



The pursuit of homeostasis: Closing the gap between science and practice in the treatment of aggression and violence



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ABSTRACT

Youth who demonstrate aggression, violence, and behaviors associated with a diagnosis of conduct disorder have comprised a large population of secure youth corrections for decades. Ameliorative treatment strategies have thus far fallen short. Contemporary neuroscience reveals youths' emotions and behaviors may be limbic adaptations to homeostatic demands. We review interdisciplinary research suggesting a resource-rich environment and strategically shared body-states might be therapeutically implemented to effect adjustments in youth's emotions and behaviors. Thus, a limbically informed treatment modality, invites innovative treatment technology to address youth aggression, violence and behaviors associated with conduct disorder.

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1. Introduction

This article examines scientific research regarding the manner in which youth's limbic systems respond to survival-relevant experiences, and how those limbic responses correlate with behaviors typically classified as delinquent, including aggression, violence and with a diagnosis of conduct disorder. An estimated 1.1 million delinquency cases were addressed in United States juvenile courts in 2013 (OJJDP, 2015a), resulting in approximately 383,600 youth on probation (OJJDP, 2015b) and 78,700 youth remanded to residential youth treatment centers (YTC) (OJJDP, 2015b). Currently YTC's nationwide utilize cognitive behavioral therapy (CBT), founded on the concept that criminals have distorted cognitions allowing for dysfunctional thinking and unreasonable beliefs that can culminate in criminal behaviors (Lizama, Matthews, & Reyes, 2014, p. 6). "There are different types of CBT programs that include, for example, Moral Reconation Thinking, Thinking for a Change, and Reasoning and Rehabilitation" (Lizama et al., 2014, p. 3).

CBT programs share the basic premise that changing maladaptive cognitions will reduce delinquent behaviors (Hofmann, Asnaani, Vonk, Sawyer, & Fang, 2012). Due in part to innumerable programs, "CBT is arguably the most widely studied form of psychotherapy" (Hofmann et al., 2012, p. 10), and "the evidence-base of CBT is enormous" (Hofmann et al., 2012, p. 12) in spite of the fact that studies have "found an overall small-to-medium mean effect size for CBT programs for convicted offenders" (Hofmann et al., 2012, p. 7). Success rates for CBT have primarily been compared with other forms of therapy which involve the cognitive brain through verbal conversation (e.g., interpersonal therapy, family systems therapy) (Hofmann et al., 2012, p. 9).

Although virtually all YTCs across the nation provide CBT, contemporary science has established the limbic brain as the survival-emotion-behavior brain (Morgane, Galler, & Mokler, 2005; Panksepp, 1982; Papez, 1937; Phan, Wager, Taylor, & Liberzon, 2002; Roxo, Franceschini, Zubaran, Kleber, & Sander, 2011). While there is a spate of cognitive treatment options, the absence of limbic brain science in the treatment of youth in corrections represents a gap in treatment potential. YTC staff have long recognized the contributions of limbic system processes to youth treatment outcomes, however, these processes have gone largely unaddressed. Current training for YTC staff regarding managing an escalated or aggressive youth are: verbal de-escalation, the application of a behavior sequence which directs the youth to

manage him or herself, and, if these are not successful, to physically restrain the youth. Despite hours of training and countless certification, when confronted with an escalated or aggressive youth, frontline staff often revert to innate visceral tools. This review is intended to introduce limbic information into the treatment literature to invite the inclusion of limbic brain processes in training, and treatment. This inclusion might further novel treatment technology for YTC staff confronting aggressive and violent youth.

2. Methods

This literature review is a theory-based analysis of existing research relevant to limbic brain function in the generation, expression and treatment of youth' emotions and behaviors. Our purpose is threefold: 1) to bring to the fore pertinent science currently excluded from conventional treatment; 2) to enhance accessibility and application of limbic brain science in youth treatment; and 3) contribute a limbic perspective to understanding aggression, violence and behaviors associated with conduct disorder. To that end, we conducted this review using a Grounded Theory approach (Wolfswinkel, Furmueller, & Wilderom, 2013) to analyze, and integrate relevant interdisciplinary research.

2.1. Define

2.1.1. Inclusion/exclusion criteria

The authors debated until reaching consensus regarding inclusion/exclusion criteria. Articles were assessed using the following criteria a) main findings addressed the aims of our review; b) the full text was accessible; c) articles were from a peer-reviewed journal, conference article, or book; and d) articles were published between 1990 and 2015. Articles that were overly technical for the scope of this review i.e. regarding cellular or synaptic sequence/architecture or articles concerned with the evolutionary history and physiology of the limbic system were excluded.

2.1.2. Included fields of research

As the primary aims of the study were broad in scope yet esoteric in concept, we included literature from a wide array of disciplines including; correctional and juvenile justice, criminology, criminal justice, social work, sociology, psychology, developmental psychology, political science, business management, biology, biological psychiatry,

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