephen Cope (2001) and also poetically describes as “feeling felt.” Similarly, it has been suggested that it is in response to “physical and physiological attunement that children sense that they are protected, cherished, and safe. Speculatively, this foundation solidifies the child’s connection to the earth and confidence to emerge from the co-regulated bond, eager to explore as a separate and capable organism worthy of the social connection crucial for survival and reproduction later in life” (Kearney and Lanius, 2022).

But, in contrast, for the traumatized child, a mammal that needs attachment for survival, the full knowing, the full realization, the fully integrated “truth” and pain of the associated disturbance of the attachment disturbances cannot be fully integrated. The interpersonal nature of developmental trauma, comes into play for in service to *preserving* attachment with one’s parents, also develops an internalized conflict between the drive to attach as well as the defense *against* it. The range of affect, as well as the defensive actions that were essential then still influence the client’s system now via strategies that behave seemingly in opposition to each other, but were in fact compelled by biological imperatives and the compulsory “shared” goal of the child’s survival. The realization, “with full personification and presentification, that their parents have always rejected them, never loved them, and they have always been unbearably lonely is intolerable (van der Hart et al., 2006).

The impact of insecure attachment on the mind-body connection is hypothesized to have both a “somatic sensory component and a cascading effect on the ontogenetic development of the higher reaches of the brain, including emotion regulation, motor planning, abstract thought, sense of time, agency, curiosity, and dynamic social relationships” (Kearney and Lanius, 2022). Given this, and the emphasis on the mind-body connection in healing trauma, with the foundational impact of insecure attachment, remains an underlying challenge in how to invite clients to explore their internal

experiences and drive to connect. There is a simultaneous turning away from it and an inability to process the “underlying and diffuse pain of absence, aloneness, and non-connection” (Corrigan et al., 2024).

Therefore, in clinical practice, a seemingly “simple” clinical invitation to “drop inside,” to explore a seemingly simple idea of “exploring one’s inner world,” literally feels like an invitation to meet one’s death. Getting in touch with one’s internal experience is terrifying. “I don’t want to know how I feel.” “I will feel that way forever.” “I will be so overwhelmed,” “I won’t be able to handle it.” “I’ll be annihilated by it.” “My feelings will take over. They’ll kill me.”

Clinicians working with complex trauma survivors are also often faced with clients who activate into a conflictive internal response to contact with an attachment figure and can become activated into internal conflicts regarding attachment. As Bowlby’s attachment theory emphasized, “To feel attached is to feel safe and secure. By contrast, an insecurely attached person may have a mixture of feelings towards their attachment figure: intense love and dependency, fear of rejection, irritability, and vigilance” (Holmes, 2014).

Subsequently, by nature of the therapeutic relationship itself, as an attachment relationship, therapists and clients can often find themselves engaging in reenactments, and the expression of the unhealed attachment traumas “in the room,” which often emerge from the depths of the clinical work as “rips” in the therapeutic relationship itself. Therapists and clients can find themselves experiencing clinical impasses as a result. The question in healing unhealed trauma now becomes, for trauma therapists, how does one navigate a client’s often conflictual system of defenses that were necessary, as well as the dissociation that prevented the full realization of their internal and external experiences and the deep pain, especially in response to a lack of the “feeling felt” in early attachment relationships.

The description of the impact of developmental trauma and the ensuing conflict between seeking to connect and simultaneous turning away from that very thing is aptly described by F.M., and Christie-Sands, J. (2020) and is an example of what clinicians often experience with clients in session, both implicitly and explicitly.

“Early adversity imposes a trajectory upon which the basic urge to attach may become conflicted throughout life: opposing action tendencies occupying parallel circuits in a mammalian SEEKING system that has evolved to ensure survival through attachment. However, it is also argued here that opponent urges can be present in the immediate orienting response. As the body orients towards and seeks relational contact, connection, and communication, the ‘somatic signature’ of conflicted urges can emerge: a simultaneous urge to reach out and to pull away, for example.”

So, the question becomes, for the therapist working with complex trauma, how to navigate such attachment conflicts, especially as their impact is often are, readily reexperienced “in the room” between the therapist and client. Furthermore, as previously described, with the dissociative subtype exhibiting a more pre-frontal cortical “overmodulation” of affect (Lanius et al., 2010) and associated limbic activation, it begs the question of how to provide stabilization and later process, albeit via methods that do not *solely* utilize pre-frontal cortical approaches. Furthermore, in the reexperiencing/hyperaroused PTSD subtype that is characterized by the opposite, whereby the pre-frontal cortical region impact on limbic activation is *limited*, how does one approach overall stabilization, trauma processing, and integration? The answer may come from the utilization of “top-down” and “bottom-up” approaches. As Frewen and Lanius (2015) describe “once a client has sufficiently strengthened their present self and is able to regularly ground themselves using somatic and cognitive grounding skills, they can be encouraged to participate in the intentional recall and working through of past memories.

Kearney and Lanius (2022) go on to describe that “for those flooded by sensation and emotion, building tolerance of somatic sensation using top-down strategies is essential. For those wired to “shut down” or avoid somatic sensation as a defense mechanism, identification of somatic cues related to shifts in arousal and/or emotion may be facilitated through titrated somatic sensory feedback.” In addition, “the combination of somatic sensory stimulation with awareness, where the individual takes notice of the presence, intensity, and quality of somatic input, may bridge the brain-body disconnect that is often so difficult to address in cognitively focused interventions” (Kearney and Lanius, 2022). It is with this in mind that one could conceptualize that mindfully partnering with animals in clinical work can provide such opportunities to bridge the gap between more “bottom-up” and “top-down” approaches

EquiLateral: The Equine-Assisted EMDR Protocol ®

It is more common that those who present with a more simple presentation of PTSD can process and heal implicitly stored, unhealed trauma via the EMDR Therapy Standard Protocol, on its own and without modifications. In contrast, EMDR therapy can be challenging and potentially destabilizing for clients who present with complex trauma and dissociation. It is also well-established that, especially for this population, EMDR therapy alone is not a therapy to treat dissociation. EMDR therapy lends itself well to incorporating additional stabilization methods and modalities that can fit within the eight-phased, three-pronged EMDR standard protocol, particularly Phase Two, the Stabilization phase. Many EMDR clinicians working with

complex trauma have also learned that in addition to providing ways to increase client regulation between sessions, expanding the client's capacity to process also means addressing the dissociative process of complex trauma clients. Without doing so, clients can find themselves reliving their trauma between sessions and struggling to maintain their daily functioning.

The client who presents with complex trauma needs a more far-reaching and in-depth process of stabilization and resource development, as well as a greater need for the therapist to regulate (Rosoff, 2019) in a more active manner. In EMDR therapy's eight-phased, three-pronged approach, the increased need for advanced stabilization in the treatment of complex trauma is often addressed via the installation of adaptive, functional positive neural networks that support the client's ability to tolerate affect and utilize adaptive ways of self-regulating. Resource Development Installation (RDI) strategies, for example, such as through the creation of *mastery, symbolic, and relational resources* (Korn and Leeds, 2022) are utilized in EMDR therapy's phase two to support the stabilization of such clients.

The concept of an all-inclusive animal-facilitated treatment for PTSD has been suggested (Altschuler, 1999). There has also been an ever-increasing interest in partnering with animals in providing mental health services, including, but certainly not limited to the field of utilizing equine-facilitated interactions. However, considering the phased model of trauma treatment, it's noteworthy that before the author developed Equine-Assisted EMDR in 2011 through EquiLateral: The Equine-Assisted EMDR Protocol ® that prior to doing so, there was no manualized animal-assisted approach to providing a phased approach to trauma therapy that not only adhered to standard practice but *also* met the specific needs of clients with complex trauma.

While the full detailed description of Equine-Assisted EMDR goes beyond the scope of this article, in summary, clients are offered the opportunity to move through some, and perhaps all eight phases and three prongs of EMDR therapy (*Phase 1: History Taking, Phase 2: Preparation, Phase 3: Assessment, Phase 4: Processing/Desensitization, Phase 5: Installation, Phase 6: Body Scan Phase 7: Closure, Phase 8: Reevaluation*) in partnership with the equine, via both directive and non-directive means, and in a way that still promotes client *and* animal welfare.

Following the established protocol for EMDR therapy, during Phase 1, History Taking, clients' distress, current triggers, and anticipatory distress are examined and guided by the AIP model. Driven by EMDR therapy's Adaptive Information Processing model, the past is seen as driving the present. In particular, the client's internal and external activation and subsequent behaviors, particularly in response to the animal-assisted interactions, are conceptualized as opportunities to conduct both directed and non-directed means of history-taking. Doing so then later supports the accessing,

stimulating, and processing of the traumatic material that requires retrieval, stimulation, and processing.

Initial findings of research into the animal-human bond have also shown that in response to companion animals, patients' physical health markers are impacted, i.e., cortisol levels can decrease, oxytocin can increase, and blood pressure can decrease (Fine, 2015, Gullone, E., 2000; Friedmann et al., 1983). With this in mind, opportunities for partnering with animals can become an integral part of the Phase 2 Stabilization Phase. In Phase 2, Preparation/Stabilization, both directed and non-directed interactions are conceptualized to especially offer clients an increased ability to maintain the dual attention necessary to complete some, and often all, of the eight phases of EMDR therapy, as well as provide opportunities for adaptive information, co-regulation, as well as building mastery, symbolic, and relational resources. EMDR therapists may partner with animals to experientially create, resources and resource states via both directed and non-directed animal interactions and in a "bottom-up" manner.

Subsequently in Phases 3-8 when utilizing the animal-human interactions support the client's ability to maintain the dual attention, that EMDR therapy emphasizes as necessary for trauma processing. Via these interactions, the EMDR therapist is also afforded the opportunity to provide experiential approaches for resourcing complex clients, as well as creative ways for increasing adaptive information and supporting the processing of traumatic, maladaptively stored material.

Animal Assisted Interweaves (AAI)

As part of the development of EquiLateral: Equine-Assisted EMDR Protocol ® the author also introduced the intervention of Equine-Assisted Interweaves, and subsequently, Animal Assisted Interweaves. The historical context of interweaving within EMDR therapy is associated with Francine Shapiro, the developer of EMDR therapy. "Cognitive Interweaves" were first introduced within the EMDR therapy standard protocol as a way to "jump start" processing and were conceptualized as an intervention that involved "dropping in" adaptive information to "weave together the appropriate neural networks and associations" (Shapiro, 2018). EMDR therapists are subsequently well versed in "dropping in" adaptive material to help their clients, not only during processing but also within all eight phases of EMDR therapy, especially when clients are "stuck," and need additional adaptive information.

With this in mind, it was the author's conceptualization that while "cognitive" interweaves are utilized, there also was a need, especially in cases of complex trauma, for a more "bottom-up" approach to interweaving. The intention in creating Animal Assisted Interweaves for EMDR therapy,

specifically, was to still help facilitate the bringing in of adaptive information, but in a way that would provide an experientially based and “bottom-up” animal-assisted method for doing so. While one might think that Animal-Assisted Interweaves were primarily focused on Phases 3-8 of the EMDR Standard Protocol, the expansion of utilizing Animal Assisted Interweaves, also within Phases 1 & 2 of the EMDR Standard Protocol was especially necessary for clients who required more extensive stabilization skills, such as in the case of those who present with complex trauma and dissociation.

Moreover, the use of Animal Assisted Interweaves was found by the author to help clients to regulate defensive strategies within the client and also provide more experiential opportunities for increasing the adaptive information available to the client. Sources of adaptive information that are *experientially* created and accessed via “*Animal Assisted Interweaves*” can also help to address blocked processing. Consequently, a client’s system could be better able to access the adaptive information that was obtained experientially, further supporting the transformation of maladaptively stored information into adaptive responses through EMDR therapy’s eight-phased, three-pronged protocol.

By integrating Animal Assisted Interweaves into *all* eight phases of EMDR therapy, and via an animal-assisted approach to interweaving, such as in EquiLateral: The Equine-Assisted EMDR Protocol ® clients with complex trauma have reported feeling better equipped to maintain the dual attention required to navigate EMDR therapy’s phasic model of trauma treatment. Furthermore, instead of “thinking of” or “imagining,” the building of resources and resources states, clients are *doing*, and embodying the adaptive information being learned via their interactions with animals. Resourcing can therefore become “experientially” created and in “bottom-up” as opposed to only imagining in a more “top-down” cognitively oriented manner.

Rose

Rose steps into the arena intending to be able to find some sense of calm, and the ability to be present to herself. While she is telling me that, I can also see that her throat is already starting to close. The bay horse that she wants to “connect with” is eating hay not too far from her, and is very focused on eating. Barely flicking an ear our way, he munches his hay with focus and attention. Rose describes that she knows that “Max is just in the moment right now.”

Prior to this moment, Rose and I had walked into my arena, both very mindfully aware of the fact that we are focused on Equine-Assisted EMDR’s Phase 2 Preparation and Stabilization, and *not* reprocessing. It would be of the utmost importance that Rose be presented with an opportunity to develop and increase her stabilization skills. Nevertheless, there was also an awareness that

stabilization skills are not finite and that the complexity of Rose's presentation necessitated pacing the work. I was keenly aware that we would need to establish grounding, separating past from present, emotional regulation, and help her to also establish how to get her needs met in healthy ways (Brand et al, 2022).

Rose asks to move towards Max, to which I remind her that she has choices and that she gets to make that decision, as opposed to me. This moment serves as an opportunity for her to practice expressing her needs, and to remind her that as she does, she is also able to do so from an adult perspective. Her head tips ever so slightly to the side, as a muffled chuckle barely escapes with her breath. "Oh, yes, I guess I am, huh?" She straightens up, and her ribs expand as she takes a breath. "I want to move towards him." Rose's left foot reaches forward, and in turn, Max circles his head towards her, regarding her. Pieces of hay cling to his whiskers in peril, quivering slightly. I watch with curiosity as I see Rose's lip begin to quiver in the same fashion.

"What's it like to be here next to him?" I softly ask. "I'm not going into sensation, feeling, or too much digging into content or narrative right now, we are still in an early phase of the trauma work, still in stabilization, so I am not sure how even going for feelings will be tolerated yet. I go slow.

"It's okay." The simple answer, with little affect, little inflection, seems dare I say, not embodied. Her tone and downward gaze leads me to explore what I am also seeing in Rose's body posture. She is, ever so slightly, shrinking as her shoulders are rolling forward, and her voice is softening, and the tonal quality is. It is important that I track her presentation and just don't move right into "doing," for it is of primary importance to be "with" and attune to her mindfully.

I decided to offer Rose a way to experience a "bottom-up" way of being present with Max, but also do so in a way that can also some more cortical "adaptive information" that, from an EMDR perspective, can also help her to stay in "dual attention," and not in reliving, into whatever might be bubbling up under the surface of this moment.

My theory is that instead of being in a full "present" sense of self, Rose may be experiencing some internal conflict and that we are teetering on the edge of her tipping into the past, into a trauma-related state of consciousness (Frewan & Lanius, 2015). My next thought, is that if I don't intervene, that our session may tip her further into a place of reliving. I also cannot assume that there is an internal universal perspective of time, nor an internal sense of unity around even "where" she is, and "what" she is experiencing.

Therefore, my intention with our stabilization emphasis in our Equine-Assisted EMDR session is unfolding as a focus on treating the sense of separation and lack of time orientation (K. Martin, Personal Communication, May 5th, 2014) (Martin, 2019) and trying to bring in more adaptive information

to help her ground, but still in a bottom-up approach. In the future, when we do get to processing, doing so can help her to experientially gain a sense of mastery in being able to maintain the dual attention necessary for her to pursue later processing in Phases 3-8 of EMDR therapy.

“I wonder Rose do you get the sense that everything in you knows and feels to be standing next to this horse? Is 100% of you experiencing this moment with Max and fully getting that you are an adult at this moment, standing next to him?”

She laughs. “No, not all. It’s 50% I’m somewhere else.”

As I stand here with Rose, in our demo, I immediately back out, and recalibrate, because if I push further, my conceptualization is that her system is going to get even more shut down in response.

“Rose, can you invite that stuff that is lighting up right now, whatever it is, and we don’t even have to know what it is right now, to really notice that it too, is meeting Max?” It’s not possible for any part of you to be in the past because you didn’t know me then. This horse knows that you are an adult, even if there is some conflict inside, in there about that really feeling true.”

I watch Rose as she swallows, takes a somewhat deeper breath, and her shoulders drop out of her ears.

“Yeah, that’s better. I know I am here with you, with Max. Quiet. It just got quieter. 100%.” Her breath deepens and her eyes seem to sparkle more. It’s almost as if there is more life behind them. Her shoulders seem to open, her scapula seems to slide down her back, and her back straightens.

“What’s that like?” I softly ask her. “Is it okay that it got that quiet inside?”

“It is, but it's new.”

“Notice how I am treating you Rose, look at those horses, Rose, is everything okay here?” Am I treating you okay? Is there any danger here?” Did anything dangerous happen here?”

The other horses from the herd form a circle around her, led by the red quarter horse mare. She moves the little gray pony, Pixie, back towards Rose. Pixie gradually comes to a halt and turns her head into Rose’s torso, taking a deep breath. She licks and chews, then blows out. Rose, sensing that Pixie’s nervous system is also settling, chuckles softly.

“Not at all. The calm is okay.”

For just a few seconds, Rose has learned that it is okay to be calm, and that it wouldn’t impact her safety. By experientially creating calm and pairing the learning that calm is “okay,” the partnership with the horses is opening up the opportunity for her to have a mastery experience that she can come back to when, and if she moves into reprocessing. To have, literally, a few minutes of calm and not have to go into defenses, to be able to “be with” the experience

in an embodied way, is what we then chose to “install” with dual attention stimuli (DAS) as per the EMDR therapy approach.

“If there was a danger in being calm, if there really was a danger, wouldn’t the horses tell us? We know that these horses are prey in the wild, so if there was a danger, a real concern, either internally, or externally for you, for them, wouldn’t we be able to see an alarm, an alert in the horses’ behavior? In fact, tell me what we would see.”

Rose goes on to describe that we would see the horses orient to where there was a cue of danger, that they might even move their feet to get away, even “high tail it out of here.”

“Rose, did they do that? Did they look concerned? Is there anything in their behavior that is telling you that they are concerned about calm being dangerous for you, me, or them?”

Rose’s breath deepens. “I guess not.”

I remind Rose of the magnitude of the work that she has done today and ask her to take a mental snapshot of the moment that best represents her increasing her ability to increase her tolerance for calm. I ask her to cue a word that best represents this resource that she has created, and install this as a resource for her to “have in your back pocket” as she moves forward into the future. I also ask permission for me to take a photo of her with the horses that I can later send to her and that she can use as another access point for this moment.

“Rose, you have created this calm state, this calm moment, and it is always available to you. No one or anything can take away this; it’s yours. Practice bringing up this moment when you need it, as well as when you don’t. Calm is like a muscle. The more we use it, the more available it is to us. Please practice returning to this calm moment, over and over and over again to help it become even more accessible for you.”

Rose’s progress involved deepening the stabilization work to treat her dissociative process. We were both encouraged by the fact that presented as less phobic to exploring her inner experiences was better able to identify her needs, ground, to regulate her emotions in between sessions, and set boundaries. Her overall global level of functioning in her daily life was increasing. Subsequently, Rose was better able to progress through Equine-Assisted EMDR’s Phases 3-8, and “target” a wide range of traumatic memories, particularly those involving adult-onset triggers and experiences. Nevertheless, Rose was yet to be able to process her first and worst” memories associated with her attachment-related traumatization, nor was the expectation that she would. Rose was *not* an EMDR client with simple PTSD, therefore EMDR therapy target sequencing in that manner was not deemed clinically appropriate.

In reviewing our treatment progress, Rose would describe EMDR Therapy as “the mechanism by which to communicate with the secret that I kept from myself” and that it had “helped to establish a pathway for that communication.” She would go on to describe that the stabilization and processing she had done, over our then 7+ years of work together, was equivalent to having a two-dimensional perspective of the secret.” Her description of her ongoing recovery from her dissociative process was that “It reminds me of a baseball team. Team members scatter to protect different areas of the field and play different roles but they cannot travel (heal and grow) while they are scattered. All players must return to the bus (one bus) to speak to one another, integrate their strategies, and thrive/win.”

But, Rose and I both also still knew that there was core attachment wounding to process and so our next progression of work began to unfold. Our animal-assisted work, still keeping in mind the focus on a phased approach, was to start addressing the attachment-related “shock” that I conceptualized as continuing to magnify her PTSD symptoms, as is described in the Deep Brain Reorienting (DBR) ® psychotherapy model. With the author’s experience in introducing an animal-assisted approach to EMDR therapy and its subsequent application of Animal-Assisted Interweaves, it became evident in clinical practice that Animal-Assisted Interweaves could continue to support Rose’s DBR therapy process while still ensuring treatment fidelity. Subsequently, the author has continued to observe that for many clients, particularly those with complex trauma, mindfully incorporating animals as co-facilitators during the DBR process has often proven invaluable.

DBR Therapy

Deep Brain Reorienting (DBR) ®, is an emerging trauma therapy created by Psychiatrist Dr. Frank Corrigan, that is becoming more readily used in clinical practice and is currently under research study. Initial outcomes “show promise in the potential for DBR to have robust, lasting effects of similar magnitude to contemporary evidence-based treatments for PTSD (Kearney, 2023). The DBR model emphasizes the accessing of and processing of the residual unprocessed shock and horror that is conceptualized as having a core impact and contributes to myriad psychological symptoms that impact one’s daily living and quality of life. DBR therapy involves the tracking of the client’s brainstem responses to trauma and one’s subsequent inability to take in and “turn towards” said experiences, which is theorized to block the ability to process the shock and associated deep pain that continues to drive symptomology, including, but by no means limited to PTSD (Post Traumatic Stress Disorder).

The hypothetical underpinnings of Frank Corrigan’s DBR model, suggest that the neuroanatomical sequence of (O) Orient, (S) Shock (A)

Affect/Defenses sequence associated with the brain's response to traumatic stimuli, originates at the brain stem level. The Superior Colliculi orients *before* the defenses and affects associated with subsequent Periaqueductal Grey (PAG) activation at the mid-brain level. Orienting is, first and foremost, for humans, as in animal models. Upon orienting oneself to the source of danger, whether it's close or far away, one can subconsciously assess the appropriate response in milliseconds, even before the cortex has formed words or a context for what's happening.

The DBR process involves activating and processing a contemporary Activating Stimulus i.e. when the *body* registers the danger, which is *before* the cortical awareness of it, and in doing so, the DBR approach utilizes the brainstem's initial registering of traumatic experiences, via an "Orienting Tension" (OT) that is primarily registered in the areas of the forehead, around the eyes, or base of the head. Identifying often a current "Activating Stimulus" sets the client up to be able to process a neurological sequence that albeit, not necessarily "predictable," can be readily tracked and monitored by the therapist. As a result, clinicians and clients are encouraged to stay under cortical loops instead of engaging with them. Doing so enables the client, and therapist, to work from a deep brain level and increase capacity to be able to turn towards what is both emotionally and also physiologically deeply painful.

Animal Assisted Collicular Presence

With an awareness of boundaries, place, and location, there comes a greater sense of safety for *all* mammals. A mammal's quintessential ability to lay down the grid, boundary, and mapping cells (Sanders, H., 2015) is where there exists an innate mapping of the organism's current location in the environment, current landmarks, and paths of travel. With consideration of the author's animal-assisted work, for example, as mammals preyed upon the while, animals, we, *our* survival is *highly* dependent on the ability to be in tune with the body and its relationship to the world around it.

DBR proposes that the ability to access a Collicular level of groundedness provides a secure base and is a pre-requisite for processing via DBR therapy. The mapping of one's internal and external world is demonstrative of what is utilized and described in DBR as the stabilizing interventions of "Where Self" and subsequent "Protoself" (Corrigan et al, 2024) that are offered as precursors to DBR processing. DBR therapy's stabilization and later processing specifically requires not only the client but also the therapist to be at a deep Collicular level, but is also one that is less dependent on a Cortical level of awareness and associated content. At the onset of DBR therapy, for example, clients are asked to ground at a Collicular level via a "Where Self" (WS) activity that emphasizes the ability of an organism to track *where* they are in relation *to* the external environment, such as via

sounds, distance, compass points, gravitational pull, and other additional external stimuli.

DBR therapy, as an example of a phasic model will utilize the “Where Self” and subsequent “Proto Self” as stabilization (Corrigan, Personal Communication, January 10th, 2025). In contrast to grounding techniques that may be more “top-down” focused i.e., time, date, location, counting, there is described in the activation of the WS activity, a promotion of the client being able to move into a Collicular level of being grounded, one that is driven by the innate ability of humans, as mammals, to “feel and sense,” as opposed to an over-dependency on the more “thinking and knowing” as a way to ground. Furthermore, via a Proto Self exercise (PS) DBR therapists can also expand the Where Self (WS) exercise to help clients access a deeper body-oriented awareness. Via a Proto Self (PS) exercise, clients increase their capacity to drop into their *internal* experience, moving now into an awareness of what it is like to be in a body, alive, and functioning. Clients must be able to access, at a minimum, the WS, as should therapists as they hold space for the work itself.

It is the author’s perspective both providers of DBR therapy *and* their clients, can benefit by exploring the opportunity to interact with and experience contact with animals to help access the Orienting Self aka: “Where Self” (Corrigan et al, 2024) as well as their innate living in a sentient “Protoself” as described by Damasio (2010) and Corrigan et al, (2024). As a result, clients are provided with a unique opportunity to access the “Where Self” via Animal-Assisted Interweaves.

In recognizing the potential to bring the “whereness” of the animal’s presence into subsequent sessions, one can also actively invite or acknowledge the client’s companion animal’s presence, especially considering the prevalence of DBR therapy being provided online.

Furthermore, for those who suffer from complex trauma and dissociation, one can also consider a level of “being with” the animal(s) can help to support clients to be also able to *neurologically* map *where* they are in space and location, such as in relationship to the space and location of one’s attachment source. Mindfully doing so may serve as an additional potential resource of attachment at a brain stem i.e. Coliclar level.

Corrigan also elucidates that, “Deep Brain Reorienting is a trauma processing modality which does not provide specific techniques, other than grounding in the Where-Self, for distress regulation between sessions, so it may be important for clients to have other resources and support in place” (2024). The ability to access and maintain the “Where Self” or “Proto Self” is also a prerequisite for DBR processing. With this in mind, in clincial practice, the author has also demonstated that it can be particularly advantageous for clients undergoing DBR therapy, who might not have been able to access or

even maintain the Where Self, to experience DBR with animals as co-facilitators. In clinical practice, the presence of animals and the author's conscious language surrounding them, such as language referring to *their* "whereness," has facilitated numerous clients in accessing their "Where Self" during sessions and as a grounding meditation between sessions. Furthermore, specific sensory-oriented Animal-Assisted Interweaves have also been utilized by the author during subsequent DBR processing when the "Where Self" becomes inaccessible due to the intrusion of a dissociative process and/or when the orienting tension is lost. Doing so can occur not only during positive relational contact with an animal, such as the author's formal therapy animal(s) but also with the client's companion animal(s), especially if they organically present "in the therapy room" as can regularly occur with DBR therapy often being conducted online. One can consider that perhaps the knowing of *where* the animal could help hippocampal-collicular systems emerge in the Where-Self.

Rose

My sessions with Rose would continue outdoors with the horses, and when were inside, in the presence of my therapy dog. In preparation for our beginning to process the unhealed shock that I conceptualized was driving her PTSD symptoms, I began to describe that we would be moving into the "Where-Self" and, subsequently, the "Protoself" in preparation for our DBR work.

"Our ability to be aware of our external and internal experiences can often feel elusive and fleeting. Yet, what we do have within us is an organic ability to sense the inside and the outside world, that is constant, always available, and driven by our inborn nature as animals, as *organisms*.

Animals, and *we* as animals, mammals, specifically, are highly dependent on the ability to orient into space, location, and the environment around them. With this awareness comes greater well-being; animals are exceptional teachers of this innate ability to orient. Sensing "where" they are, and with an embodied knowing of their insides and outsides. We, too, can also draw into this, and experience the same."

I proceeded to guide Rose through Frank Corrigan's Where Self (2024) and was also mindful to interweave the animals' presence to further facilitate the accessing of *her* Collicular level of presence. The sounds, smells, gravity field, and the shared location and boundaries with the horses, who chose to be with us during the session, and the unique characteristics of nature itself all acted as an invitation to delve deeper into her surroundings. Our session concluded in the presence of three grazing horses in my pasture, both presenting as calm and with a sense of embodiment. Rose was able to experience herself as being behind her eyes and in the center of her awareness,

the compass of direction, as well as recognize that the horses were in that same space and in fact, embodying that very same way of *being*. “They *are* the Where-Self.” I invited her to maintain a practice of dropping into this sense of awareness throughout her day via a Where Self in the presence of her beloved cats and throughout the coming weeks, all in preparation for our later DBR processing.

Attachment and Animal Assisted Interweaves

It is also the author’s supposition that in addition to the introduction of the animal as part of the Where-Self or Protoself, that the animal can also be a source of Collicular presence for the processing of deep attachment woundings, as is described through DBR therapy. In addition to serving as a support for stabilization, the experiential nature of partnering with animals can also provide distinctive windows of opportunity to identify, access, and address unhealed attachment shock as described in the utilization of Deep Brain Reorienting (DBR) therapy.

Granted, one might wonder why it would be beneficial to sense the animal’s presence if the therapist is present, particularly at a collicular level. But one must consider that while therapists can and often do serve as the witnessing “other” in a therapeutic setting, that other *humans* are the ones that hurt our clients the most. Therefore, therapists, in and of *themselves*, can serve as a looming threat, which in turn, can serve as a stimulus that elicits PAG-driven defenses. Subsequently, the presence of an attachment figure, or even just a *potential* attachment figure, can be enough to register these client defenses, especially in cases of complex trauma and dissociation, where the therapist is not a neutral stimulus, but rather a potential source of threat.

The consideration of attachment style as it relates to human-animal interactions is not a new one. The exploration of human-to-animal attachment and human-to-human attachment has been explored via the Pet Attachment Questionnaire (PAQ) (Zilcha-Mano et al., 2011). Research into the animal-human bond and cross-species relationships has also suggested that “the human–companion animal bond is an attachment-based relationship in terms of proximity, comfort-seeking, and separation distress” (Prato-Previde et. al, 2022). As Frank Corrigan similarly describes, “in the early years, a sense of location for safety would be more relevantly oriented towards the attachment figure and where they might be found (2024).

With the retrosplenial cortex-superior colliculi serving as a child’s source of orienting to the location of the attachment figure (Frank Corrigan Personal Communication, June 1st, 2023) there becomes the possibility of considering also that the *location* of the attachment figure of the animal can be considered. A child’s ability to “orient” to the location of the attachment figure, “where” they are, will be identified via input of sensory stimuli such as

visual cues, sounds, and smell. To be able to track *where* the attachment figure is and in relation to the child is a survival need. The attachment figure's location and the child's ability to track that through sensory inputs are what contribute to the child's sense of safety in the world. The "Whereness" of the attachment figure, and subsequently oneself, is a building block for developing the capacity to develop a sense of "where I am," the Collicular level presence, the key stabilization skill for processing trauma through the DBR modality. The location of the attachment figure, and the process of sensing it at a deep brain level, as if to even be able to map one's existence, seems plausible when seen through an attachment lens.

Humans, as mammals, are hard-wired to orient to and register if the wanting to connect is being "received" by caregivers, whereby the superior colliculi registering of this, occurs in milliseconds before the affective and defenses responses to what did or did not happen in response to the reaching for and towards connection. Panskepp summarized it quite succinctly, that "to be a mammal, is to be born socially dependent" (1998), and is an expression of the SEEKING system. With this in mind, providers working with complex trauma, are often faced with clients who activate into a conflictive internal response to the contact and can become activated into internal conflicts regarding connection. Long-standing providers animal animal-assisted services, of many kinds, are very well aware of this phenomenon.

In cases of complex trauma, both EMDR therapists and DBR therapists should recognize that it is not uncommon for clients to experience a simultaneous activation of conflictual attachment responses when "meeting and greeting" an animal, particularly a "new to them" animal or when observing them in socialization, even from a distance. Clients, with complex trauma, for example, have expressed, attachment conflicts in many following ways, *"I remember feeling terrified that my 'stuff' was going to hurt him if I allowed myself to get close or to be there in that moment. I felt a draw to want to be there but too fearful to really stay."* Other examples include *"That horse doesn't like me. Fine, I don't want to know him."* *I don't want to love on her. It's dangerous."* *"I want to connect, but I'm scared to."* In clinical practice, therapists who can consider Animal Assisted Interweaves have a unique chance to identify a working model of client attachment styles by exploring what's "in the room." Many clients with complex trauma experience "contact" with the animal, which can immediately trigger intrapersonal conflicts in response to the interpersonal interaction with the animal as a potential or current attachment figure and subsequently, a potential Activating Stimulus.

As an illustration, another client became activated in response to the writer's therapy dog, whereby the registering of the dog's turning his head to the right and choosing to move into his sleeping area served as a doorway into the sensitivity to attachment-related threats, the author's conceptualization

being that the sensitivity of the superior colliculi was readily accessible via the interweaving of the animal's behavior. Subsequently, and from the perspective of DBR therapy, the moment served as *the* Activating Stimulus into the "file" of unhealed attachment-related shock.

It is also of note that the example is illustrative of the prioritization of *both* animal and client welfare in that the author's therapy dog was able to demonstrate choice and freedom of movement, i.e., he was not "made" to interact with the client in a certain manner. The author utilized the interaction as the Activating Stimulus, enabling access to the subsequent sequence and attachment-related conflicts. "He doesn't like me" and simultaneous conflict between wanting to approach the dog for connection, and at the same time, turning away from the perceived threat of attachment loss. The moment where the dog turned his head became to doorway into associated attachment shock, that "file" that activated in that moment of perceived misattunement.

Rose

In the early days of our DBR work, Rose and I decided to choose a recent Activating Stimulus (AS), the moment of she intended to send an email but then found herself "stopping." Orienting to the AS, she turns towards the actual sensation of sitting, right before going to send the email, when she registered the tension. Sitting outside in two chairs, three horses graze in front of us.

"Yeah, that's it, uh, it's right now, even just as I sit here."

Rose effortlessly detects the Orienting tension in her forehead and starts processing the shock. "My legs are shaking," she says. "My chest hollowed out." As she continues to process the subsequent affects and associated tension in her jaw, the lead mare stands in front of her and "blows out" a long exhale, licking and chewing in what is oft described in the world of horsemanship as a "release." Steven Peters (n.d), an equine neuroscientist and expert, often explains that the "tight jaw may be one of the last places that the horse releases before completely transitioning from the sympathetic to the parasympathetic nervous system."

Rose begins to develop into a new perspective, "It really *was* that bad." "There's just a sliver of acceptance."

A second horse walks by Rose's left side, the same direction that she appears to be turning away from, and at that same moment Rose begins to slowly arc her left arm out from the left side of her body as she expresses a new perspective "Funny, that horse, she knows that was coming. She's saying that the wall I was cowering against isn't there anymore. I was cowering against a wall, against my left shoulder. She's saying it's not there anymore." In future sessions, when referring to this session Rose was able to reflect on her new perspective and that in numerous examples of family violence, she

had experienced herself as being “stuck” against the wall of her bedroom, trapped in the corner, clamoring to get away from her Father. Later upon my reflecting on this session with Frank Corrigan (Personal Communication, January 10th, 2025) it also became clear that “with the colliculi no longer registering the threat where the horse appears from and with a non-threatening approach, became the immediate displacement of the threat vigilance by a sense of connection.” For Rose, session was a pivotal moment, a true dissonance between the now, and the then. Better able experience herself as being free of the wall, just as “the horse had shown her” during the development of her new perspective. “the wall is not there anymore,” in the next week, she had hiked for the first time in years, more positively valenced to SEEKing.

Conclusions

In summary, phased trauma treatment approaches of EMDR and DBR therapies can serve as the clinical foundation for mindfully collaborating with animals, especially in working with individuals who have experienced complex trauma. Partnering with animals in providing trauma therapy services, whether through the specific inclusion of animals in the therapy experience or even through the collaboration of the client’s companion animals, offers numerous opportunities for EMDR and DBR therapists. Through what the author calls Animal Assisted Interweaves, providers can offer both “bottom-up” and “top-down” approaches to addressing clients’ physiological responses to unresolved trauma. These opportunities enable therapists to provide Animal Assisted Interweaves that support a phased approach to trauma healing while ensuring treatment fidelity and prioritizing client and animal welfare. By considering the partnership with animals within the context of the standard of practice for each modality, therapists and their clients are presented with unique and engaging opportunities to promote stabilization and process traumatic material, aligning with the primary treatment focuses of EMDR and DBR therapies, respectively.

Conflict of Interest: The authors reported no conflict of interest.

Data Availability: All data are included in the content of the paper.

Funding Statement: The authors did not obtain any funding for this research. The author does receive periodic financial compensation for offering trainings in EquiLateral: The Equine-Assisted EMDR Protocol.

References:

1. Altschuler, E. L. (1999). Pet-facilitated therapy for posttraumatic stress disorder. *Annals of Clinical Psychiatry*, 11(1), 29–30. <https://doi.org/10.1023/A:1022808131941>
2. Brand, B. L., Schielke, H. J., Schivone, F. & Lanius, R. A. (2022). *Finding Solid Ground*.
3. *Overcoming Obstacles in Trauma Treatment*. Oxford University Press.
4. Chandler, C.K. (2017). *Animal-Assisted Therapy in Counseling (3rd ed.)*. Routledge. <https://doi.org/10.4324/9781315673042>
5. Cope, S. (2000). *Yoga and the quest for the true self*. Bantam trade pbk. ed. New York, Bantam Books.
6. Corrigan, F. M., & Christie-Sands, J. (2020). An innate brainstem self-other system involving orienting, affective responding, and polyvalent relational seeking: Some clinical implications for a “Deep Brain Reorienting” trauma psychotherapy approach. *Medical Hypotheses*, 136(109502), 1–10. 10.1016/j.mehy.2019.109502 [DOI] [PubMed] [Google Scholar]
7. Corrigan, F.M., Young, H., & Christie-Sands, J. (2024). *Deep Brain Reorienting: Understanding the Neuroscience of Trauma, Attachment Wounding, and DBR Psychotherapy (1st ed.)*. Routledge. <https://doi.org/10.4324/9781003431695>
8. Friedmann, E., Katcher, A. H., Thomas, S. A., Lynch, J. J., & Messent, P. R. (1983). Social interaction and blood pressure. Influence of animal companions. *The Journal of nervous and mental disease*, 171(8), 461–465. <https://doi.org/10.1097/00005053-198308000-00002>
9. Frewen, P. A., & Lanius, R. A.: (2015). *Healing the Traumatized Self: Consciousness, Neuroscience, Treatment*. New York: W. W Norton & Company.
10. Gullone, E., (2000). The biophilia hypothesis and life in the 21st century: in-creasing mental health or increasing pathology? *J. Happ. Stud.* 1, 293-321.
11. Herman, J. L. (1992). *Trauma and Recovery: The Aftermath of Violence—From Domestic Abuse to Political Terror*. New York: Basic Books.
12. Holmes, J. (2014). *John Bowlby and attachment theory* (2nd ed.). Routledge/Taylor & Francis Group.
13. Jegatheesan, B., Beetz, A., Choi, G., Dudzik, C., Fine, A., Garcia, R. M., Johnson, R., Ormerod, E., Winkle, M., & Yamazaki, K. (2014). IAHAIO White Paper: The IAHAIO Definitions for Animal Assisted Intervention and Animal Assisted Activity and Guidelines for Wellness of Animals Involved. In A. Fine (Ed.), *Handbook on Animal*

- Assisted Therapy: theoretical foundations and guidelines for practice* (3 ed., pp. 415-418). Elsevier Academic Press.
14. Kearney BE, Corrigan FM, Frewen PA, Nevill S, Harricharan S, Andrews K, Jetly R, McKinnon MC, Lanius RA. (2023) A randomized controlled trial of Deep Brain Reorienting: a neuroscientifically guided treatment for post-traumatic stress disorder. *Eur J Psychotraumatol.* 14(2):2240691. doi: 10.1080/20008066.2023.2240691. PMID: 37581275; PMCID: PMC10431732.
 15. Kearney BE and Lanius RA (2022) The brain-body disconnect: A somatic sensory basis for trauma-related disorders. *Front. Neurosci.* 16:1015749. doi: 10.3389/fnins.2022.1015749
 16. Kessler, R. C. (2000). Posttraumatic stress disorder: The burden to the individual and to society. *Journal of Clinical Psychiatry*, 61 (Suppl 5), 4–12.
 17. Korn, D. L., & Leeds, A. M. (2002). Preliminary evidence of efficacy for EMDR resource development and installation in the stabilization phase of treatment of complex posttraumatic stress disorder. *Journal of Clinical Psychology*, 58(12), 1465-1487.
 18. Lanius RA, Vermetten E, Loewenstein RJ, Brand B, Schmahl C, Bremner JD, Spiegel D. Emotion modulation in PTSD: Clinical and neurobiological evidence for a dissociative subtype. *Am J Psychiatry.* (2010) Jun;167(6):640-7. doi: 10.1176/appi.ajp.2009.09081168. Epub 2010 Apr 1. PMID: 20360318; PMCID: PMC3226703.
 19. Levinson, B. M. (1962). The dog as a “co-therapist”. *Mental Hygiene*, 46, 59–65.
 20. Martin, K. (2019). *Structural Dissociation in the Treatment of Trauma and Eating Disorders*. In A. Seubert & P. Verdi(Eds.), *Trauma-Informed Approaches to Eating Disorders* (pp. 221-233). New York: Springer Publishing.
 21. Panksepp, J. (1998). *Affective neuroscience: The foundations of human and animal emotions*. Oxford University Press.
 22. Peters, Steven (n.d.) *Licking and Chewing: The Process Illuminated*. Retrieved January 31, 2025 from <https://besthorsepractices.com/licking-and-chewing-the-process-illuminated/>
 23. Prato-Previde, E., Basso Ricci, E., & Colombo, E. S. (2022). The Complexity of the Human-Animal Bond: Empathy, Attachment and Anthropomorphism in Human-Animal Relationships and Animal Hoarding. *Animals : an open access journal from MDPI*, 12(20), 2835. <https://doi.org/10.3390/ani12202835>

24. Rosoff, A. L. (2019). How we do what we do: The therapist, EMDR, and treatment of complex trauma. *Journal of EMDR Practice and Research*, 13(1), 61–74. <https://doi.org/10.1891/1933-3196.13.1.61>
25. Sanders, H., Rennó-Costa, C., Idiart, M., & Lisman, J. (2015). Grid Cells and Place Cells: An Integrated View of their Navigational and Memory Function. *Trends in Neurosciences*, 38(12), 763–775. <https://doi.org/10.1016/j.tins.2015.10.004>
26. Shapiro, F., (2018). *Eye movement desensitization and reprocessing: Basic Principles, Protocols, and Procedures. (4th Edition)* New York: The Guilford Press.
27. Shaw, S. B., Terpou, B. A., Densmore, M., Théberge, J., Frewen, P., McKinnon, M. C., &
28. Lanius R. (2023). Large-scale functional hyperconnectivity patterns characterizing trauma-related dissociation: A rs-fMRI study of PTSD and its dissociative subtype. *Nature Mental Health*, 1, 711–721.
29. Stewart, L. A., Chang, C. Y., Parker, L. K., & Grubbs, N. (2016). Animal-assisted therapy in counseling competencies. Alexandria, VA: American Counseling Association, Animal-Assisted Therapy in Mental Health Interest Network.
30. Van der Hart, O., Brown, P., & Van der Kolk, B. A. (1989). Pierre Janet's treatment of post-traumatic stress. *Journal of Traumatic Stress*, 2(4), 379–395. <https://doi.org/10.1002/jts.2490020404>
31. Van der Hart, O., Nijenhuis, E. R. S., & Steele, K. (2006). *The haunted self: Structural dissociation and the treatment of chronic traumatization*. W W Norton & Co.
32. Van der Kolk, B. A. (2005). Developmental Trauma Disorder: Toward a Rational Diagnosis for Children with Complex Trauma Histories. *Psychiatric Annals*, 35, 401-408. <https://doi.org/10.3928/00485713-20050501-06>
33. Zilcha-Mano, S., Mikulincer, M., & Shaver, P. R. (2011). An attachment perspective on human–pet relationships: Conceptualization and assessment of pet attachment orientations. *Journal of Research in Personality*, 45(4), 345–357. <https://doi.org/10.1016/j.jrp.2011.04.001>