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***Memory Reconsolidation Research Confirms and Advances the Corrective Experience Paradigm***

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For adherents of the corrective experience paradigm, the findings of memory reconsolidation research by neuroscientists might seem too good to be true. That research, launched in 1997–2000, has developed explosively since I began closely studying it in 2005. According to some of the clinical field's longstanding, ingrained assumptions about change, these lab findings aren't even possible.

For example, Hebb's law—"neurons that fire together, wire together"—underlies the assumption that in order for healthy new beliefs, behaviors and states of mind to replace old, unhealthy ones, it's absolutely necessary to enact repetitions of the new pattern for months. The preferred new pattern competes against the unwanted pattern, which remains retriggerable and retains its own memory encoding. The myriad repetitions build up the preferred new pattern to win that competition.



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## *On the Corrective Emotional Experience (continued)*

That’s what I term the counteractive process of change. It requires the ongoing effort of choosing and enacting the preferred pattern. However, a decisive, stable change proves elusive through this counteractive process, as therapists know too well. Relapses occur because the old, unwanted pattern is rooted in potent, subcortical emotional learnings that are influenced little, if at all, by the preferences of the neocortex (the conscious personality).

Therapists also know—because we have witnessed it in clients and in ourselves—that a very different process of transformational change exists, manifested as three unambiguous markers: a long-term pattern of distress or problematic behavior completely ceases to occur in the situations that had reliably evoked it; the accompanying emotional activation or distressed ego state likewise disappears; and those two changes persist permanently and effortlessly. This liberating, relatively sudden shift brings unprecedented well-being.

The corrective experience (CE) paradigm is essentially the quest to identify the critical ingredients and process that produce such transformational change. What could be more important to the psychotherapy field than fulfilling that quest, enabling therapists everywhere to produce such results with regularity?

Alexander and French first gave that quest firm form in 1946 and, based on clinical observations, identified specific factors for inducing transformational change. Then Goldfried in 1980 recognized the universality of those specific factors across therapy systems and also across all experiential channels, beyond the “emotional” channel emphasized in 1946. Many others have continued to develop the CE paradigm.

Transformational change clearly is not governed by Hebb’s law. What is the neurological mechanism of change that does govern it, and what induces that process?

We now have empirical answers to those key questions. Memory reconsolidation is the brain’s innate process for transforming what was previously learned and is now carried in memory. In particular, it allows a target emotional learning to be directly, fundamentally and permanently unlearned, nullified and “erased,” producing the three markers of transformational change defined above.

Nearly a century of extinction research appeared to show that wasn’t possible. Researchers finally happened to do exactly what the brain requires for neurochemically changing the neural encoding of an emotional learning from its stable, “consolidated” state in long-term memory, to a destabilized, de-consolidated, labile state that is susceptible to immediate re-encoding by a contradictory, disconfirming experience.

However, if the target learning is not in a de-consolidated neural state when the disconfirming experience occurs, there is no re-encoding of the target learning. Then the contradictory experience merely creates its own separate encoding and competes against the unwanted target learning. Sound familiar? Yes, that’s counteractive change, and that’s why guiding our clients to learn and build up preferred states, beliefs and behaviors tends to be only counteractive and is not a reliable pathway to transformational change.

The discovery of an innate process of de-consolidation was an upheaval in the neuroscience of learning and memory. It was found that the de-consolidated state lasts for about 5 hours, after which the neural encoding re-consolidates automatically. That’s why this process was named memory reconsolidation (MR).

It took neuroscientists four more years, until 2004, to identify the specific experiences required by the brain for triggering de-consolidation. The MR process is neurological, but it is experience-driven, controlled in a top-down manner by behavioral experiences. It was Héctor Maldonado’s group in Argentina that first demonstrated, in an animal study, that de-consolidation is triggered by the simultaneous occurrence of two subjective experiences: the experience of the reactivated target learning, plus an experience of perceiving that the world is not as the target learning knows and expects. That combination of experiences is referred to as memory mismatch and also as prediction error by neuroscientists. De-consolidation is almost immediate after mismatch occurs. The mismatch requirement was subsequently confirmed many times (see references online: <https://bit.ly/2b8lbJH>). Those studies decisively falsified the pre-2004 notion that de-consolidation occurs from reactivation alone, and from every reactivation. That misconception still shows up in the literature.

Do these lab findings apply to psychotherapy? The fact is, the necessity of a mismatch experience for inducing



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## ***On the Corrective Emotional Experience (continued)***

transformational change was detected by psychotherapists long before neuroscientists recognized it: The both-at-once experience of the reactivated target learning and a disconfirmation of it is a specific ingredient called for by Alexander and French. Now we have rigorous, empirical confirmation of that requirement from brain science.

We call it a juxtaposition experience in Coherence Therapy, which I co-developed with Laurel Hulley for focusing from the first session of a new client on facilitating juxtaposition experiences with efficiency. We and colleagues in the Coherence Psychology Institute have published many case examples showing the three markers of transformational change ensuing from juxtaposition experiences, for a wide range of presenting symptoms (references listed at <https://bit.ly/2tKXdyX>). Neuroscientists regard those three markers as strong evidence that MR and erasure have occurred. In many cases, powerful, lifelong emotional learnings completely wither immediately, sometimes as early as the client’s first or second session. In other cases, the target learning does not immediately lose all force in response to a juxtaposition experience because it is entangled with other potent schemas not yet disconfirmed.

From extensive clinical experience with this process, it’s clear to us that the brain is always equipped for unlearning and nullifying its longstanding, negative emotional learnings. That is an innate, profound resilience. The fact that target learning reactivation is required explains why emotional arousal has been found to have a strong, positive correlation with effective therapy: While not all of a person’s implicit learnings are emotional, the ones involved in therapy almost always are, so reactivation naturally entails experience of that accompanying emotion. The task of skillfully guiding the emotional process can therefore loom large in therapy, even though the MR process does not itself inherently involve or require emotion, as shown in many lab studies using non-emotional target learnings.

To utilize the potency of MR, therapists have to meet the brain’s requirements by facilitating a disconfirmation that is both experiential and highly specific to the client’s unique target learning. Specificity of disconfirmation is critical. That’s another key guideline for therapists. For example, the therapist’s empathy and kindness can disconfirm the emotional learning maintaining a client’s symptom if that emotional learning was created by interpersonal mistreatment, but not otherwise; and not every type of interpersonal mistreatment creates learnings disconfirmable by a client-therapist relationship. In Coherence Therapy we’ve mapped out a methodology for finding potent disconfirmations of any target learnings.

It is momentous that the psychotherapy field now has an empirically confirmed process of erasure (ECPE), the set of specific experiences that the brain requires for transformational change. The ECPE is defined transtheoretically and independently of any procedures or methods for inducing those experiences. No type of therapy is privileged (though not all facilitate the ECPE equally). We’ve been examining case examples of transformational change from diverse therapy systems and have found that the steps of the ECPE are detectable in every case scrutinized so far (ten different systems; see <https://bit.ly/15Z00HQ>). In that way, support is building for our hypothesis that the ECPE is always the cause of transformational change and unifies the panoply of psychotherapies.

Also, by providing empirical confirmation that specific factors are necessary for transformational change, the MR findings are a direct refutation of non-specific common factors theory. That does not mean non-specific factors are unimportant for effective therapy. The point, rather, is that transformational change results from certain specific factors required by the brain.

A comprehensive, rigorous account of all this good news and more is provided in my recently published journal article, “Clinical Translation of Memory Reconsolidation Research,” downloadable here: <https://bit.ly/2Mmmvg1>.

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