ERA-Institute: Embodied, Restorative, Adaptive.

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Introduction (with citations)

Contemporary models of psychological change, resilience, and recovery increasingly emphasize adaptability, flexibility, and self-regulation as core outcomes of mental health interventions (Bonanno, 2004; Kashdan & Rottenberg, 2010). Constructs such as psychological flexibility and resilience are widely regarded as transdiagnostic mechanisms of well-being (Hayes et al., 2006). However, interventions explicitly targeting adaptability often produce inconsistent or fragile outcomes, particularly in populations affected by chronic stress, trauma, or addiction (van der Kolk, 2014; Porges, 2011).

One limitation of prevailing approaches is the assumption that adaptability can be cultivated as an isolated cognitive or behavioral skill. This assumption overlooks the extent to which chronic stress and trauma disrupt interoceptive processing, autonomic regulation, and energetic capacity (McEwen, 2007). When these foundational systems are compromised, efforts to increase flexibility or self-control may intensify dysregulation rather than resolve it, contributing to burnout, dissociation, or relapse (Schauer & Elbert, 2010).

Research in embodied cognition and affective neuroscience demonstrates that cognition and emotion are inseparable from bodily processes (Damasio, 1999; Barrett, 2017). Interoceptive awareness supports emotional regulation, decision-making, and a sense of agency, while impairments in bodily awareness are associated with compulsive behavior and affective instability (Craig, 2009; Verdejo-García et al., 2012). Despite these findings, embodiment and physiological restoration remain under-integrated within dominant models of adaptive change.

The present paper proposes a developmental framework consisting of three interdependent capacities: felt embodiment, restoration, and adaptability. The framework conceptualizes adaptability not as a primary intervention target, but as an emergent outcome arising from restored nervous system capacity and embodied self-awareness. By integrating insights from stress physiology, trauma research, and embodied cognition, the model offers a developmentally sequenced account of sustainable human change.

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Conceptual Model: Felt Embodiment, Restoration, and Adaptability

Overview of the Developmental Sequence

The model proposes a directional developmental relationship in which felt embodiment enables restoration, and restoration enables adaptability. While reciprocal influences are acknowledged, adaptability is hypothesized to be constrained when earlier capacities are underdeveloped. This proposition aligns with evidence indicating that autonomic dysregulation and interoceptive deficits limit emotional flexibility and stress recovery (Thayer et al., 2012).

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Felt Embodiment

Definition.
Felt embodiment refers to the capacity for interoceptive awareness and sustained presence with internal sensory, affective, and physiological states.

Theoretical grounding.
Embodied cognition research demonstrates that bodily signals are integral to perception, emotion, and decision-making (Damasio, 1999). Interoception, mediated primarily by the insular cortex, provides critical information for emotional awareness and self-regulation (Craig, 2009). Reduced interoceptive awareness has been linked to addiction, dissociation, and impaired impulse control (Verdejo-García et al., 2012).

Functional role.
Within the model, felt embodiment allows internal states to be recognized as informative rather than threatening. This capacity enables regulation to emerge from experience rather than being imposed cognitively.

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Restoration

Definition.
Restoration refers to the re-establishment of baseline autonomic regulation and energetic capacity following prolonged stress or trauma.

Theoretical grounding.
Chronic stress increases allostatic load, degrading regulatory systems and narrowing behavioral repertoires (McEwen, 2007). Polyvagal theory emphasizes the role of autonomic state in shaping perception, social

engagement, and defensive responses (Porges, 2011). Trauma research consistently shows that unresolved autonomic dysregulation constrains emotional and behavioral flexibility (van der Kolk, 2014).

Functional role.
Restoration replenishes regulatory capacity, allowing the nervous system to tolerate variability and uncertainty. Without restoration, adaptive responses require excessive effort and are vulnerable to collapse.

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Adaptability

Definition.
Adaptability is the capacity to flexibly modulate emotional, cognitive, and behavioral responses in accordance with situational demands.

Theoretical grounding.
Adaptability overlaps with resilience (Bonanno, 2004) and psychological flexibility (Hayes et al., 2006), but is here framed as an emergent property dependent on physiological and embodied conditions. Heart rate variability research suggests that greater autonomic flexibility predicts better emotional regulation and stress recovery (Thayer et al., 2012).

Functional role.
Adaptability represents the outward expression of restored and embodied capacity, characterized by faster recovery from stress, increased response variability, and learning through change.

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Developmental Hypothesis

The model hypothesizes that adaptability emerges reliably only when felt embodiment and restoration are sufficiently established. Attempts to cultivate adaptability without addressing earlier stages are expected to produce brittle or context-dependent outcomes, consistent with findings in trauma and addiction research (Schauer & Elbert, 2010; Verdejo-García et al., 2012).

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