

Trauma as Absence: A Biopsychosocial-AIP Definition of Trauma and Its Treatment in EMDR Therapy

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This paper advances the biopsychosocial adaptive information processing model (BPS-AIP) and theory (Cotraccia, 2012) by adding consciousness as a mechanism of action activated via social behavior in EMDR. An attention schema is conceptualized as content integrated with dynamic self-models that maintain subjective mental states of biopsychosocial connectivity or disconnectivity. These implicit self-models are portrayed as determining 1) the disposition of the BPS-AIP system of clients presenting for EMDR as more or less connected or disconnected prior to, at the time of, and following, a stressful event; and 2) whether or not stressful events become traumatizing over time. *Attention schema theory* (Graziano, 2021) is integrated to further describe how establishing and enhancing attentional agency when addressing simple and complex-PTSD facilitates consolidation of autobiographical memory. Self-integration in the context of an attuned therapeutic relationship is described in terms of patterns of tracking attention to promote heightened states of self/other consciousness and activate the innate healing system. Attention schema theory, as a prominent theory of consciousness, adds to BPS-AIP's compelling description of how an innate neurophysiological system can be integrated with psychosocial components that explain how both subjective and intersubjective experiences are causally relevant to the processing of autobiographical memory.

Keywords: EMDR; attention schema theory; biopsychosocial-AIP; consciousness

The biopsychosocial adaptive information processing (BPS-AIP) model posits that, in addition to neurophysiological mechanisms of action described by Shapiro (2018), psychosocial components within the therapeutic relationship are causally related to positive EMDR outcomes. These causal properties are described as providing the proper context within which the brain accomplishes the consolidation process of autobiographical memory as a hypercomplex, dynamic system. The internalized self-models of the client and their ongoing relationships external to therapy are part of a connected AIP system (C-AIP) or disconnected AIP system (D-AIP) into which a therapist enters. Here connected refers to a level of integration between the brain, self, and our implicit representation of others, that allows us to maintain auto-noetic consciousness, under stress, over time. Disconnection would refer to the statistical likelihood that we would lose our experience of auto-noetic consciousness under stress, more often than not.

Trauma as absence is a concept that includes a dynamic systems definition of trauma. In this definition, a lack of global biopsychosocial connectivity (Cotraccia, 2018) in the context of stressful life experiences accounts for such experiences being traumatizing. The word *absence* describes the way in which the client's lack of attentional resources becomes the principle around which the AIP system organizes. In the absence of attentional resources, the paucity of information gathered from subjective experience impairs self-regulatory and homeostatic functioning. In the extreme, an AIP system that maintains its integrity around disconnection is constantly *seeking something that is not there, but ought to be present*, and will manifest as features hitherto described in both pathological and non-pathological terms as self-defeating patterns of behavior.

Clients living with higher levels of biopsychosocial disconnection lack a tolerance for maintaining attention on their self-process and are prone to a

dissociation of awareness and attention, according to this theory. Clinical methods must constrain attentional resources such that social cognition and communication is enhanced under stress to maintain a focus on objectives in EMDR. A self-modeling system that allows for the flexible tracking of attention between therapist and client comprises *what ought to be present*, that has been missing. The attention schema is presented as a key component of a connected BPS-AIP system. There is strong evidence that its neurological substrates are associated with social cognition (Graziano, 2013) and presented here as a missing link that helps explain how the therapeutic relationship itself becomes a presence that makes a difference throughout the eight phases of EMDR.

The experiencing self is presented as a mental state distinct from the historical self state which is hypothesized to include amplified signaling from autobiographical memory stores. The self-model system that is presented as generating both mental states represents the psychological aspect of the BPS-AIP system and a major focus of EMDR methods. It is the absence of the experiencing self signal that organizes a client's behavior around the experience of others and leaves trauma unattended to. Activation of the innate healing system in this model begins with the interpersonal process of supporting the client to attend to their self-process.

Literature Review

The Systemic Biopsychosocial AIP Model

The adaptive information processing model of EMDR was first proposed by EMDR's founder Francine Shapiro. It was described in neurophysiological and psychophysiological terms reflecting the corresponding neuroscientific and neurobiological evidence at the time. It posits there is a neurological balance in a distinct physiological system that allows information to be processed to adaptive resolution through a process of memory association and integration into cognitive schemas making the information available to inform future behavior (Shapiro, 2018).

The innate healing system concept proposed by Shapiro (2018, p. 26) has always referred to a complex array of mechanisms of action, each of which has been more or less distinctly delineated. Similarly, the theory behind the AIP model is an array of *theoretical convergences* (Shapiro, 2018), suggesting distinct yet aligned theories depicting the innate healing system. In 2012, Cotraccia offered a systemic BPS-AIP model, which extended the AIP system beyond the neurophysiological and psychophysiological realms

to include self-systems and social systems (Cotraccia, 2012). In addition, the BPS-AIP model included a theoretical perspective that the attachment system itself is the innate AIP system. This paper adds additional theory to the BPS-AIP model and offers a precise mechanism of action.

The mechanisms of action in the extant EMDR research literature do not include a rationale for how the self-system of the client and therapeutic relationship may be causal variables in AIP. Those mechanisms of action include working memory, REM systems, orientation response, interhemispheric communication, frontal lobe activation, conditioning, anterior cingulate reciprocal inhibition, hippocampal remapping, limbic circuit depotentiation, thalamic temporal binding, and parietal lobe activation (Bergman, 2010) and more recently the Dialectical Perspective (Laub et al., 2017) and the Flash Technique (Wong, 2021).

The ones that allow for the analysis of the self and interpersonal relationships have involved neurological systems of attention, social cognition, and the updating of mental models. For instance, the *Network Balance Model of Trauma Resolution* (NBMTR) (Chamberlin, 2019) which implicates large scale neural networks and focuses on *system imbalance* trauma. It describes modes of mind and how large-scale networks require activation for memory consolidation via long-term potentiation.

Some theoretical models regarding mechanisms of action in EMDR either explicitly or implicitly consider the role of consciousness in AIP (Bergmann, 2010) and NBMTR (Chamberlin, 2019). The thalamocortical temporal binding hypothesis (Bergmann, 2010) in particular, depicts consciousness as synonymous with information processing. In his writing, Uri Bergmann refers to the use of *consciousness vs information processing* as potentially more pleasant to the ear because it *humanizes* the mind (Bergmann, 2012). This article offers a rigorous understanding of how consciousness itself is a mechanism of action in AIP.

“Stay Out of the Way, But Don't Go Away”

Utilizing subjective and intersubjective experiences may seem obvious to modern-day psychotherapists; however, this paper attempts to explain how consciousness defined as awareness and what we are aware of, is a *mechanism of action* in EMDR. As with consciousness studies in general, the so-called *hard problem* of consciousness (Chalmers, 1995) describes the challenge of explaining why consciousness occurs, which if explained would help us understand

how subjectivity and intersubjectivity matter. In brief, the hard problem of consciousness describes how the relationship between the physical body/brain and our experience may never be understood because experience does not seem to be reducible to some set of lower order processes (Chalmers, 2007). It appears to *just happen*, following other physical events that *are* causally explainable.

This is highly relevant to EMDR therapists' understanding of how model relates to mechanism in EMDR. For example, Shapiro states, "The invocation of a neurophysiological level is a simple recognition that this is where *all* change ultimately occurs" (2018, p. 15). Clients require interaction with the therapist to assist in supporting the alignment of awareness and attention along with self-modeling. If mental processes associated with subjective experience were not causally related to the processing of autobiographical memory, clinicians would operate in a mechanical fashion as if perturbing the brain with bilateral stimulation until there is some indication memory consolidation is achieved. However, if subjective experience can determine where processing resources are allocated, then the mental phenomenon clients report to clinicians along with the clinicians own subjective experience become tools that support the consolidation of memory. In other words, changes at the mental and interpersonal level are also implicated as salient sources of causality in AIP. A person who becomes aware of paying attention with someone else who is supporting their experience of being aware in this way, can be a stable mental state over time that makes a difference unto their neurology.

Evidence that the innate healing system of AIP may include psychosocial components can be found in the thalamocortical temporal binding hypothesis (Bergmann, 2018), the NBMTR (large scale network model) model (Chamberlin, 2019), and the parietal lobe activation model (Pearson, 2009). In Pearson's model for instance, the parietal lobe integrates information related to our own internal viscera, our body in general, and its relation to extra-personal space. Pearson cites how the parietal lobes are activated by attentional, memorial, and eye movement processes and reports positive clinical results in patients with neglect syndrome using sensory stimulation, including eye movements (Pearson, 2009). Pearson highlights how information processing related to the updating of working models of self and environment are facilitated with sensory stimulation occurring outside of conscious awareness. So-called "distortions of conscious awareness" involved beliefs of neglect patients who claimed they could move both sides of the body

when they objectively suffered from complete hemiplegia (paralysis of one side of the body). The beliefs, somatosensory experiences, and body schema were integrated using various forms of sensory stimulation to help update the representation of the self in a body, in a world, where they were paralyzed.

Attentional control, as well as sensory stimulation implicate the parietal lobe and the temporoparietal junction (TPJ; Pearson, 2009, p. 41). Interestingly, the most severe cases of neglect mainly involve damage to the TPJ (Graziano, 2013). In addition, near-infrared spectroscopy (NIRS) studies (Amano & Toichi, 2016a, 2016b) show changes in limbic/cortex activation that enhance cognitive control mechanisms during BLS. The superior temporal sulcus (STS) was hyperactivated when BLS was paired with positive memories and hypoactivated when paired with reliving traumatic events. In a NIRS study of EMDR treatment of phantom limb pain, the STS was noted as being implicated in the recall of traumatic memory during EMDR, a finding replicated from the authors' previous 2012 study (Amano et al., 2013). In these studies, sensory stimulation, attentional control, and episodic memory recall are links to the role conscious may play. Indeed, the STS and the TPJ may be among the primary neurological substrates of consciousness itself, and they are intimately related to social cognition according to attention schema theory (Graziano, 2013).

Attention schema theory describes a way around the hard problem of consciousness (Graziano, 2021, p. 1281). The author will now present attention schema theory as a theory that closes more of the gap between the neurophysiological and psychoneurological models of AIP and the systemic BPS-AIP model.

Attention Schema Theory and BPS-AIP

Attention schema theory posits that the brain contains a model or *schema* of itself paying attention (Graziano, 2013, 2018, 2021). The STS & TPJ areas are considered part of networks related to social cognition. Along with describing itself as paying attention, the attention schema predicts what will be paid attention to a few seconds into the future (Graziano, 2014). According to attention schema theory, we also construct a schema of others paying attention, which informs decision making by predicting what they are paying attention to, or not (Guterstam et al., 2021).

In attention schema theory, attention is conceptualized as a data handling tool that enhances some neuronal signals and inhibits others (Webb & Graziano, 2015). Some information will reach a threshold allowing for higher cognitive processing

and potentially conscious experience, where it can be accessed by language and inform our behavior. While consciousness is inclusive of awareness, awareness is the perception of paying attention (Graziano, 2019). However, attention is a broad, processing tool that is divided between the conscious and unconscious mind. While attention and awareness usually track closely together, they have been found to be dissociable in laboratory experiments (Graziano, 2020). Neurobiologically speaking, attention can be grabbed *bottom up* by salient stimuli (exogenous attention), as well as self-directed *top down* (endogenous attention) by cognitive processes (Wilterson et al., 2020). The control of attention is achieved via the attention schema through endogenous attention (Wilterson & Graziano 2021).

While attention schema theory is undecided regarding which schema came first, it postulates that having a rough sketch of ourselves paying attention evolved as part of social cognition. Consciousness is a computed set of information, inclusive of awareness, which the brain uses to track attention (Graziano, 2013). The experience of sensing and feeling what we are paying attention to, along with what we guess others are paying attention to, constitutes a robust *information-rich* therapeutic relationship. This very specific type of professional attunement is analogous to what is found in a securely attached dyad (Cotraccia, 2012).

Attentional Agency and Eye Movements

As Shapiro has clearly described, states of mind during EMDR procedural steps for trauma processing can support or inhibit AIP (Shapiro, 2018). Often, terms such as mindfulness and observing or witnessing mind are used to describe the mental attitude necessary to allow associations to flow without interruption. Two additional qualities of subjective experience salient to AIP are attentional agency and the sense of residing in one's own body. These qualities seem to be derived from the activation of the right TPJ (Graziano, 2021) and inferior parietal lobule (Graziano, 2017). Awareness, as defined above, allows for the endogenous control of attention, including increasing and decreasing attention and maintaining or removing attention from sources (Graziano, 2021). These subjective experiences constitute what the author describes as the *experiencing* state of mind.

Self-models that support attentional agency will ensure that information regarding our self-experience is more deeply processed, as they exert a *top-down* influence. The author asserts that, in order to support the self-system, EMDR clinicians must actively

manage the dissociation between awareness and attention that often occurs moment to moment when processing autobiographical memory. As an interface between the brain and therapist, self-models (personal) constrain the processing of information within the brain (sub-personal) and therapeutic relationship (interpersonal) during EMDR.

When a client's history includes sustained absence of an experiencing self-model, characterized in the client's subjective experience by the relatively frequent disruption of attentional agency and experience of body ownership, therapists are required to be even more involved by applying methods that support self/other consciousness. Specifically, these methods must foster awareness, here defined as the experience of paying attention, and support endogenous attention. In these situations, self-models implicitly thwart subjective experience, and exogenous attention reigns, leading to lapses in awareness. Clients communicate information lacking in important details regarding their self-process to share with others in meeting their self-regulatory and homeostatic needs.

There are many lines of research that capture the relationship between eye movements and information processing in the brain (Bergmann, 2010; Egeci & Ozgun, 2019; Patel & McDowall, 2016). Attention schema theory helps make yet another case for their use in EMDR. The attention schema uses low-level data, such as gaze direction, to combine with other information, such as an object, to predict what we and others are holding in attention. Gaze direction tracks very closely to attention, in sighted humans. Therefore, it is a reliable predictor of attentional state (Graziano, 2014, 2019). The tracking of eye movements in EMDR may act as a cue that could support endogenous attention during the use of bilateral sensory stimulation with eye movements. Furthermore, the use of auditory or tactile stimulation may also function as a behavioral cue to foster the tracking of attention endogenously, explaining why all forms of sensory stimulation can be effective in EMDR.

For instance, a saccade of eye movements perturbs the client as an external stimulus (exogenous attention) is engaged; then, they are requested to "follow my hand," which requires endogenous attention. This process may tune the client's attentional network towards the integration of awareness and attention. In recent studies, other cues, such as emotional expression, have been found to be examples of a deeper level of processing that constrains attention when accounting for errors in the predictions of the attention schema (Bio & Graziano, 2021), allowing awareness and attention to remain aligned.

According to attention schema theory, paying attention is always a part of social cognition (Graziano, 2013) or what is often called theory of mind. Our brain constructs models of ourselves and others to predict behavior in social interactions. It is significant that the therapist “stay out of the way,” as instructed by the protocol, and ask between saccades, “What comes up now?” This allows the client to be in a heightened state of self-consciousness. They are tracking their *own* gaze and sensing what *they* are paying attention to, including *their own* emotional responses. The author sometimes inserts, “What is your *attention drawn to now?*” to determine if bottom-up attentional signaling is dominating their experience and to support top-down attentional control.

Trauma as Absence

Trauma as absence is both a concept and a definition of trauma that emphasizes how self-models implicitly biased toward a dissociation of awareness and attention thwart AIP. Endogenous control of attention breaks down when there is a lack of awareness of relevant stimuli that provide cues to the attention schema critical to correcting prediction errors (Witenson et al., 2021). What is absent in this synthesis of attention schema theory and BPS-AIP theory, is an attention schema for self. Included in the information required for processing autobiographical memory is the experience of the self in the present, and when it is relatively absent due to attentional resources being drawn to the predicted attention of other (via an attention schema of other integrated with the self-model), unprocessed autobiographical memories remain implicitly stuck. The phrasing of the concept is intended to place the emphasis of therapeutic efforts on identifying the loss of attentional agency that over time renders the client unable to consistently align awareness and attention while tracking both the attention of self and other.

In a hypercomplex, representational AIP system, information flows within and *between* levels of processing, dynamically influencing the trajectory of the processing over time (Cotraccia, 2012). Autobiographical memory is an internal object the author asserts can act like external stimuli by grabbing exogenous attention. In this scenario, the *unprocessed* memory is the source directing exogenous attention in the absence of awareness. Such a misalignment of attention and awareness resulting in a loss of self-consciousness is trauma as absence. It’s as if the brain is trying to process something of which the client is not aware.

For some clients, the pathology is a varying mix of *object* (memory) and *subject* (self-system), depending on the subjective history of the client and presently available resources for biopsychosocial connection.

Remediating Extra-Personal Attunement

Definition. Attention and awareness can be dissociated under stress (Wilterson et al., 2020) leading to three primary problems; 1. a loss of stability of attention on task-relevant states; 2. decreased ability to transition away from a task-irrelevant state; and 3. a vulnerability to be perturbed by external influences (Graziano, 2016, p. 842). Clients with a history of insecure attachment would most likely be found to display patterns of disrupted tracking of attention and awareness. The attachment literature is replete with examples of external stimulus-driven disruptions of attention and body awareness stemming from the behavior of caregivers presenting with dysregulated states of mind (Ainsworth & Bell, 1970; Bowlby, 1969; Main, 2014; Solomon & George, 1999). These clients have subjective histories full of experiences in which external demands for attention displaced attentional resources outside of the client’s self-experience.

Here, the concept of *extra-personal attunement* is offered to describe how the experiencing self-awareness of clients is compromised, rendering the therapeutic dyad vulnerable to biopsychosocial disconnection. The definition of extra-personal attunement is *a preoccupation with the thoughts, feelings, and behaviors of another person, at the cost of one’s own intrapersonal attunement*. Extra-personal attunement describes the subjective and inter-subjective experience of clients who, to a greater or lesser degree, lack a tolerance for intrapersonal and interpersonal attunement sufficient to successfully consolidate autobiographical memory. It is an expression of the implicit self-other organization, which, either momentarily or as a pattern of relating, is indicative of the dissociation of awareness and attention.

The extent to which we are extra-personally attuned theoretically correlates to the level of biopsychosocial disconnection we experience over time. Clients need interpersonal resources that support self-other consciousness, over time, to satisfy their self-regulatory and homeostatic needs. In the absence of such resources, their brain remains outside informationally-rich relationships conducive to AIP. Those clients are in need of help tracking and predicting where their attention goes in order to recalibrate their attentional resources in support of the endogenous control of attention, especially around body awareness.

EMDR therapists, therefore, need to engage clients in a manner that supports the enhancement or development of intra- and interpersonal attunement as specified above. Namely, by supporting the alignment of attention and awareness throughout all eight phases of EMDR.

The author has developed an integrated system of EMDR techniques designed to mediate extra-personal attunement, promote self-integration, support interpersonal boundaries outside of therapy that reduce impingements on attentional agency at home, work, and school, and replenish the flow of information and energy that maintains the experiencing self process. Given space limitations, these methods are not developed in this article. However, the author has applied these methods for several years and recent workshop participants who have been taught to apply these methods have reported positive treatment outcomes in follow-up consultations. These methods involve the application of behavioral repertoires mainly focused on tracking attention and controlling attention to achieve more robust processing of self-experience or to diminish overly amplified signaling of the nervous system. These shifts in subjective and, therefore, intersubjective experiences, are accessible to both client and clinician. This makes the methods amenable to adaptation for use outside of therapy and allow family members and loved ones to participate in reporting progress and supporting the therapy as described in the clinical examples below.

Two Adaptive Systems, But Only One Adaptive Long-Term Goal

The author considers enhancing *biopsychosocial connectivity* as the overall goal of EMDR. The objective is a mutually informing process of remediating the extra-personal attunement and trauma processing. In theory, any individual client would experience fluctuating impingements on their attentional resources at the level of the brain, self-system, and interpersonal relationships, each thwarting or supporting connection—connection here referring specifically to the subpersonal, personal, and interpersonal capacity to process information related to the present and past by flexibly controlling our attention and manipulating the attention of others.

Extra-personal attunement is the principal identifying attribute of a *disconnected-AIP system* (D-AIP). Within such a system, a client is *attending to a stimulus without being aware of it*, while in the midst of a social system that also remains unaware of what needs to be processed. In contrast, a *connected-AIP system* (C-AIP)

is defined by the client's tolerance of intrapersonal and interpersonal attunement, which prevents disconnection from becoming characteristic and allows for what needs to be processed, to be processed. These concepts are intended to be of heuristic value in capturing what the author believes is the behavior of a dynamic system, which includes the complex array of brain, self-system, and interpersonal dynamics over time. Just as categories of attachment are useful to conceptualize statistically stable patterns of relating while in reality any one individual is likely to display elements of more than one of them and move between them depending on present circumstances and subjective history.

In biological terms, some clients would be understood to have undergone ontogenetic (developmental) changes that have created a goal (biopsychosocial disconnection) at odds with their phylogenetic (evolutionary) goal of biopsychosocial connection (Cotraccia, 2012). The sustained estrangement from, and subsequent intolerance of, biopsychosocial connection encapsulates the cadre of clinical challenges in doing EMDR outside of simple PTSD with a securely attached client. It also captures the interplay of brain, self, and relationship processes, which manifests as an array of later-life physiological problems that begin as psychosomatic symptoms (Bergmann, 2010). The underlying biological imperative to participate in a C-AIP system generates the tension that brings clients to therapy; for, processing autobiographical memory to adaptive resolution is, in this model, the biological predisposition that can may take a lifetime of biopsychosocial disconnection to dispose of.

Self-Integration and Attachment Repair are Standard Methods of BPS-AIP

Attachment repair and self-integration (parts work) describe the additional methods that the biopsychosocial-AIP model considers essential for *any* successful EMDR psychotherapy experience. The self-system and the therapeutic relationship are components of the innate healing system; as such, they are assessed for signs and symptoms indicating the client's *global level of biopsychosocial connectivity* (Cotraccia, 2018). For example, the ability of the client to maintain self and other awareness as they flexibly shift the focus of attention between therapeutic tasks with the therapist. If they can do this, the pair constitute a C-AIP system capable of executing the formal *procedural steps for trauma processing*. Any signs of a symptom related to their attentional agency being impinged upon would be likely clinical attributes worthy of notice and attention.

Awareness influences behavior by enhancing some representations we are attending to, thereby degrading others through a process of selective signal enhancement (Graziano & Kastner, 2011). The therapist places constraints on the therapeutic relationship, which allows the dyad to be a C-AIP system by adjusting patterns of tracking attention, keeping them in an *informationally-rich* interpersonal state of attunement. The ongoing attunement and restructuring of mental models of self that support the flexible tracking of attention from therapist to client and back, is itself a form of AIP.

While Shapiro did not explicitly identify self-models or the therapeutic relationship as part of the *innate healing system* in her AIP model, she extensively referred to what is often termed *the mindful, nonevaluative, observer stance* (Shapiro, 2018) as a necessary self-capacity required for both client and clinician to participate in EMDR. In addition, she well documented *global changes in self-concept* (Shapiro, 2018) as outcomes of effective EMDR. In the present model, activation of the biopsychosocial-AIP innate healing system is identified by the presence of mutual states of *autonoetic consciousness* (Tulving, 2000), often described by the capacity for *mental time travel*. This is achieved by the client through the alignment of attention and awareness, while attention toggles between past, present, and future focus.

This requires the therapist to be robustly aware and able to constrain the attention of the client, over time, without disrupting the flow of integrating information about the past, present, and future. Many clients with trauma histories do not experience themselves subjectively in the sense that they can *take mental possession of* (Graziano, 2014) their *moment-to-moment* experience as required in EMDR (Korn & Lalotitis, 2012). When focusing on dual attention (i.e., inside/outside) even without bilateral sensory stimulation, we are *processing* information that allows our clients to have a current subjective experience of self. Self is conceptualized here as a process, not a thing (Damasio, 2010; Metzinger, 2003). As such, it requires specific activation and maintenance to sustain it. This is specifically necessary when introducing a target memory *with* dual attention focus and bilateral sensory stimulation for formal processing.

Self-Models and Self-Process: The Control Knobs of the BPS-AIP System

In effort to more clearly integrate BPS-AIP theory, mechanism of action, model, and methods, new

terms are offered below to reduce clinician confusion within this system of thought when applying methods informed by it. It is worth repeating here that both the attention and body schema are descriptive *and* predictive mental models that implicitly encode the anticipated location of our and others' attention and the state of the body, respectively (Wilterson & Graziano, 2021). The author hypothesizes that self-models include a larger mental model consisting of self-knowledge, the body schema, and attention schema of self and other. These self-models are hypothesized to bias the quality of attention toward content salient to self-regulatory and homeostatic needs or the perceived attentional state (with perceived mental contents) of others' minds.

The component self-models of an integrated self-system, including content related to identity and self-ownership, include the *experiencing self* (EXS), a singular present-moment state associated with the perception of the senses in a resting state. In addition are *Historical selves* (HXSs), those self-models that are internal representations of self organized around characteristic and sophisticated behavioral repertoires imbued with identity and associated with autobiographical memory. Lastly are, *protective historical selves* (PHXS), which describe a HXS associated with defensive behavioral repertoires.

In a connected AIP system (C-AIP), there is a balance of information regarding self and other process. The EXS model provides the linkage of information regarding the self-regulatory and homeostatic signals from the body proper with HXS models, which allows for the correcting of errors in aligning attention and awareness when a HXS model begins to dominate resources for signaling. In addition, this linkage of information about present-oriented behavior can be integrated with the perceived experience of others to promote interpersonal integration.

Establishing intersubjective states of mutual autonoetic consciousness is a clinical objective that cannot be taken for granted. Research supporting attention schema theory has shown that the attentional schema model of self can be dissociated from the attention schema model of other (Graziano & Kastner, 2011). *Disconnected HXS* (DHXS) and *disconnected PHXS* (DPHXS) describe those self-models that lack an attention schema of self while maintaining a schema of other, which prevents the client from making corrections relevant to optimal self-regulation and homeostatic needs. This renders the client vulnerable to self-abandonment in one or many areas of life, depending on subjective history. These historical selves are biased to unconsciously shift attention to

what they predict *others have paid attention to* throughout the client's development.

This AIP model of a self-system assists the clinician heuristically in organizing a treatment plan according to the current and sustained trends of the client's self-process. It portrays fluctuating patterns of biopsychosocial connectivity, over time, in subjective terms. As a heuristic, it helps to conceptualize the system and plan interventions to include both parts work and attachment repair, in the service of constituting a connected AIP system capable of engaging in the procedural steps for trauma processing.

For example, high levels of biopsychosocial connectivity would be depicted as the presence of the EXS process informing the HXS and PHXS process in a C-AIP system. Whereas, a D-AIP system would be depicted as involving transient EXS process subject to domination by DHXSs and DPHXSs.

Clinical Examples

Example #1. A 37-year-old client begins EMDR therapy to alleviate symptoms of PTSD resulting from a motor vehicle accident that occurred 2 years prior. This client's evaluation reveals an attachment history characterizing a secure attachment status, symptoms of simple type 1 PTSD, no signs of dissociation, and a robust social support system in place. In session, the client is able to maintain sustained interpersonal attunement with the therapist and intrapersonal attunement with their self.

When reviewing their history, they display signs of auto-noetic consciousness in the office, exemplified by their ability to mentally travel through time and recall significant events in their life. They relay these events while maintaining their awareness of the therapist and ongoings of the office. They are also able to describe the relevance of past memories on their current life circumstances. The exception is the car accident. When directed to give a specific history of the accident, the client loses focus, wells up with emotion, and then stares blankly at the therapist.

The client reports no history of autonomic nervous system hyperarousal or hypoarousal outside of circumstances involving driving. During the assessment phase of the procedural steps for trauma processing, the client is asked (having previously discussed HXS) if there are any HXS associated with the negative cognition identified with the target image. The client answers, "No." The trauma processing proceeds without looping or interruption ending with a clear body scan.

In this example, the client entered EMDR therapy with the internal and external resources to engage as a

C-AIP system with the therapist. When asked to complete mindfulness exercises, body scans, and employ the safe/comfortable place exercise, the client's EXS awareness was robust and no signs of DHXSs emerged. The client would be considered as having CHXSs not likely to be a significant focus of treatment. While attachment repair and parts work are not explicitly required to alleviate the PTSD symptoms, the professional attachment of the dyad, including the attachment of the EXS to HXS was at play, sustaining an information-rich intersubjective experience. The trauma processing proceeds in a straight forward manner, the client is able to flexibly shift their attention between the inner and outer world, and the brain has time and access to information salient for memory consolidation.

Any disruptions in auto-noetic consciousness are likely to be noticed and attended to by the dyad. Upon re-evaluation, the client reports sustained improvement and other qualitative signs of progress, not necessarily targeted in the treatment plan. For instance, the client notes increased confidence in participating in psychotherapy and trust that it is safe to seek help. The client requests further sessions to work on "relationship issues."

Example #2. A 37-year-old client begins EMDR therapy to alleviate symptoms of PTSD resulting from a motor vehicle accident that occurred 2 years prior. This client's evaluation reveals an attachment history characterized by signs of insecure attachment, symptoms of simple type 1 PTSD, symptoms of adjustment disorder with mixed anxiety and depression, no signs of dissociation, and a marginal social support system in place. In session, the client usually maintains interpersonal attunement with the therapist and, with assistance, can sustain intrapersonal attunement to their self.

When reviewing their history, they display some signs of auto-noetic consciousness in the office. When they recall significant events in their life, they sometimes stray to other topics and ask the therapist for clarification on the task. They relay these memories with some interruption in their awareness of the therapist and ongoings of the office. They also describe past memories without reporting much insight on how those memories have informed current life circumstances. When directed to give a specific history of the accident, the client loses focus, wells up with emotion, and then stares blankly at the therapist.

The client reports no history of acute autonomic nervous system hyperarousal or hypoarousal outside of circumstances involving driving; however,

they do endorse high levels of anxiety and depression “at times” throughout their history. During the assessment phase of the procedural steps for trauma processing, the client is asked (having previously discussed HXS) if there are any HXS associated with the negative cognition identified with the target image. The client answers, “Yes, a younger me that remembers feeling like a burden to my parents.” The trauma processing proceeds with the therapist asking the client to include the “younger me” HXS in assessing the SUDS, VOC, and body scans. When the client loops while processing an associative channel, the HXS is consulted and the interruption in processing is alleviated. After the desensitization, installation, and body scan phases are completed, the therapist provides psychoeducation about self-integration and coaches the client on how to build compassion for the HXS identified.

Upon re-evaluation, the client reports sustained improvement and also the emergence of a memory thematically similar to a significant association made during the previous desensitization phase and the HXS. The dyad decides to process that new target memory and any others that emerge of a similar theme, before resuming work on the car accident, by targeting recent triggers and a future target. The client requests their spouse attend a session for support and to learn about EMDR because the spouse “might be interested in trying it” for their own benefit.

In this example, the client entered EMDR therapy requiring minimal attachment repair and self-integration to engage as a C-AIP system with the therapist. When asked to complete mindfulness exercises, body scans, and employ the safe/comfortable place exercise, the client’s EXS awareness was robust and the client was able to shift the DHXS to a CHXS with minimal intervention. The changes in personal level AIP were noticeable to the client’s spouse, who benefitted from the increase in biopsychosocial connectivity now available at home, which prompted a request for clinical contact.

Example #3. A 37-year-old client begins EMDR therapy to alleviate symptoms of PTSD resulting from a motor vehicle accident that occurred 2 years prior. This client’s evaluation reveals an attachment history characterizing an insecure attachment, symptoms of simple type 1 PTSD, symptoms of generalized anxiety, moderate signs of dissociation, and very little social support in place. The client shows obvious signs of extra-personal attunement as they question their own performance in therapy, ask for the

therapist’s opinion on it, and worry about how others will think of it.

When reviewing their history, they are avoidant, distracted and report explicitly that they “do not want to talk about the abuse.” The client’s trauma/loss list is scant and vague. The client reports a history of acute autonomic nervous system hyperarousal and hypoarousal, along with circumstances involving driving. During the assessment phase of the procedural steps for trauma processing, the client is asked (having previously discussed HXS) if there are any HXS associated with the negative cognition identified with the target image. The client answers, “Yes, a younger me that remembers feeling like a burden to my parents, a critical me (which they name *The Tyrant*), and an infant in a basinet in the corner of my mind’s eye.”

Trauma processing proceeds only after weeks of attachment repair and parts work. In particular, the client has strengthened their identification with their EXS awareness. When looping occurs in trauma processing, it is minimized by refreshing the EXS awareness and shifting the DHXS/PHXS to a functional CHXS/PHXS. Prior to trauma processing, DHXSs were included in preparation exercises, including the development of a separate safe/comfortable place for the younger DHXS, and self-compassion work for the *Tyrant* PDHXS.

As the client’s level of extra-personal attunement is reduced and they are able to tolerate intrapersonal and interpersonal attunement in session, they progressively express feelings of loss and grief for the lack of connection in their past and current relationships. This client’s therapy is disrupted at times by interpersonal crisis at home and work, and they require significant cheerleading and moral support to continue EMDR. The client lives mainly in a D-AIP system outside of therapy and requires longer-term treatment to achieve enhanced levels of secure attachment and self-integration that reset their status to one of global and self-sustained biopsychosocial connectivity.

Discussion

The organizing principle of a D-AIP system is the *absence* of the EXS. As a result, the attention of clients in a D-AIP system is implicitly geared to seek needs/objects that fulfill needs/objects of someone else. Satiating someone else’s needs, of course, is impossible when such needs *stand in* for the needs of client. Therefore, the pull to seek positive feeling states by satisfying others is inherently insatiable. By applying direct interventions (e.g., attachment repair, parts

work, trauma processing) upon a substrate of biopsychosocial connectivity within an informationally-rich therapeutic relationship, the most entrenched D-AIP system will re-organize around the EXS, the *efficient use of mental energy* (Van der Hart et al., 2006), which is inherently satisfying.

The interplay of applying direct interventions while constraining attentional resources to maintain an informationally-rich therapeutic relationship is what causes memory consolidation in EMDR and allows the system to re-orient along the lines of its ontological set point. This inherently non-linear perspective is relevant to both simple and complex PTSD. The difference in treatment is the time and investment in establishing the psychosocial resources that support memory consolidation. When optimal psychosocial constraints are in place before EMDR begins, direct trauma processing, even in the most complex cases, proceeds unimpeded.

We are an organism designed to be aware of our past, present, and future. That is to say, to experience that we are paying attention, and when our attention is drawn away without our control, as we travel through both objective and subjective time. Autobiographical memory consolidation requires *two people* be present to correct errors in time, space, and experience: one person who can own their present subjective experience (client); and another person (EMDR therapist) who is directly using their subjective experience to monitor and guide the client in aligning their awareness and attention. The goal is to process memory and make it available in service of self-regulatory and homeostatic functioning. As such, they participate in a most sophisticated form of bonding, adaptive information processing that enhances living.

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