

Addiction as Attachment Trauma

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“There they were, dignified, invisible,
Moving without pressure, over the dead leaves,
In the autumn heat, through the vibrant air,
And the bird called, in response to
The unheard music hidden in the shrubbery,
And the unseen eyebeam crossed, for the roses
Had the look of flowers that are looked at.”

[T.S. Eliot, Four Quartets;
Quartet No. 1: “Burnt Norton”]

Attachment theory is essentially a theory of trauma, developed by John Bowlby, empirically elaborated upon by Mary Ainsworth and Mary Main, and later confirmed by neurobiological research conducted by Alan Schore and others (Eagle, 2013). Drawing on his observations of institutionalized children, ethology, developmental psychology, and systems theory, Bowlby formed the belief that seeking and maintaining contact with caregiving others is an innate, primary motivating principle in human beings across the lifespan that was “selected for” as a primary system during evolution to increase the likelihood of survival (Eagle, 2013; Mikulincer & Shaver, 2012). Bowlby argued that infants are born with an autonomous, adaptive proximity-seeking attachment behavioral system, which motivates them to seek proximity to significant others in times of need (Eagle, 2013). According to Bowlby, when the child is faced with any stressor, internal or external, the attachment behavioral system motivates the child to seek safety by seeking proximity to the caretaker. He proposed that the child constructs complex mental representations of the self, the caregiver, and the quality of the relationship, “internal working models,” which organize the child’s thoughts and feelings regarding the self’s worthiness and of the attachment figure’s willingness to provide safety and care (Blizard, 2003).

Research has confirmed Bowlby's premise that a stable sense of attachment security is only developed in the presence of an attuned primary caregiver who responds consistently to the infant and can read, validate and reflect back his or her unique verbal and nonverbal cues in a collaborative dialogue (Beebe, 2012; Lyons-Ruth & Jacobvitz, 2008). As a baby looks toward the mother and the mother reflects back to her baby, the baby begins to feel that he exists; through the mother's nonverbal responses to her baby's nonverbal expressions, the mother acts as a mirror "introducing" this relationship between the baby's body and psyche (Winnicott, 1972, p. 15). The mirror neuron system, which creates a "shared neural mapping" between self and other, is believed to be at the root of intersubjectivity, the motivational system present at birth that compels infants to create a joint social consciousness and identification with self and other (Gallese, 2009). The accurate reading of nonverbal cues by the caregiver is at the core of a securely developing early attachment relationship in the child (Bowlby, 1982). Consistent, congruent mirroring by the caregiver of an emotional expression and response that matches the baby's allows the infant to develop the increasing ability to calm when arousal rises to the upper limits of his "window of tolerance" or to increase activity when arousal drops (Fisher, 2014; Schore, 2009; Siegel, 2010). Neurobiological research has shown that these attuned dyadic exchanges in the first two years of life are vital to the development and maturation of synaptic wiring in the brain, which is necessary for emotional self-regulatory capacities (van der Kolk, 2014; Schore, 2012, p.32; Schore, 2003b, p. 237). Early experiences of consistent interactive regulation between caregiver and child build a resilient nervous system that has the ability to control and tolerate strong negative affect without resorting to avoidance strategies such as dissociation, substance abuse or acting-out behavior (Padykula & Conklin, 2010; Shore, 2003b; Briere, 2002; Bennett, 2006). Attachment theory proposes that such mirroring and attunement sets the stage for accurate identification of emotions, the capacity to use internal and external regulatory response strategies to minimize negative emotional states and maximize positive states, and the

development of positive views of self and other, and a subjective sense of safety and security (Padykula & Conklin, 2010, p. 357; Schore, 2009; Schore, 2003a; Siegel, 1999; Flores, 2004).

On the other hand, caregivers' responses to babies that are incongruent, absent, or abusive create in the infant distress and feelings of anxiety, and a typical Autonomic Nervous System [ANS] sympathetic response of angry protest, followed by primal panic and terror (Cozolino, 2010). The panicked vulnerable baby who can neither fight nor flee and thus, cannot discharge the high arousal, then responds parasympathetically with physiological constriction, contraction, core withdrawal and immobility/freeze (Cozolino, 2010; Schore, 2003b). The baby is thought to experience the overwhelming and terrifying feeling of being helpless and psychologically alone in the world (Maté, 2008, p, 45; Allen, 2013; Fosha, 2000). The chronic and cumulative states of overwhelming, hyperaroused affect, as well as hypoaroused dissociation, have devastating effects on the growth of the baby's psychic structures (Schore, 2003). Alterations in glucocorticoid levels, neuropeptides such as arginine, vasopressin, and oxytocin, and opiate receptors (the body's natural painkillers) occur causing a decreased capacity to modulate physiologic arousal and the baby's window of affective tolerance to narrow (van der Kolk, 2014; Schore, 2003b, p. 247-248). Painful memories may be deeply remembered in later life *not in verbal explicit memory* but in nonverbal, implicit memory in the form of disconnected physiological responses, emotions, and acting out (Siegel, 1999; Schore, 2003b). These memories are recorded in the right hemisphere outside of conscious awareness and control and may not be evident except in negative or potentially threatening interactions with others (Siegel, 1999; Briere, 2002). These children have a reduced ability to cope and tend to experience later stresses as somatic states which prompt emergency responses to threats experienced as requiring action rather than thought. (Briere, 2002; van der Kolk, 2005; McFarland, & Weisaeth, 1996; Siegel, 1999).

Because these experiences occur in the context of a developing brain, neural development and social interaction are inextricably intertwined (van der Kolk, 2005). In the infant brain, states become traits, and so the effects of early relational interactions with unattuned caregivers are embedded into the core structure of the evolving personality (Schore, 2003b). The biological dysregulation resulting from neglect or abuse is the shaky foundation upon which the psychological self builds “internal working models” for organizing information relevant to attachment and the defensive insecure attachment strategies—either hyperactivated (anxious/ambivalent), deactivated (avoidant), or the combination of both contradictory approach-avoidant behavior (disorganized) which occurs when the two biological drives, to attach and to survive, are in constant conflict as a result of the caregiver being both the source of, and solution to fear, anxiety and disorientation (Cozolino, 2010; Schore, 2003b; Sweet, 2013). These organizing structures reflect the baby’s interactive context with the caregiver and encompass the issue of how the baby comes to know, and feel known by another’s mind (Beebe, 2012a; Davis, et al., 2014).

The insecure attachment styles are associated with emotional distress and with deficits in coping (Schindler, 2009). In anxious/ambivalent attachment, the caregiver is unpredictably available or role-reversing and the child feels uncertain of her lovability, and is occasionally angrily rejecting, but more often heightens her expression of distress and becomes preoccupied with the caretaker (Blizzard, 2003). An ambivalently attached child will anxiously seek proximity to the caregiver, but will not be soothed (Schore, 2009; Fischer, 2014). As adults, these individuals display mental preoccupation with attachment concerns that may have either an angry or passive quality (Gunderson & Lyons-Ruth, 2008). In avoidant attachment, the caregiver is consistently insensitive or rejecting and the child perceives the self as unlovable and the object as uncaring (Blizzard, 2003). An avoidantly attached child will be precociously autonomous, but at the cost of disconnection from self and other (Fischer, 2014). Disorganized attachment forms when the child experiences an irresolvable

paradox because of conflicting cues--incomprehensible, contradictory interactions with the caregiver which create double binds, or the experience of having a caretaker who is invalidating, dysregulating or frightening (Blizard, 2003; Beebe, et al., 2012b). Failures of “collaborative dialogue” generate contradictory internal models, and thus, the disorganized child is unable to form any coherent strategy for maintaining attachment to his significant caretaker and he will feel alone with his distress and opposed by his caregiver (Beebe, et al., 2012b; Blizard, 2003). Disorganized infants will have difficulty in knowing and feeling known by their caregiver’s mind and difficulty in knowing their own minds, and will experience intense emotional distress and the inability to obtain comfort (Beebe, et al., 2012b). These individuals “simultaneously want closeness to attachment figures but also feel unable to trust and rely on them,” which may cause their attachment systems to be activated while their behavior suggests deactivation (Shaver & Mikulincer, 2002, p. 154). Such children display contradictory and unintegrated approach/avoidance responses or confused, disoriented behaviors toward the parent when distressed and needing care (Gunderson & Lyons-Ruth, 2008; Schore, 2003b). Again, because these insecure attachment experiences occur in the context of a developing brain, neural development and social interaction are inextricably intertwined and the states become traits embedded into the core structure of the evolving personality (van der Kolk, 2005; Schore, 2003b).

An insecurely attached child avoids emotional pain and negative appraisals of self and other by engaging in defensive deactivation or disconnection (Blizard, 2003; Briere, 2002). As he develops other attachment relationships in adolescence and adulthood, he may be triggered by slights and stimuli in those relationships and experience sudden intrusive thoughts, feelings and desperation associated with the childhood maltreatment, and may try to avoid the pain in “dysfunctional” ways (Briere, 2002). Even minor reminders may precipitate a full-blown neuroendocrine stress reaction: it permanently alters how an organism deals with its environment on a day to-day basis, and it interferes with how it copes with subsequent acute stress (van der Kolk, 2014). Because the individual is

unable to adequately modulate his or her emotions, he or she may be viewed as moody and emotionally hyperresponsive, and as tending to overreact to negative or stressful events in his or her life. In the absence of sufficient internal affect regulation skills, the individual may respond to painful affect and activated negative cognitions with external behaviors that distract, soothe, numb or otherwise reduce painful internal states, such as substance abuse (Briere, 2002). Insecure attachment styles interfere with the ability to derive satisfaction from interpersonal relationships and contribute to internal working models that perpetuate this difficulty (Flores, 2004). Those with histories of insecure attachment, especially disorganized attachment, are vulnerable to psychopathology and addiction (Sweet, 2013; Maté, 2008; Flores, 2004; Beebe, 2003).

Substance abuse has been viewed as both an attempted solution to, and a consequence of, a person's impaired ability to develop secure attachments (Flores, 2004; Thornberg & Lyvers, 2010; Mariani, Khantzian, & Leving, 2014; Khantzian & Weegmann, 2009). It is suggested that recourse to psychoactive substances, which produce reliable, short-term change of affective and psychological states, represents an attempt to regulate the overwhelming intrapsychic emotions of insecure attachment, along with self and object representations (Sweet, 2013; Schindler, Thomasius, Petersen, & Sack, 2009; Schindler, Thomasius, Sack, & Gemeinhardt, 2007; Schindler et al., 2005; Massey, Compton, & Kaslow, 2014, p. 294; Padykula & Conklin, 2010; Thornberg & Lyvers, 2010). Khantzian (2013) describes the "painful, repetitious aspects of addiction" as "displaced attempts to deal with the vague, confusing and inaccessible feelings that renders the person powerless, helpless and out of control." Gabor Maté (2010) notes that "addictions always originate in pain, whether felt openly or hidden in the unconscious" (p. 36). Sweet (2013) describes how attachment dynamics may be replayed, repetitiously and compulsively, in the relationship between the addict and their particular drug:

In the same sense that the attachment figure is sought out when the infant experiences increasing anxiety, the drug of choice may be urgently sought as a substitutive object later in life. In a context where the infant experienced inconsistent or incoherent containment for overwhelming feelings of anxiety, the sheer predictability and reliability of substances (e.g. alcohol, cocaine, benzodiazepines), to assuage and mitigate anxious feelings, may be experienced as hugely comforting and reassuring. The predominance of high risk factors that precede lapse or relapse to drug use, factors invariably related to emotionally heightened tension states, very likely mirror attempts by the infant, in earlier life, to secure the relief of stress and anxiety from the caregiver/attachment figure. At the intra-psychoic level the incorporation of the drug may represent not only the freezing and paralyzing of overwhelmingly hostile objects, but may also give the impression of empowering a fragile self through internal inflation. [p. 161]

The view of addiction as an attempt to self-regulate the impact of insecure attachment is supported by numerous empirical studies which link insecure attachment, especially the disorganized style, and substance use disorders (SUDs) (Massey, Compton, & Kaslow, 2014; Reis, Curtis, Reid, 2012; Caspers, Yucuis, Troutman, 2006; Schindler et al., 2005; Schindler, Thomasius, Sack, Gemeinhardt, & Kustner, 2007; Schildler, Thomasius, Petersen, & Sack, 2009). Schildler, Thomasius, Petersen, and Sack (2009) found evidence that suggests that the choice of substance may be specific to the particular form of emotional distress associated with the insecure attachment style of the individual, supporting the self-regulation hypothesis and the link to insecure attachment strategies. They found that opioid abuse (heroin) was strongly linked to disorganized attachment and was used as an emotional substitute for lacking attachment coping strategies, that cannabis abuse and sedating substances were linked to avoidant attachment and supported the use of deactivating attachment strategies, and that ecstasy abuse was not related to a specific insecure attachment strategy,

finding no link between ecstasy and anxious-ambivalent attachment (Schildler, Thomasius, Petersen, & Sack, 2009). “Addicts who felt bored, empty, dead inside, or that life was meaningless were frequently drawn to stimulants” (Flores, 2004).

Flores (2004) asserts that until the internal working model is changed and the underlying defect in the self is repaired, the addiction will continue or the substance abuser will substitute one compulsive behavior for another (p. 6). Kohut (1991) elaborated upon this problem:

The calming or stimulating effect which the addict obtains from the drug is . . . impermanent. Whatever the chemical nature of the substance that is employed . . . no psychic structure is built; the defect in self remains. It is as if a person with a wide open gastric fistula were trying to still his hunger through eating. He may obtain pleasurable taste sensations by his frantic ingestion of food but, since the food does not enter that part of the digestive system where it is absorbed into the organism, he continues to starve. [p. viii]

“Internal structural change is necessary if external behavioral change is to be long-lasting and something other than compliance” (Flores, 2004).

Several theorists believe that the addict replaces attachment to people, with attachment to substances, and that a person could not be attached to both at the same time (Flores, 2004; Reading, 2002). In other words, they believe that attachment to addictive drugs is a “misattachment,” substituting for ordinary and necessary affectional bonds (Flores, 2004; Reading, 2002).

Neuroscientific evidence provides some support to this theory. Current research affirms both the positive effect of secure attachment on the oxytocin system, which is known for its role in positive attachment relationships and bonding, and its promotion of emotional resiliency, as well as the negative impact of insecure attachment on the oxytocin system (Buisman-Rijlman et al., 2014; Feldman et al., 2012; Feldman et al., 2010; Wismer Fries et al., 2005). Paul Maclean (1990) appears to be the first to theorize that substance abuse and addiction are linked to endogenous opiates,

dopamine, and oxytocin (Cosolino, 2006; Flores, 2004). He suspected that attachment and addiction share common neurobiology and neuropathways and proposed that drug addicts may satisfy their need for intimacy by manipulating the biochemistry of bonding and attachment (Cosolino, 2006; Flores, 2004). Research by T. Insel (2003) showed that the neuropathways used by substance abuse and by attachment overlap. Studies by Tops, Koole, Ijzerman, and Buisman-Pijlman (2013) provide support for the view that secure attachment formation and drug abuse have a reciprocal negative relationship and are mutually exclusive:

Pathway A: Stable attachment formation (and modulation by oxytocin) involves a shift from ventral striatal novelty processing towards dorsal striatal familiarity processing, involving formation of associative networks of secure internal working models that decrease emotional reactivity and provide coping resources. This shift relies on a cortical pathway in healthy individuals, a pathway that is hypoactive in drug addicts. Pathway B: Instead of accessing this cortical pathway, stress and the use of drugs of abuse increase the midbrain DA [dopamine] path. This pathway does not facilitate forming secure internal working models, but instead the formation of drug-related habits. Pathways A and B tend to be mutually exclusive, in that each prevents the other through adaptations that cause derogation of alternatives. [p. 42]

This process, they conclude, means that addiction may prevent the development of social attachments (Tops, Koole, Ijzerman, and Buisman-Pijlman, 2013, p. 40).

In summary, it is widely accepted that insecure attachment (caused by disregulating caregivers in the first years of life) causes neurological changes in the brain, which narrow the arousal zone “window of tolerance” and destine a child to highs (sympathetic) and lows (parasympathetic) of emotional dysregulation, along with insecure internal working models and a sense of self defined by feelings of deprivation, shame and inadequacy (Siegel, 2010). The mounting evidence also appears

to confirm the theory that addiction is a survival coping strategy used to regulate the painful emotions of not feeling attached and safe in the world. It also appears likely that substance abuse overtakes the biological system selected for attachment and bonding and the very means by which an addict could, in actuality, feel more secure and create self-regulatory functions and genuine self-esteem.

Thus, those that subscribe to this theory, although they may differ as to the method, seem to agree that the ultimate goal of treatment is to instill in the client a bodily felt sense of security, self-compassion, and an “earned secure attachment” (Flores, 2004; Fischer, 2014, van der Kolk, 2014). Because the source of the void is either in the child’s reality or perception of not being seen, understood, empathized with, respected, and validated on the emotional level, the treatment appears to be based in providing what was lacking. The need to be seen implies that we all have a desire and a need to be known and understood for who we really are (Adler, 1985; Tortora, 2006).

Jon Kabat-Zinn (2013) points out the importance of “feeling completely seen and accepted” (p.71):

“Our regard (from the French *regarder*, to look) is itself a worthy object of attention, to be held in awareness, and the consequences of it seen, felt, and known. For it is not just seeing that is important. There is also being seen. And if that is true for us, it is true for the other, any other... That presence holds us and reassures us and lets us know that our inclination to be who we actually are and to show ourselves in our fullness is a healthy impulse, because who we actually are has been seen, recognized, and accepted, our core sovereignty-of-being embraced” (p. 72).

Resources

- Allen, J.G. (2013). *Mentalizing in the development and treatment of attachment trauma*. London: Karnac Books, Ltd.
- Beebe, B., Rustin, J., Sorter, D. & Knoblauch, S. (2003). An expanded view of intersubjectivity in infancy and its application to psychoanalysis. *Psychoanalytic Dialogues*, 13, 805-41.
- Beebe, B., Lachmann, F., Markese, S., & Bahrnick, L. (2012a). On the origins of disorganized attachment and internal working models: Paper I. A dyadic systems approach. *Psychoanalytic Dialogues*, 22(2), 253-272.
- Beebe, B., Lachmann, F.M., Markese, S., Buck, K.A., Bahrnick, L.E., Chen, H., & ... Jaffe, J. (2012b). On the origins of disorganized attachment and internal working models: Paper II. An empirical microanalysis of 4-month mother–infant interaction. *Psychoanalytic Dialogues*, 22(3), 352-374.
- Beebe, B. & Steele, M. (2013). How does microanalysis of mother-infant communication inform maternal sensitivity and infant attachment? *Attachment & Human Development*, 15(5-6), 583-602.
- Buisman-Pijlman, F.T.A., et al. (2014). Individual differences underlying susceptibility to addiction: Role for the endogenous oxytocin system. *Pharmacology, Biochemistry and Behavior*, 119, 22-38.
- Caspers, K.M., Yucuis, R., Troutman, B, et al. (2006). Attachment as an organizer of behavior: Implications for substance abuse problems and willingness to seek treatment. *Subst Abuse Treat Prev Policy*, 1, 32.
- Caspers, K.M., Cadoret, R.J., Langbehn, D., Yucuis, R., & Troutman, B. (2005). Contributions of attachment style and perceived social support to lifetime use of illicit substances. *Addictive Behaviors*, 30(5), 1007-1011

- Cozolino, L. (2010). *The neuroscience of psychotherapy: Attachment and the developing social brain*. New York, NY: W.W. Norton & Company.
- Davis, J. S., Fani, N., Resler, K., Jovanovic, T., Tone, E. B., & Bradley, B. (2014). Attachment anxiety moderates the relationship between childhood maltreatment and attention bias for emotion in adults. *Psychiatry Research, 217*, 79-85.
- Dvorak, R. D. & Day, A. M., (2014). Marijuana and self-regulation: Examining likelihood and intensity of use and problems. *Addictive Behaviors, 39*, 709-712.
- Eagle, M. N. (2013). *Attachment and psychoanalysis: Theory, research, and clinical implications*. New York; NY: The Guilford Press.
- Espinosa, M., Beckwith, L., Howard, J., Tyler, R., & Swanson, K. (2001). Maternal psychopathology and attachment in toddlers of heavy cocaine-using mothers. *Infant Mental Health Journal, 22*(3), 316-333.
- Fosha, D. (2000). *The transforming power of affect: A model of accelerated change*. New York, NY: Basic Books.
- Fisher, J. (2014, March). Trauma's role in addictive behavior. Psychotherapy Networker Symposium. Washington, D.C.
- Gallese, V. (2009). Mirror neurons, embodied simulation, and the neural basis of social identification. *Psychoanalytic Dialogues, 19*, 519-536.
- Insel, T. R. (2003). Is social attachment an addictive disorder?. *Physiology & Behavior, 79*(3), 351-357.
- Kabat-Zinn, J. (2013). Being Seen. *Mindfulness, 4*, 71-72.
- Kassel, J. D., Wardle, M., & Roberts, J. E. (2007). Adult attachment security and college student substance use. *Addictive Behaviors, 32*(6), 1164-1176

- Khantzian, E. (2013). Addiction as a self-regulation disorder and the role of self-medication. *Addiction, 108*, 668.
- Khantzian, E. (2012). Reflections on treating addictive disorders: A psychodynamic perspective. *The American Journal on Addictions, 21*, 274–279.
- Khantzian, E. & Weegman, M. (2009). Questions of substance: Psychodynamic reflections on addictive vulnerability and treatment. *Psychodynamic Practice, 14*(4), 365-380.
- Lanius, R. A., Frewen, P. A., Vermetten, E. & Yehuda, R. (2010). Fear conditioning and early life vulnerabilities: two distinct pathways of emotional dysregulation and brain dysfunction in PTSD. *European Journal of Psychotraumatology, 1*, 5467.
- Lee, J., & Bell, N. J. (2003). Individual differences in attachment-autonomy configurations: Linkages with substance use and youth competencies. *Journal Of Adolescence, 26*(3), 347-361.
- Mariani, J. J., Khantzian, E. J., & Levin, F. R., (2014). The self-medication hypothesis and psychostimulant treatment of cocaine dependence: An update. *The American Journal on Addictions, 23*, 189-193.
- Massey, S. H., Compton, M. T., Kaslow, N., (2014). Attachment security and problematic substance use in low-income, suicidal, African American Women. *The American Journal on Addictions, 23*, 294-299.
- Maté, G., (2008). *In the realm of hungry ghosts*. Berkeley, CA: North Atlantic Books.
- Mikulincer, M. & Shaver, P. R. (2012). An attachment perspective on psychopathology. *World Psychiatry 11*(1), p. 11-15.
- Padykula, N. L. & Conklin, P. (2010). The self regulation model of attachment trauma and addiction. *Clin. Soc. Work J., 38*, 351-360.

- Perrier, C. P., Boucher, R., Etchegary, H., Sadava, S. W., & Molnar, D. S., (2010). The overlapping contributions of Attachment orientation and social support in predicting life-events distress. *Canadian Journal of Behavioural Science, 42*(2), 71-79.
- Reading, B. (2002). The application of Bowlby's attachment theory to the psychotherapy of the addictions. In M. Weegmann & R. Cohen (Eds.), *The psychodynamics of addiction*, (pp. 13-30). Philadelphia, PA: Whurr Publishers.
- Reis S., Curtis J., Reid A. (2012). Attachment styles and alcohol problems in emerging adulthood: A pilot test of an integrative mode. *Ment Health Subst Use Dual Diagn., 5*, 115-131.
- Schindler, A., Thomasius, R., Petersen, K., & Sack, P. (2009). Heroin as an attachment substitute? Differences in attachment representation between opioid, ecstasy and cannabis abusers. *Attachment & Human Development, 11*(3), 307-330.
- Schindler, A., Thomasius, R., Sack, P., Gemeinhardt, B. & Kustner, U, (2007). Insecure family bases and adolescent drug abuse: A new approach to family patterns of attachment. *Attachment & Human Development, 9*(2), 111-126.
- Schindler, A., Thomasius, R., Sack, P., Gemeinhardt, B. & Kustner, U, & Eckert, J., (2005). Attachment and substance use disorders: A review of the literature and a study in drug dependent adolescents. *Attachment & Human Development, 7*(3), 207-228.
- Schore, A. N. (2012). *The science of the art of psychotherapy*. New York, NY: W.W. Norton & Company, Inc.
- Schore, A. N. (2009). Right-brain affect regulation: an essential Mechanism of development, trauma, dissociation, and psychotherapy. In Fosha, D, Siegel, D. J., & Solomon, M. (Eds.), *The Healing Power of Emotion: Affective Neuroscience, Development, and Clinical Practice*. New York, NY: W.W. Norton & Company, Inc.

- Schore, A. N. (2003a). *Affect dysregulation and the repair of the self*. New York, NY: W.W. Norton & Company, Inc.
- Schore, A. N. (2003b). *Affect dysregulation and disorders of the self*. New York, NY: W.W. Norton & Company, Inc.
- Siegel, D. J. (2010). *Mindsight: The new science of personal transformation*. New York, NY, US: Bantam Books.
- Siegel, D. J. (1999). *The developing mind: How relationships and the brain interact to shape who we are*. New York, NY: The Guilford Press.
- Suh, J. J., Ruffins, S., Robins, C., Albanese, M. J., & Khantzian, E. J. (2008). Self-medication hypothesis: Connecting affective experience and drug choice. *Psychoanalytic Psychology*, 25(3), 518-532.
- Sweet, A. D. (2013). Aspects of internal self and object representations in disorganized attachment: Clinical considerations in the assessment and treatment of chronic and relapsing substance misusers. *British Journal Of Psychotherapy*, 29(2), 154-167.
- Tops, M., Koole, S. L., Ijzerman, H. & Buisman-Pijlman, F. T. A. (2014). Why social attachment and oxytocin protect against addiction and stress: Insights from the dynamics between ventral and dorsal corticostriatal systems. *Pharmacology, Biochemistry and Behavior*, 119, 39-48.
- Thorberg, F. A. & Lyvers, M., (2010). Attachment in relation to affect regulation and interpersonal functioning among substance use disorder in patients. *Addiction research and Theory*, 18(4), 464-478.
- van der Kolk, B. A. (2014, March). When Talk Isn't Enough. Psychotherapy Networker Symposium. Washington, D.C.
- van der Kolk, B. A. (2005). Developmental Trauma Disorder: Toward a rational diagnosis for children with complex trauma histories. *Psychiatric Annals*, 35(5), 401-408.

van der Kolk, B. (2000). Post traumatic stress disorder and the nature of trauma. *Dialogues in Clinical Neuroscience*, 2(1), 1-22.

van der Kolk, B. A., & Fisler, R. E. (1994). Childhood abuse and neglect and loss of self-regulation. *Bulletin Of The Menninger Clinic*, 58(2), 145-168.

Winnicott, D.W. (1991). *Playing and reality*. London: Routledge/Tavistock (Original work published 1971).