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A Clinician's Perspective on Memory Reconsolidation as the Primary Basis for Psychotherapeutic Change in PTSD

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Abstract

Lane and colleagues' proposal that psychotherapeutic change comes about through memory reconsolidation is compelling; however, the model would be strengthened by the inclusion of predictions regarding additional factors that might influence treatment response, predictions for improving outcomes for non-responsive patients, and a discussion of how the proposed model might explain individual differences in vulnerability for mental health problems.

Lane and colleagues (in press) provide a well-constructed argument that psychotherapeutic change primarily comes about through the updating of emotional memories *via* memory reconsolidation. We particularly appreciated the discussion of psychotherapists facilitating the process of memory reconsolidation as a specific mechanism typically attributed to the so-called "non-specific" effects of psychotherapy or to the therapeutic relationship in general. As clinical psychologists who primarily study, assess, and treat posttraumatic stress disorder (PTSD), five questions of significant clinical interest to us frame our commentary.

First, how applicable is this model to mental health problems other than PTSD? The authors seem to suggest the proposed model is equally applicable to all types of mental health problems. While we believe the proposed model is highly relevant as a model of therapeutic change in PTSD, we questioned whether this same mechanism of change applies equally well to other types of mental health problems. For example, the relevance of the model to

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the treatment of serious mental illness or more future-oriented anxiety disorders, such as generalized anxiety disorder, was unclear to us. Treatment of these and many other disorders tends to be much less focused on processing prior stressful or traumatic experiences, which the proposed model appears best suited to explain. The authors also note that the presence of rumination would make it more difficult for patients to successfully revise their memory structures, with which we agree. However, we would add that rumination is relatively common among clinical populations and just one of many issues that clinicians routinely face when treating challenging patients (e.g., patients with multiple disorders). Thus, while the model seems well-suited to explaining psychotherapeutic changes in relatively “straightforward” cases of PTSD, its potential to explain therapeutic change in more complex cases is unclear.

Second, how does the proposed model account for individual differences in treatment response? In many ways, this was our main concern regarding the usefulness of the model. In our opinion, a useful model of psychotherapeutic change should help to explain why some individuals do not benefit from psychotherapy and point toward ways to improve treatment outcomes for these individuals. To that end, we wonder how the proposed model accounts for treatment non-response among patients for whom existing treatments do not result in successful memory reconsolidation? For example, might there be structural and/or functional differences in the integrative memory systems of these patients compared with treatment responders? If the authors believe this to be the case, then clearly delineating the hypothesized differences between responders and non-responders would be useful so that these aspects of the model could be tested. Conversely, might the authors posit that individual differences among therapists (e.g., individual differences in “common factors”) largely account for individual differences in treatment response? In addition, specific suggestions regarding potential enhancements that might improve therapeutic outcomes for non-responsive patients would be particularly helpful.

Third, how might the model account for, or relate to, individual differences in vulnerability to PTSD and other disorders? While we recognize that the theory does not claim to be etiological in nature, we can’t help but wonder how the theory might relate to individual differences in vulnerability. It is widely accepted that there are significant individual differences in genetic vulnerability to PTSD, with heritability estimates ranging from 30–40% (True et al., 1993; Stein et al., 2002). Thus, how might genetic or biological vulnerability factors (e.g., increased amygdala reactivity) believed to be associated with increased risk for PTSD relate to the integrative memory model? The specification of these and other relationships between the proposed model and the known biology of PTSD could also substantially aid in stimulating additional research in this important area.

Fourth, how does the model account for the effectiveness of other forms of psychotherapy not discussed in the article? While we appreciated the authors’ coverage of four relatively diverse forms of psychotherapy, their selection of treatments was by no means exhaustive. We wondered, for example, how their theory might relate to “third-wave” treatments, such as dialectical behavior therapy (Linehan, 1993) and acceptance and commitment therapy (Hayes, Strosahl, & Wilson, 2012)? In particular, how is the effectiveness of mindfulness, which does not appear to involve memory reconsolidation, explained by their model of

therapeutic change? We were also somewhat surprised that the authors did not discuss Interpersonal Psychotherapy (IPT; Klerman, Weissman, Rounsaville, & Chevron, 1984), as their model appears well-suited to explaining therapeutic change in IPT.

Finally, at a broader level, we wondered if the authors could clarify whether they believe that the process of memory reconsolidation is both necessary and sufficient to bring about positive changes in psychotherapy? While we would agree that memory reconsolidation is likely sufficient to bring about therapeutic change in many instances, it is not clear to us that memory reconsolidation is *necessary* for psychotherapeutic change. Moreover, given that there are pharmacological interventions that appear to produce outcomes similar to psychotherapy, one can't help but wonder if a more biologically-based mechanism of change that could account for the effectiveness of both psychotherapy and pharmacotherapy would not be more useful. The proposed model relies heavily on psychological constructs to describe what must ultimately be a biological process.

In sum, we believe that the proposed model makes a substantial contribution to the literature and agree with many of the ideas contained within the manuscript; however, we also felt that the model would benefit from additional theoretical work aimed at developing specific hypotheses regarding: (1) Factors that underlie poor treatment response; (2) Procedures to improve psychotherapy outcomes for non-responsive patients; and (3) How the proposed model might account for, or relate to, biological vulnerabilities for the development of mental health problems.

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References

- Hayes, SC.; Strosahl, KD.; Wilson, KG. Acceptance and commitment therapy: The process and practice of mindful change. 2nd ed.. New York: Guilford Press; 2012.
- Klerman, GL.; Weissman, MM.; Rounsaville, BJ.; Chevron, ES. Interpersonal psychotherapy of depression. New York: Basic Books; 1984.
- Lane RD, Ryan L, Nadel L, Greenberg L. Memory reconsolidation: Emotional arousal and the process of change in psychotherapy: New insights from brain science. Behavioral and Brain Sciences. (in press).
- Linehan, MM. Cognitive-behavior therapy of borderline personality disorder. New York: Guilford Press; 1993.
- Stein MB, Jang KL, Taylor S, Vernon PA, Livesley WJ. Genetic and environmental influences on trauma exposure and posttraumatic stress disorder symptoms: A twin study. American Journal of Psychiatry. 2002; 159:1675–1681. [PubMed: 12359672]
- True WR, Rice J, Eisen SA, Heath AC, Goldberg J, Lyons MJ, Nowak J. A twin study of genetic and environmental contributions to liability for posttraumatic stress symptoms. Archives of General Psychiatry. 1993; 50:257–264. [PubMed: 8466386]