

**OF NEURONS AND KNOWINGS:
CONSTRUCTIVISM, COHERENCE PSYCHOLOGY
AND THEIR NEURODYNAMIC SUBSTRATES**

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Abstract. This first of three articles creates a framework for bringing the phenomenology of psychotherapy into fruitful coordination with neuroscientific knowledge. We suggest that constructivism is a conceptual paradigm adequate to this task. An examination of the main features of psychological constructivism and of neural constructivism serves to demonstrate their strong convergence. Attention then turns to a particular implementation of psychological constructivism, the relatively recently developed psychotherapeutic system known as coherence therapy or coherence psychology. We provide an account of the extensive neuroscientific evidence supporting this system's model of clinical symptoms as being produced by coherent, unconscious knowledge structures held in implicit, subcortical memory. Suggestions for research that could test our analysis are the focus of our conclusion.

**DEPOTENTIATION OF SYMPTOM-PRODUCING
IMPLICIT MEMORY IN COHERENCE THERAPY**

In press

Bruce Ecker and Brian Toomey

Abstract. In this second of three articles we suggest criteria defining the optimal use of neuroplasticity (synaptic change) in psychotherapy and provide a detailed examination of the use of neuroplasticity in coherence therapy. We delineate a model of how coherence therapy engages native mental processes that (a) efficiently reveal specific, symptom-generating, unconscious personal constructs in implicit emotional memory, and then (b) selectively depotentiate these constructs, ending symptom production. Both the psychological and the neural operation of this methodology are described, particularly how it defines and follows the built-in rules of change of the brain-mind-body system. On neuroscientific grounds we suggest a fundamental distinction between transformative change, which permanently eliminates symptom-generating constructs and neural circuits, and counteractive change, which creates new constructs and circuits that compete against the symptom-generating ones and is inherently susceptible to relapse. We propose that coherence therapy achieves transformative change through the reconsolidation of memory, a recently discovered form of neuroplasticity, and present evidence consistent with this hypothesis. Subjective attention emerges as a critical agent of change in both the phenomenological and neural viewpoints, profoundly connecting these two domains.

**COMPETING VISIONS OF THE IMPLICATIONS
OF NEUROSCIENCE FOR PSYCHOTHERAPY**

In press

Brian Toomey and Bruce Ecker

Abstract. In this third and final article of a series on the confluence of neurobiology and psychotherapy, we consider three current, influential interpretations of the implications of neuroscience for psychotherapy: pharmacological treatment, reparative attachment therapy, and the cognitive regulation of emotion and behavior. We critically examine these clinical strategies, reviewing efficacy data, neuroscientific research, and the model of symptom production by coherent implicit memory as articulated in coherence psychology. We argue that according to current knowledge, (a) each of the three clinical interpretations of neuroscience implements only part of the brain's known capabilities for change, (b) those capabilities are more fully utilized and can yield greater clinical effectiveness for the majority of psychotherapy clients through a therapeutic strategy of selective depotentiation of implicit memory, as epitomized by coherence therapy, and (c) counteracting an implicit memory, whether cognitively or psychopharmacologically, is only moderately effective, is inherently susceptible to relapse, and entails a range of undesirable collateral effects.