Dissociation and Potential Space on the Rorschach as Predictors of Concurrent PTSD and Substance Dependence Treatment Outcomes

By

Stephen John Anen

A dissertation submitted to the Graduate Faculty in Psychology in partial fulfillment of the requirement for the degree of Doctor of Philosophy The City University of New York

2013

This manuscript has been read and accepted by the Graduate Faculty
in Psychology in satisfaction of the dissertation requirement
for the degree of Doctor of Philosophy.

Date	Denise Hien, Ph.D. Chair of Examining Committee
Date	Maureen O'Connor, Ph.D. Executive Officer, Psychology
	Steven Tuber, Ph.D.
	Elliot L. Jurist, Ph.D., Ph.D.
	William Gottdiener, Ph.D.
	Edward Nunes, M.D. Supervisory Committee

THE CITY UNIVERSITY OF NEW YORK

ABSTRACT

DISSOCIATION AND POTENTIAL SPACE ON THE RORSCHACH AS PREDICTORS OF CONCURRENT PTSD AND SUBSTANCE DEPENDENCE TREATMENT OUTCOMES

By

Stephen John Anen

Adviser: Denise Hien, Ph.D.

Both posttraumatic stress disorder (PTSD) and substance use disorders (SUD) are ongoing public health crises. Dissociative experiences are core processes within both of these conditions (van der Kolk & van der Hart, 1989; Briere & Runtz, 1987; Schafer et al., 2010). Dissociation, which involves the compartmentalization of psychic experience, also exerts a significant influence over psychotherapies that aim to address both PTSD and SUD (Davidson & Foa, 1991; Spitzer, Barnow, Freyberger, & Grabe, 2007). However, dissociation is a wide concept that encompasses several perceptual, cognitive, affective, memory, and self-state processes (Bernstein & Putnam, 1986; Briere, Weathers, & Runtz, 2005). Through separate self-reports and projective measures that operationalize dissociation in distinct ways, this study investigated the quality and intensity of dissociative experiences in a sample of treatment-seeking individuals with comorbid PTSD and SUD. Additionally, this dissertation explored whether these measures of dissociation had significant relationships with treatment outcome.

Results: Cross-sectional correlation analysis identified convergence between certain measures of dissociation, but not others. Within hierarchical regression analysis, specific subscales of dissociation demonstrated discrepant relationships with response-to-treatment variables. Altogether, this study further evidenced the multidimensional nature of dissociative processes and, subsequently, the value of multi-method assessment. In addition, separate types of

dissociation appeared to differentially influence treatment, indicating a pathway through which to improve customization of treatment planning.

Keywords: substance dependence, posttraumatic stress disorder, Rorschach, dissociation, potential space

ACKNOWLEDGMENTS

This document is built upon training, encouragement, and growth that took place well outside the confines of IRBs, SPSS, and the dissertation itself. Hours spent in class, supervision, and on subways helped to shape both the process and the person involved. For all of it (ok, most), I am immensely appreciative.

My gratitude for my advisor, Denise Hien, cannot sufficiently be captured in words. I have been incredibly fortunate to interact with her in supervision, class, research, work, and this dissertation. Across these settings, I have come to recognize and admire the humanity she consistently utilizes and offers, despite the varying responsibilities and contexts. Such continuity has humbled and impressed me over and over again. I want to thank her for giving me the opportunity to learn under her guidance and support. She has helped me to find my voice as not just a clinician, academic, and student, but as a person.

Many thanks also belong to Steve Tuber, whose bursted open emotion and passion for development and assessment opened my eyes to the pleasure and play of this field. They remain open, always looking to understand the complexities and phenomenology of each individual I encounter. But even more so, I thank him for the love and perspective that he so generously has offered throughout my growth within graduate school. He helped make City home.

It must be said that I would not be completing this dissertation were it not for Elliot Jurist. I was ready to pack my bags for graduate school, but his recruitment as well as commitment to the clinical psychology program at City College gave me enough pause to make one of the best decisions of my life. However, my gratitude extend well beyond the opportunity to learn at City. I thank him for participating throughout my career at City and for allowing a friendship to develop that will continue long after this process.

I also thank the remaining members of my committee. Edward Nunes gave me my first job in the field of psychology at a time when all I thought had was a desire to pursue a nascent dream. Now, he gets to help me earn my doctorate. And thank you to William Gottdiener, who, early on in graduate school, helped me to learn that substance use is not only a worthy cause for psychodynamic theory and research, but an essential one. It is a privilege to have them both round out my team.

This study, literally and figuratively, could not have been possible without the effort and attention of Annelisa Pedersen, Voski Hovsepian, and Teresa Lopez-Castro, who all helped to execute the ongoing research. Their work and thoughtfulness allowed me to write the dissertation that I had envisioned. For that, I am indebted. I also must thank Sarai Batchelder for weathering the onslaught of my obsessional questions as I waded through the data morass; I thank her for helping me to find my way.

I owe dear gratitude to my friends, who have provided a network of comforts, laughs, and joys that have been essential in not just enduring this project, but for learning to enjoy it for what it is and what it is not. They helped to keep me honest and grounded.

And finally, I would like to thank my family, most especially my mother, Judith DeStefano-Anen. Her unquestionable support and attention has helped me to believe that wishes can be actualized within reality. I thank her for helping to foster and promote my sense of confidence and focus, which could not have been possible without such conviction.

TABLE OF CONTENTS

LIST OF FIGURES

Figure Number

LIST OF TABLES

Table Number

CHAPTER 1: INTRODUCTION

Overview of the Study

Posttraumatic stress disorder (PTSD) and substance use disorders (SUD) are significant threats to the overall population. According to epidemiological studies, 61% of men and 51% of women are at some point exposed to traumatic events, with lifetime prevalence rates for PTSD range from 13% to 36% (Breslau, Davis, Andreski, & Peterson, 1991; Kilpatrick, Saunders, Veronen, Best, & Von, 1987; Norris, 1992; Resnick, Kilpatrick, Dansky, Saunders., & Best, 1993; Kessler, Berglund, Demler, Jin, Merikangas & Walters, 2005; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). SUDs occur for approximately 10 to 14.6% of individuals (Compton, Thomas, Stinson, & Grant, 2007; Kessler et al., 2005). In addition to their high presence within the population, PTSD and SUD demonstrate relationships in the rates of their occurrence. The prevalence of comorbid PTSD and SUD can be examined by studying the frequency of SUDs among those presenting with PTSD, or conversely, the frequency of PTSD in those displaying SUD. Lifetime prevalence of SUD range from 22% to 43% for persons with PTSD compared to 8% to 25% for those without (Kessler et al., 1995; Breslau et al., 1991; Breslau, Davis, Peterson, & Schultz, 1997). Clinical PTSD populations experience even higher rates of SUD, including 75% of combat veterans (Jacobsen, Southwick, & Kosten, 2001: Schafer & Najavits, 2007). In samples of individuals with SUDs, lifetime PTSD ranges from 14 to 60% (Brady, Dansky, Back, Foa, & Carroll, 2001; Donovan, Padin-Rivera, & Kowaliw, 2001; Najavits, Weiss, & Shaw, 1997; Triffleman, 2003; Mills, Lynskey, Teesson, Ross, & Darke, 2005; Reynolds Mezey, Chapman, Wheeler, Drummond, & Baldacchino, 2005) while current PTSD occurs between 8 to 41% (Reynolds Mezey, Chapman, Wheeler, Drummond, & Baldacchino, 2005; Clark, Masson, Delucchi, Hall, & Sees, 2001; Jaycox, Ebener, Damesek, & Becker, 2004; Langeland, Draijer, &

van den Brink, 2004; Read, Brown, & Kahler, 2004; Dragan & Lis-Turlejska, 2007). In studies of individuals receiving treatment for a SUD, the prevalence of lifetime PTSD was reported to be as high as 80% and the prevalence of current PTSD was measured at between 30-59% (Brady, Killeen, Saladen, Dansky, & Becker, 1994; Dansky, Saladin, Brady, Kilpatrick, & Resnick, 1995; Fullilove, Fullilove, Smith, Winkler, Michael, Panzer, & Wallace, 1993; Hien & Scheier, 1996; Miller, Downs, & Testa, 1993). Through both approaches, research illustrates that these disorders co-occur with significant overlap.

Comorbid PTSD and SUD is associated with increased impairment and severity of symptoms, including higher rates of other axis I and II disorders, increased psychosocial and medical problems, more frequent inpatient admissions, elevated rates of relapse, and more extreme levels of use (Breslau et al., 1997; Najavits et al., 1998; Back et al., 2000). Additionally, individuals with PTSD and SUD tend to suffer from more severe levels of PTSD symptoms, particularly within the avoidance and arousal symptom clusters (Saladin, Brady, Dansky, & Kilpatrick, 1995). Dual diagnosis patients demonstrate considerably higher long-term consequences due to heightened mortality, increased risk of suicidal and violent behaviors, and overall poorer adaptation and functioning (Swartz, Swanson, Hiday, Borum, Wagner, & Burns, 1998: Somer et al., 2010). Individuals with PTSD and SUD also display consistently worse outcomes, less adherence to treatment, and increased use of clinical services (Brown, Stout, & Gannon-Rowley, 1998; Mills, Lynskey, Teesson, Ross & Darke 2005; Brown, Read, & Kahler, 2003; Harned, Najavits, & Weiss, 2006).

Multiple pathways exist in the development of comorbid PTSD and SUD. Documenting one course to comorbidity, research evidences that substance use predisposes one to traumatic experiences (Breslau et al., 1991; Kessler et al., 1995). Another pathway involves the

posttraumatic development of SUD. One explanation of this trajectory is the self-medication hypothesis wherein drugs and alcohol are consumed in order to regulate symptoms (Krystal, 1978, 1995; Khantzian, 2003; Khantzian & Albanese, 2008; Brown & Wolfe, 1994; Jacobsen, Southwick & Kosten, 2001; Roesler & Dafler, 1993). Evidence demonstrating that PTSD symptoms trigger cravings as well as that substance and alcohol withdrawal exacerbates PTSD-related distress, particularly arousal symptoms, frames the cyclical, mutual-reinforcing entanglement of these two disorders (Chilcoat & Breslau, 1998; Jacobsen, Southwick & Kosten, 2001).

In further examining the overlap and interaction between PTSD and SUD, dissociation represents both a core feature of each disorder as well as a way to understand a comorbid link between the two conditions. Dissociation can occur during the trauma itself as well as the development and continuation of PTSD that emerges afterwards (van der Kolk & van der Hart, 1989; van der Kolk, 1996; van der Kolk, van der Hart, & Marmar, 1996; van der Hart et al., 2006). Following a disruption of the individual's capacity to integrate thinking, feeling, memory, and bodily experiences, posttraumatic dissociation is a profound scar revealing fragmentation within the individual's sense of integrity and continuity (Bromberg, 2003). Dissociation functions as a coping mechanism that aims to organize and contain psychic experience through the compartmentalization of anxiety-provoking memories, affects, and self experiences (Counts, 1990). By keeping fearful internal states out of consciousness, the individual attempts to preserve as sense of continuity at the cost of impaired information processing and symbolization (Kluft, 1985; van der Kolk et al., 1996; Bromberg, 1994).

Within substance abuse, dissociation, particularly of affect, can be both a vulnerability for (Krystal, 1978; 1995) and a motivating pursuit behind (McDougall, 1978, 1989) continued

misuse. The theory of chemical dissociation contends that substance use creates an experience of dissociation that brings about sought after psychological and physiological experiences while suppressing other internal states and memories (Briere & Runtz, 1987; Roesler & Dafler, 1993; Hussey & Singer, 1993). Such substance-induced dissociation may occur especially in traumatized individuals wherein use can function as a preferred, actionable pathway to blur and mute affective states while also seeming to obscure gaps in continuity and memory post-trauma (Burton, 2005; Langeland et al., 2002). Furthermore, evidence demonstrates that dissociative symptoms can increase the use of substances (Ross, Kronson, Koensgen, Barkman, Clark, & Rockman, 1992). That dissociation can occur due to substance use as well as fuel substance use in the aftermath of trauma represents a vicious cycle of entangled PTSD and SUD. Enabling ways to contain distressful internal states and to ward off intrusive re-experiencing symptoms, dissociation represents a linking coping mechanism between comorbid posttraumatic stress reactions and substance abuse (Roesler & Dafler, 1993; Singer et al., 1989). In addition to the attempts at stabilization and adaptation, dissociative experiences have negative impacts on psychotherapy as they interfere with the individual's capacity for emotional processing and learning (Ebner-Priemer et al., 2009; Ogden, 1985; 1989).

Broadly defined, dissociation is a breakdown of integration within internal states (van der Kolk et al., 1996; Howell, 2005; Bernstein & Putnam, 1986). This fragmentation of consciousness can lead to multiple areas of disturbance across affects, memories, perception, interpersonal functioning, body image, cognitions, identity, and self-organization (Putnam, 1989b; Spitzer et al., 2007). Dissociation can be viewed as a multidimensional construct that occurs on a spectrum of experience spanning from intermittent occurrences to defensive affect regulation to chronic split self-states (Bernstein & Putnam, 1986; Putnam, 1989; Davies &

Frawley, 1994; Briere, Weathers, & Runtz, 2005; Holmes et al., 2005). The common aspect across dissociative experiences of amnesia, depersonalization, derealization, affective numbing, and identity splits is the compartmentalization of subjective experience. Utilizing Winnicott's (1971) ideas of potential space, dissociation can also be observed as a breakdown in the capacity to tolerate interaction among psychological dialectics (e.g. fantasy-reality, internal-external, me-not me, self-other, symbol-symbolized). Such a form of dissociation leads to disruptions in play, creativity, symbolization, and intersubjectivity (Ogden, 1985; 1989).

The nature of dissociation as a multidimensional set of experiences involving impaired integration calls for multiple lenses in trying to understand the impact of dissociation on functioning. Different measures can serve to examine dissociation on a continuum from normal to pathological as well as to assess the taxonomic presence of certain symptoms. Many instruments rely on individual self-reports of experiences that reflect dissociative behaviors, affects, and conscious self-perceptions (Bernstein & Putnam, 1986; Briere, 2002). The Reality Fantasy Scale (RFS; Tibon, Handelzalts, & Weinberger, 2005) assesses dissociation via how the individual constructs meaning on the Rorschach, which tasks the individual with finding and creating responses from ambiguous visual elements (Smith, 1990). Capturing dissociation as an in vivo process as opposed to retrospective self-reports offers an alternative, implicit approach to identifying dissociative vulnerabilities. Such a process-based, psychodynamic approach allows not just for measurement and examination of psychopathology (e.g. the breakdown of potential space) but also a marker for psychological health, defined as noticeable and flexible use of perceptual and ideational material concurrently. Active, flexible utilization of potential space is associated with psychological maturation (Winnicott, 1971; Ogden, 1985; Pizer, 1992) as well as

being able to successfully engage in psychotherapy (Winnicott, 1971; Ogden, 1994; Summers, 2005).

Study Aims

Considering the links between PTSD and SUD as well as the impediments to processing and symbolization that occur due to trauma and substance use, the different qualities of dissociation that occur for comorbid PTSD-SUD merit further research. Following a multidimensional conceptualization of dissociation, multiple lenses are needed to differentiate their separate intensities and impacts on individual functioning. Additionally, examining the role of distinct dissociative processes within treatment has the potential to advance understanding into how certain types of disintegration influence an individual's preparedness for and response to certain interventions. Better understanding of the factors that influence therapeutic change will help address gaps in treatment response for a vulnerable population and may support increased effectiveness in customized treatment planning. Furthermore, applying a process-based psychoanalytic assessment of dissociation as a complement to the individual's conscious awareness of behavioral, cognitive, memory, and affective symptoms of dissociation via self-report has the potential to bridge understanding of intrapsychic processes of symbolization with behavioral and cognitive patterns. As such, areas of convergence and divergence should be investigated amongst different operationalized measures of dissociation.

CHAPTER 2: REVIEW OF THE LITERATURE

This project is positioned as a response to the existing body of literature on the intersection and interaction of PTSD, SUD, dissociation, and psychotherapy. Within the literature, an overview of dissociation will first be pursued in order to illuminate the distinct theories and processes that fall under the umbrella of dissociation. Second, the presence of dissociation in trauma and substance abuse will be examined in considering dissociative processes as linking mechanisms when the conditions co-occur. Next, treatment of comorbid PTSD-SUD will be reviewed along with the contributions of dissociation upon psychotherapy. Relatedly, how an individual utilizes potential space will be evaluated in order to establish the influence it exerts upon therapeutic interventions. Conversely, dissociative impairments will be discussed to illustrate their negative implications. Following this, distinct measures of dissociation will be investigated in order to differentiate the separate instruments at the study's disposal. Lastly, aims will be presented along with hypotheses under examination. The methods of the study will be provided in the following chapter.

Theories of Dissociation

Dissociation is a developmentally sensitive process used as a form of self-hypnosis in order to escape an overwhelming stressor (Counts, 1990; Terr, 1991). Dissociation can be adaptive and maladaptive, verb and noun, as well as cause and effect (Spiegel, 1990, Tarnoplosky, 2003). Within specific moments, it can have a defensive function used to keep certain mental events from consciousness, especially painful affects and memories, as well as to down-regulate psychological and physiological stress following the emergence of anxiety-provoking situations or internal states (Putnam, 1989b; Briere, Scott, & Weathers, 2005). Dissociation can be conceptualized as both a process that the individual experiences and an

outcome such as a structural change, particularly in regards to trauma (Howell, 2005). Dissociation can be both peritraumatic (during) and posttraumatic (afterwards) (Marmar et al., 1994; Saxe, Geary, Hall, & Kaplow, 2008). The concept of dissociation thus represents a wide set of symptoms and disruptions that share a theme of impaired integration within the mind (Cardena, 1994: Spitzer et al., 2007; Putnam, 1997). Considering the broad spectrums of dissociative processes and functions, an analysis of theory is necessary to deconstruct dissociation.

Janet first wrote about dissociation in 1889, believing that a split existed in the mind of traumatized individuals that evidenced conversion symptoms (van der Hart & Friedman, 1989; Counts, 1990). He believed that such a schism occurred when the intensity of an event inundated the individual and had to be broken off from consciousness. Initial thinking conceptualized dissociation as an abnormal, discontinuous phenomenon that was only experienced by a certain group of people based on a combination of innate biological factors and traumatic histories (Ellenberger 1970). This diathesis-stress model theorized that dissociated ideas were posttraumatic deficits and symptoms that had to the potential to become fixed but, if powerful enough, were eventually split off from one's personality.

Many other eminent figures associated with the initial development of modern psychiatry, such as James, Prince, and Rush in North America, and Charcot and Freud in Europe, examined this phenomenon and its impact and role within the human experience (Putnam, 1989b). As a whole, the field of psychology has presented various conceptualizations of dissociation. In reviewing these multiple perspectives, the need to measure and examine dissociation as a multi-layered phenomenon that occurs symptomatically, structurally, and implicitly becomes evident.

Early Psychoanalytic Conceptualizations

During his ongoing development of psychoanalytic theory, Sigmund Freud examined and utilized concepts consistent with current definitions of dissociation. Anna O's symptoms were described as having two separate, vacillating states of consciousness that possessed different moods and behavioral styles, implying the presence of dissociative splits (Breuer, 1893). Her suffering of reminiscences via hysterical symptoms also captured the presence of traumatic memories being cut off from consciousness as well as hypnoid processes of conversion. Soon thereafter, Freud (1894) discussed the presence of splitting in the psyche. His initial use of repression was conceptualized as a vertical split in consciousness as opposed to the horizontal split it became once he developed the topographical model (Eagle, 2000; Davies, 1996). Much later, Freud (1938a) returned to writing about the presence of vertical splits in the ego wherein separate competing ideas about external reality were kept separate. Such a defense represented not a repression of id content but a cognitive compartmentalization of multiple perspectives. Freud (1938b) also discussed splitting within the ego as a result of conflicts between instinctual demands and external reality. The differentiation of repression as related to forbidden impulses and dissociation as splitting of consciousness was an ongoing process throughout his career (Brenner, 2001; Whitmer, 2001).

Sandor Ferenczi's work focused on the impact of trauma, particularly childhood sexual abuse (Howell, 2005). Ferenczi (1932) contemplated the relationship between trauma and dissociation, stressing the interaction between a child's subjective experience of trauma in juxtaposition to relational dynamics within the family (Aron & Frankel, 1994). Sexual abuse was viewed as creating an experience of disorder between affection and sexuality as the child's pursuit of comfort and attention is corrupted and taken advantage of by the molester. According

to Ferenczi, sexuality became intertwined with power dynamics of victim and victimizer. The entrapment of seduction, the role of silence and denial by the perpetrator, and the reversal of affection into aggression combine to create an atmosphere of confusion that hinders the child's capacity to give voice to feelings of shame, rage, and violation (Rachman, 1989). In this context, dissociation serves as a means of emotional numbing wherein the mind could detach from the aggression that has been suffered. Identification with the aggressor as proposed by Ferenczi (1932), wherein the "bad" object is taken into the child's mind instead of being located in the environment, represents a process of developing dissociated self-states. Aiming to protect the child from the dangerous reality while preserving the good representations of the abuser, the child is left with a self that is identified with the aggressor and another that has experienced the distress of the trauma. Dissociation as splitting of self and object representations also allows the child to separate feelings of pain from experiences of mastery through the opportunity to turn passive into active (Frankel, 2002).

Identification with the aggressor as dissociative process also occurs in non-sexual, abusive and neglectful caretaking. Fairbairn (1952) described how children's overriding need for their parent creates a dilemma with the lived reality of relational trauma. The alternatives of isolation and abandonment are avoided by a child's internalizing the badness of the parent into the self so that the illusion of a good parental object can be maintained. Such internalization of the bad parent is a defensive attempt at controlling the threatening object. Paradoxically, the abusive object maintains a power over the individual's object relational world, undermining healthy growth by maintaining an attachment to the abuser as well as through reenactments of the trauma via other abusive relationships. The ego is left at the mercy of an internal persecutor and the identification with a bad object leaves the child feeling that he or she is toxic.

Furthermore, since the badness lies within, the child is vulnerable to shame. Again, this splitting apart of bad aspects of the caretaker in order to preserve a good image of the internal object is a form of dissociation (Fairbairn, 1952). This splitting aims to protect the idealized representation of the mother and to defend against the shameful sense of badness that exists via the identification with the abusive or neglectful caretaker.

These early psychoanalytic conceptualizations of dissociative experience established ideas that have been built upon and expanded as the field of psychology has matured. To review, dissociation's function as a coping mechanism that seeks to organize psychic experience supports examination of how cognitive and affective processing is altered following fearful lived events. Identifying the potential for the individual's compartmentalization of overwhelming memories and affects sets the foundation for links between dissociation and trauma. The splitting of the ego and object representations as a reaction to discordant attachment experiences are forerunners of relational theories into dissociative self-states and multiplicity. The evolution of these ideas will be expanded in upcoming sections.

Information-Processing Models

Dissociation as a cognitive process generally refers to three distinct phenomenon (van der Hart, van der Kolk, & Boon, 1996). Primary dissociation occurs when sensory and emotional elements are not integrated into memory. This level fractionates conscious access to certain aspects of the event. Secondary dissociation is more severe and involves experiences of depersonalization and derealization. This level of dissociation often occurs during the trauma and allows the person to take a spectator stance to the overwhelming event. Tertiary dissociation represents the development of distinct cognitive states that possess their own affective and behavioral patterns, which encapsulate the extremes of Dissociative Identity Disorder (DID).

These three separate types of dissociation suggest a hierarchy for what the individual can tolerate and what the mind does in order to protect itself from increasing levels of anxiety.

Within this model, dissociation represents a set of cognitive processes that organize experience via the temporary or permanent separation of mental structures, content, and processes (van der Kolk et al., 1996). When exposed to sufficient anxiety that produces disorganization, the individual seeks to reestablish psychic equanimity (Counts, 1990). In order to do so, some aspects of the overwhelming experience may become omitted or disconnected. If relief from anxiety is achieved from such a process, the new pattern may be maintained, repeated, and generalized. Over time, ongoing dissociation works as an avoidant script that inhibits and restricts attention in order to deal with trauma-related intrusions as well as to prevent stressful life experiences. This alteration in information processing functions to reduce one's anxiety while reinforcing the stimulus barrier against perceived threats (Kluft, 1985). The state-change that occurs when dissociation is in process leads to a lack of integration amongst certain combinations of thought, feeling, affect, and verbal memory. Over time, this state-change can become more permanent, never allowing the conscious experience of dissociative events. As a result, dissociation interferes with social and self understanding as well as the tolerance of affect (Armstrong, 2002).

Driving dissociative breakdowns in integration is a pathological fear structure (Foa & Hearst-Ikeda, 1996). Schauer and Elbert (2010) propose evolutionary-acquired stages of traumatic fear responses that escalate across freeze-flight-fight-fright-flag-faint based on the perceived level of threat. In order to survive, overwhelming danger provokes immobility, pain tolerance, and switches in consciousness, self-monitoring, and behavior outside the normal range. To do so, dissociation invokes parasympathetic inhibition that primarily occurs within the

freeze, fright, flag, and faint stages (Simeon, Guralnik, Knutelska, Yehuda, & Schmeidler, 2003). A pathological fear structure develops when the processes of shutdown in integrating sensation, emotion, cognition and narrative memory become repetitive, conditioned, and detached from contextual cues (Bolles & Fanselow, 1980; Schauer & Elbert, 2010). If defining trauma as an impingement that crosses one's tolerance level for anxiety, dissociation can be induced in a variety of settings based upon the situation and the individual. Dissociation can occur for the infant that can no longer stand frustration while it can also occur for the adult that has experienced a physical attack. When an individual's developmentally acquired ego resources are not enough to contain and organize experience, the compartmentalization of mental events via dissociation provides a pathway to achieve a sense of stabilization and to reduce anxiety.

Influenced by the intensity of the fear reaction induced during the initial insult, the individual experiencing after-event stress is prone to repeat the stages whenever the fear network is activated (Schauer & Elbert, 2010). Traumatic memories exist with information about dangerous stimuli, one's reactions, and its meaning to the individual. When this structure becomes intense and persistent, excessive response elements of avoidance and hyperarousal emerge, particularly when fear is unrealistic and misattuned to stimuli. The individual becomes stuck through repetition of specific cognitive and affective fear responses and rigidly may seek protection via dissociation from the anxiety associated with and generalized from the traumatic memory (Davidson & Foa, 1991). From this perspective, dissociation is a narrowing of attention, information processing, and self-monitoring that compartmentalizes overwhelming internal states and reduces overstimulation perceived as dangerous. Elaborating upon this idea, Foa, Steketee, and Rothbaum (1989) conceptualize PTSD as a syndrome of impaired information processing of trauma built on faulty associations and evaluations. Dissociation that serves to

prevent the activation of traumatic structures eventually becomes a problematic system in overcoming the consequences of trauma by keeping the lived experience unprocessed and distorted. As such conceived, dissociation and the phobic structures it conceals serve to underlie the persistence of PTSD.

Models of restricted information processing reflect the narrowing of attention to lived experience, affects, and memories within dissociation and its repetitive overutilization in order to contain traumatic experience. Avoiding distressful internal states becomes entrenched as it allows relief from fear but continuously must be re-applied in order to restrict conscious awareness. As the processing of lived experience, both past and present, becomes more constricted and compartmentalized and a new stabilization dependent upon dissociation results, changes in coherence and cohesiveness within one's identity can occur (Steele & van der Hart, 2009, van der Hart, Nijenhuis, & Steel, 2006). When the individual becomes confined into certain modes of self and other experience that vacillate depending upon the activation of fear structures, social cues and feedback become misinterpreted through the prism of trauma. These impairments in information processing set the stage for impingements on relational and attachment systems that inevitably result in altered interpersonal functioning and changes in self organization.

Contemporary Relational Theories

Relational theories consider dissociation that occurs interpersonally as fragmentation and oscillation in self and other experience. Such dissociation disrupts relationships both internal and external (Bromberg, 1998). Dissociated self-states become divided leading to separate constellations of motivations, agency, and sensitivities. As these organizations of self experience grow increasingly split, the potential for dissociative confusion increases (Frawley-O'Dea,

1997). Constancy becomes challenged as the individual vacillates across separate cognitive, affective, and intersubjective positions, creating an active field for projective identification and enactment.

Relational dissociation is built on an idea of normative multiple selves that become integrated coherently over the course of development rather than a unitary, singular self (Hilgard, 1977, 1994; Bromberg 1994, 2003). Sullivan (1953) initially proposed a concept of the self that is organized around dissociative gaps. Within this paradigm, the self is not considered united following birth. Through maturation, multiple self-states evolve and attain a feeling of unity within the individual that links together the discontinuous parts rather than merge into a single construct (James, 1891; Bromberg, 1994). Within this view, the human mind is a complex system of shifting states of consciousness that develop from the multiplicity of one's interactions with others. Each state structure has its own dominant affect, perceptual realities, range of primary memories, and style of interpersonal relating (Bromberg, 1994). Potential space facilitates the coexistence of and communication between different self-states (LaMothe, 2005). Additionally, certain self-states tend to be activated based on interpersonal contexts and internal dynamics (Stern, 1997, 2003).

Relational models view dissociation as a universal experience within a system of multiple selves. Consequently, dissociation is an adaptive process that occurs on a continuum for all humans, ranging from normative to pathological across daydreaming to amnesia and dissociative identity disorder (Bromberg, 1994). Within this perspective, the capacity to dissociate is seen as essential to the stability and growth of personality. Ultimately, dissociative self-states are not purely representative of fragmentation, but also an adaptation against it. Such theories of dissociation assume self-systems that can achieve relative independence of autonomy, cognition

and affect, a hierarchical control that manages interactions between substructures and functions to keep consciousness feeling seamless, as well as an executive ego that monitors and controls structures and their maturation.

Dissociative self-states can play a role in the aftermath of trauma, providing a solution to the confusion when incompatible affects and perceptions exceed the ego's capacity for processing (Bromberg, 1994, 2003). Within relational trauma, dissociation is an adaptation to experiencing incompatible modes of relating to the same object at the same time (Bromberg, 2001a). The individual can be overwhelmed by the simultaneous experience of fear and security. The splitting of certain contrasting self-states represents a hypnoid capacity in service of preserving the integrity of the self and protecting against depersonalization (Bromberg, 1994; Bromberg, 2003). The automatic isolation between self-states gives personal identity a subjective sense of consistency. When one mode is activated, the other contrasting state is not accessible to consciousness, producing a false subjective experience of continuity. However, increasing dissociation reduces perception to a narrow band in the here-and-now, hindering connectivity with the past as well as other affective and cognitive processes in the present. The traumatized individual can become haunted by the ghosts of dissociated self-states that are inaccessible when the person is not in that mode of consciousness. Chronic and cumulative abuse results in a breakdown of interaction between self-states, fueling a dissociative gap that results in vacillation between segregated constellations of self and other.

Inherent to the dissociation of self-states is a process of shifting back and forth. Such oscillation in relational experience occurs in the interest of self-protection and outside of conscious awareness (Pearlman & Courtois, 2005). Brenner (2001) contends that there is an unconscious, chameleon-like separation from one state to another. When a shift occurs, the

individual does not necessarily perceive it depending upon the depth of the dissociative schism. Levine (1990) believes that the oscillation is indicative of a conflict between a neurotic part and a more impulsive, primitive part within the individual's psyche.

Davies and Frawley (1994) view this back and forth as the ego's splitting off of mutually exclusive, alternating states that are constellations of self and object representations. Trauma that exceeds an individual's capacity for tolerance and integration tends to bind separate self-states together via alternating patterns while at the same time dividing them via lack of constancy and connectivity. In a way, trauma becomes an axis in which different states of internalized representations of self and other are rotated in and out of consciousness, depending upon the context of the here-and-now. Within this paradigm, dissociative self-states are both defensive and structural. By disowning unacceptable mental content to a part of psyche that is considered the bad, toxic container, the individual achieves a sense of cohesion through division. When certain split states are not activated, the person is protected from the affective experiences of anxiety, shame, and guilt that are embedded in the dissociated constellation of self-states. However, the vacillation between dissociated self-states means they can quickly become activated, leading to seemingly abrupt shifts in mood and behavior for the outside observer. The different ego capacities that exist within each state, with their own range of associated affects, cognitions, physiology, and memories, seem to reflect separate life histories (Davies & Frawley, 1994). Such separate presentations of the ego support why individuals with chronic trauma histories display such a wide range of symptoms.

Dissociative self-states have significant impact on interpersonal functioning (Whitmer, 2001). Within the various modes of consciousness, the individual seeks to elicit a corresponding response from another that helps to reflect and clarify self-awareness. Because the individual

unconsciously seeks to allow the experience of not knowing to continue, particularly in the context of a trauma history, the other is enlisted to react in specific ways that will give stability and validity to the individual's self-concept. This interactive pursuit helps to create the illusion of being understood. Ultimately, depending upon another to recognize the individual's sense of self creates an ongoing vulnerability. Furthermore, the need for specific relational responses in the here-and-now gives power to the other over the traumatized individual. Such dependency can fuel a dramatic interpersonal style that compulsively demands acknowledgement from the other in service of self awareness.

As previously stated, vacillating self-states impact interpersonal functioning via projective identification and enactment (Howell, 2005). These processes are the interpersonal language of dissociative states. When an individual has limited access to self experience or certain states become intolerable internally, projective identification and enactment allow certain aspects of self to be located in an object. Projective identification occurs due to the unconscious motivation of a dissociated self-state that is seeking to be felt and represented (Howell, 2005). By locating an unformulated part of the self in the other while occupying a distinct self-state consciously, multiple aspects of the individual can be in contact while still disintegrated. Such a view posits projective identification as both proof of dissociated, multiple self-states and as a process of dissociative projection.

Within enactment, certain states exist as unsymbolized self content that is persistently banished from the individual's coherent sense of self (Stern, 2003, 2004). This dissociated experience repetitively breaks through in certain contexts and is re-created with an object. Repetition of the past defends against the risk of unknown threat while also seeking an illusory achievement of mastery. Dissociative self-states that facilitate enactment seek out duplication of

the known impingement instead of the uncertain vulnerability. Conceptualized this way, enactment is a form of control against ambiguity.

Attachment theory provides another framework to spotlight the relational development and function of dissociation (Blizard, 2003; Liotti, 1999, 2009; Lyons-Ruth 1999; Lyons-Ruth & Jacobvitz, 1999). Internal working models of relationships (IWMs) are procedural models of interpersonal patterns with specific systems of behavior, expectations, and understandings. IWMs create the blueprints for how an individual conducts himself with others and distinct IWMs are built up over time within multiple attachment relationships. When the links between these structures are impaired, the quality of interpersonal behavior, reactivity, and thinking become increasingly dependent upon the activated IWM. Dissociation occurs when these procedural, dyadic IWMs become disconnected. Enactment as a dissociative process can be considered the activation of unconscious, implicit procedural knowledge of being with a specific attachment object (Lyons-Ruth, 1999). Attachment theory perspectives on dissociation can also be linked with relational psychoanalytic ideas (Liotti, 1999; Blizard, 2003). Analogizing IWMs with self-states, dissociation can be viewed similarly as the segregation of internal structures that lead to vacillation in interpersonal functioning.

Dissociation can also be viewed through the lens of fragmented reflective capacities. Viewing mentalization as a specific form of internalization that creates self-organizing capacities, impairments to this ability create vulnerabilities for segregation and discontinuity. The individual with impaired mentalization is hindered in achieving internal continuity, potentially leading to vacillations in how one experiences the self and others. Consequently, the individual experiences impingements in being able to find self in the other as well as being able to create intersubjective links (Howell, 2005). Early childhood trauma can lead to the

development of such impaired mentalization (Fonagy et al., 1995; Fonagy, Gergely, Jurist, & Target, 2002). This paradigm of dissociation as fragmented self reflection possesses links with disorganized attachment and early trauma (Blizard, 2003; Fonagy, 2001). Additionally, impediments in mentalizing share ideas with conceptualizations of dissociation as deficit in use of and access to potential space.

Dissociation as Breakdown of Potential Space

As mentioned earlier, potential space facilitates interrelatedness and interaction between separate, paradoxical self-states (LaMothe, 2005). As a concept, potential space encapsulates significant developmental capacities, including the capacity to play, the area of transitional objects and phenomena, the analytic space, the area of cultural experience, and the area of creativity (Winnicott, 1971). Consequently, it is a core theoretical concept touching upon a variety of maturational experiences and achievements. However, such breadth has been criticized for creating an obscure and nonspecific term that authors have applied to many separate processes (Westen, 2002). As a result, this dissertation aims to help delineate the construct of potential space and its link to various realms of psychic experience as well as to clarify how the concept can be measured and applied within research.

Winnicott (1953, 1954, 1967, 1971) developed the concept of potential space to represent the interaction between intrapsychic and external reality which develops within a recognizing and containing child-caregiver dyad and emerges out of the capacity to be alone and the differentiation of me and not-me experience (Tuber, 2008). As frustration and delay challenge the illusion of omnipotent merger, development pushes the infant forward from union with the caregiver towards the establishment of the capacity for a psychological dialectic of oneness and separateness that are mutually reinforcing of each other (Ogden, 1985). Potential space

functions as an intermediate area of experience where psychological interactions can develop and be maintained. As such, potential space is an achievement of and location for self-development as well as a process where opposites are in dynamic tension, simultaneously and continually creating and negating each other (Ogden, 1989). This new arena comes to possess dual qualities for the infant that bridge me and not-me, inner and outer, subjective object and objective object, object relatedness and privacy, fantasy and reality, as well as unconscious and conscious (Ogden 1985, 1989; Tuber, 2008). As opposing ideas are able to co-exist for the infant, a space for playing with ideas, thoughts, and feelings is created that maintains the dynamic interchange amongst psychological dialectics.

Similarly dialectic, transitional objects and phenomena become possible following the development of potential space. Initially, the transitional object, at the same time the infant and not the infant, becomes a bridging symbol for mutual separateness and oneness (Ogden, 1985). The object becomes catchected with special meaning that allows for the representation of the wished-for object (Jemstedt, 2000). It is neither solely an external object nor a hallucinatory experience; the infant creates something that is both inner and outer reality, manufacturing a building block for developing internalized representations. Furthermore, transitional phenomena support the consolidation of agency and bolster the infant's experience of mastery and control (LaMothe, 2005). Engaging both libidinal and aggressive impulses (another layer of dialectical forces), the infant can omnipotently create and then destroy the transitional object through participation in potential space. Nonetheless, the real object remains, confronting the infant with the limits of his power. Individuation and attachment are dually serviced as the infant learns to both accept and use reality in collaboration with his inner world and fantasy life.

Capacities for subjectivity, symbolization, and intersubjectivity develop as the child moves from the transitional object as replacement for caregiver to symbol for caregiver (Ogden, 1985; Tuber, 2008; Newirth, 1996; LaMothe, 2005). Originally, the inevitable frustrations between caregiver and infant engender longing that fuels the use of potential space to symbolize the wished-for object. Differentiation between the symbol and symbolized emerge within potential space. Being able to distinguish between the two is representative of being able to discriminate one's thought from that which one is thinking about, representing a developmental achievement of occupying an observing stance that can simultaneously and separately hold symbol and symbolized in mind (Ogden, 1985). As the field of experience becomes more heterogeneous, the infant continually seeks increased organization through symbolic use of potential space. The differentiation of symbol, symbolized, and observing self are the foundation on which inner and outer life can interact and create subjectivity. With these separate relational paradigms, potential space becomes an intersubjective arena where two minds, particularly primary caregiver and child, can interact. As potential space evolves, the subject world of self and other overlaps (Pizer, 1992).

Over time, potential space becomes an area of psychic experience where the mind interacts with and takes in cultural experience, including art, creativity, religion, ideals, and taboos (Winnicott 1953, 1967). The capacity to play is a foundation for creativity (Winnicott, 1971; Jemstedt, 2000). The individual begins with being able to create the desired object but is able to extend this capacity to other elements of wish and desire. Ultimately, an individual that is able to utilize potential space is able to take part in life in an increasingly imaginative and inventive way. As a result, aspects of potential space, particularly the capacity for play and creativity, represent characteristics of psychic health that support the individual's pursuit of

attachment, agency, and vitality. Altogether, multiple aspects and components of potential space are theorized. It is both a process and a developmental achievement that facilitates processes of intrapsychic interaction as well as intersubjective mutuality and thirdness.

Breakdown in potential space signifies a form of dissociation wherein the permeability and interactions between dialectics become rigid and segregated (Ogden, 1985; 1989). This conceptualization of dissociation incorporates consideration of how the individual creates thought and symbols as well as the degree to which certain ideas and fantasy are available to consciousness or split off. Bion (1957) described the phenomenon of losing dialectical processes as a failure to integrate thoughts and feelings in a manner that connect internal and external reality. The collapse of potential space deprives the individual of an intermediate realm to link psychological opposites and ambivalence, leaving the individual to vacillate between contrasting states rather than having them mutually interacting and overlapping (Ogden, 1985). Left isolated from one another, they cannot inform each other. As a result, the capacity to create meaning out of experience is limited and the promise of play is inhibited. The greater and more rigid the divide left in the breakdown of potential space, the more the individual becomes vulnerable to a dissociative gap that is both intrapsychic and intersubjective.

Trauma represents a specific threat to the individual's capacity to utilize potential space. As an external event out of the individual's control, traumatic experiences exist in the mind as real sources of threat and are resistant to constructive symbolization (Fonagy & Target, 1998; Wigren, 1996). Trauma engenders a regressive simplification wherein dialectical tension is lost along with its associated complexity and richness. Potential space can collapse into a fixed perception of reality that becomes replayed through hyperarousal, re-experiencing, and enactment. As such, trauma can disrupt one's sense of time through both hyperawareness of the

impingement on the self, a fear of repeated violation, as well as attempts to deny and disavow the event (Gentile, 2006). Furthermore, defenses such as splitting of the self and identification involve loss of relationality as self and other roles become rigid (Wigren, 1996). Such collapses in time sense, dialectical dynamics, and intersubjectivity represent breakdowns in capacities for mental play, symbolization, and vitality.

In this traumatic wake, the capacity for play is degraded and ideational imagery and interpersonal events become distorted and confused (Wigren, 1996; Ogden, 1985; LaMothe, 2005). The potential for "as-if" thinking, reflection, and creativity is reduced (Bromberg, 1993, 1995). Imagination can become foreclosed, leaving the individual mired in the literal and the concrete of their trauma (Wigren, 1996). Consequently, the unsymbolized and unprocessed experiences of the trauma resist entering the realm of potential space for symbolization. As the associative net becomes corrupted with traumatic fear and reactivity, symbols no longer maintain the same potential for flexibility and fantasy. Instead, the symbolic is confused as the actual and vice versa.

As a developmental achievement, use of potential space is an elementary process for the advancement of selfhood, play, creativity, agency, individuation, attachment, and intersubjectivity (LaMothe, 2005). A core feature of this psychical domain is allowing for interaction between psychological dialectics and the overlap of subjectivities between self and other (Ogden, 1985; LaMothe, 2005). Traumatic events represent significant threats to the person's ongoing maintenance and use of potential space. With decreased access to the intermediate area of experience for me and not-me, self and other, as well as reality and fantasy, the individual becomes deprived of full capacities for meaning-making, relationality, and psychic health and flexibility. Such breakdowns in dialectical synergy and dynamism represent a

process-based conceptualization of dissociation (Ogden, 1985; 1989). Within this paradigm, potential space has been damaged by trauma.

The Intersection of Trauma, Substance Abuse and Dissociation

Dissociation and Trauma

Early psychoanalytic, information-processing, relational, and potential space conceptualizations of dissociation all share perspectives on trauma having an integral role in its development and function. How exactly trauma comes to take on this pervasive centrality deserves investigation. Acute, traumatic stress is experienced when the individual does not have the internal resources to cope with an outside threat and external forces (e.g. objects, institutions) do not provide adequate protection. Trauma also possesses a dissonance with pre-existing schemata of the world that holds the potential to disrupt the mind's capacity for organization, information processing, and interrelatedness.

During peritraumatic dissociation, memory is not encoded into verbal, narrative forms (Bromberg, 2001b). Instead, the experience is taken in as somatosensory data that is disorganizing, undermines reflection, and poses a threat to personal integrity. Dissociation becomes a solution to the terror of dissolution of the self as well as to contain experience that resists symbolization and reflection (Bromberg, 1994). The interruption and unlinking of certain memories, affects, and self-states aim to protect the individual's sense of continuity and to achieve reorganization following traumatic infringement (Counts, 1990; Putnam, 1992, 1997). This defense enables the person to cope both during and after the event. Through fragmentation, dissociation paradoxically preserves the individual's aim for unity and integration. Incompatible states of consciousness and mental functioning are segregated and accessible only in discontinuous means. After the event, dissociation continues to organize traumatic experience

while also interfering with processing of the event via overinterpreting current stimuli as reminders, generalizing hyperarousal, and avoiding opportunities for new learning and processing (van der Kolk et al., 1996). Dissociation can become automatic and rigidly applied to other distressful situations, particularly those that are perceived to resemble the initial insult (van der Kolk et al., 1996). As voluntary control dissipates, dissociation becomes pathological (Howell, 2005). This consequence of trauma occurs on a spectrum spanning from intermittent occurrences to chronic dissociative states (Bernstein & Putnam, 1986).

Trauma and dissociation appear to have a mutually entangled relationship. Trauma can give birth to dissociation while this defensive mechanism enables the traumatic experiences to continue affecting the person well after the event. As such, dissociation operates as a fundamental experience within posttraumatic stress reactions. Likewise, its presence underlies the persistence of PTSD (Foa & Hearst-Ikeda, 1996). It fuels avoidance as well as occurs during re-experiencing and intrusive symptoms (e.g. nightmares, recollections, flashbacks) wherein the dissociated structure remerges and distorts the individual's interaction with the here and now, collapsing past into present. Dissociation also sets the stage for hyperarousal and vigilance. These states hover at low-levels to prevent the unexpected from reoccurring. The traumatized individual on alert for another violation remains haunted by the dissociated trauma that remains unprocessed. Without increased organization, the dissociated experience continues to emerge through enactments and projective identification.

Structural dissociation theory aims to elaborate on information-processing ideas and link them with concepts of personality following the impact of trauma (Steele & van der Hart, 2009; van der Hart et al., 2006). This model involves the abstraction of two distinct systems of functioning: action and defense. The action mode includes activities of attachment, exploration,

play, and reproduction while the defense mode involves survival-related aims of fight and flight, freezing, and submission. These separate goal-directed organizations involve particular innate, psychobiological tendencies that are difficult to engage simultaneously. Trauma is theorized as leading to a fragmentation of cohesion between the action and defense systems, which promotes biphasic alternations. The severity of structural dissociation between action and defense systems that results occurs on a continuum and, as impingement from the environment increases, the separation of personality parts becomes more pronounced and rigid. This psychic divide occurs in order to keep the intolerable, distressed aspects of the defense system from interfering in the action domain.

Dissociation and Substance Abuse

As in trauma, dissociation also can be conceptualized as a core feature of substance abuse. Internally, substance abuse can function to reduce aversive and negative emotions, to enhance positive affects, to reduce access to certain thinking and memory states, and to augment social connection. All of these individual functions involve dissociative processes wherein some aspect of one's internal world is either reduced or magnified, from the splitting off of affect, thought, and memory to the fragmentation of certain relational states of self and object representations. As such, one paradigm of substance abuse views the act as creating an experience of dissociation that creates and inhibits specific internal states (Briere & Runtz, 1987; Roesler & Dafler, 1993; Hussey & Singer, 1993). This view represents an extension of other substance abuse theories that focus on the drug's function in regulating and defending against specific affects (Khantzian, 1985, 2003; Khantzian & Albanese, 2008; Wurmser, 1977, 1978; McDougall, 1978, 1979).

The relationship between dissociation and substance abuse has various interactions and consequences. When dissociation is associated with substance abuse, more severe clinical problems tend to be present (Evren, Sar, Evren, & Daldubak, 2008; Tamar-Gurol, Sar, Karadag, Evren, & Karagoz, 2008). Different substances may be related to different processes of dissociation, particularly along lines of drug effects. Alcohol leading to blackout can be a viewed as flight from consciousness (Keane, Geraldi, Lyons & Wolfe, 1988). Marijuana use can produce sensations of derealization and memory loss (Blum, 1984). Cocaine has mood-elevating action that bypasses negative affects while opiates mute and inhibit feelings (Somer & Avni, 2003). Opiates can also be considered as anxiety and pain reducing, particularly relevant for posttraumatic fears. In ways, chemical dissociation produces internal state changes that are similar to various psychological forms of dissociation.

Chemical dissociation can be viewed as a repetitive, situational, and functional event with a primary motivation of psychic reorganization. The drug acts as the initiator of a desired process of dissociation. Absence of dissociation in self-reports by active users has been argued as supportive of chemical dissociation as opposed to psychological dissociation (Briere & Runtz, 1987; Roesler & Dafler, 1993; Somer, Altus, & Ginzburg, 2010). The substance of choice performs as a prosthesis that is utilized when dissociation is sought. The immediacy and general dependability of drug effect so long as enough is consumed can be more reliable when psychological defense mechanisms are experienced as inefficient or not enough ego resources are available to maintain their activation (Hussey & Singer, 1993). Additionally, relational dissociation can also be achieved via substance abuse wherein the self vacillates between the addicted self and other self-states (Director, 2005).

Inconsistent evidence exists showing relationships between intensity of dissociative symptoms and intensity and chronicity of drug use as well as drug of choice (Schafer et al., 2007; Somer et al., 2010; Wenzel, Bernstein, Handelsman, Rinaldi, Ruggiero, & Higgins, 1996). Some studies display lower levels of dissociation in alcohol alone compared to drug use and combined alcohol and drug use (Langeland, Draijer, & van den Brink, 2002; Schafer et al. 2007) while other studies show high rates of dissociation across substances (Wenzel et al., 1996). Such inconsistency can potentially be explained through the consideration of multiple pathways linking dissociation and substance abuse (Somer et al., 2010). One trajectory occurs when substance abuse predates dissociation. Long-term use builds over time into an addiction to the dissociative process (Wenzel et al., 1996). Conversely, dissociation can predate substance use (Kessler et al., 1995; Tamar-Gurol et al., 2008: Somer et al., 2010). This latter trajectory is viewed as the individual turning to an external agent in the drug because psychological coping has been or becomes insufficient. Evidence revealing increases in dissociation post-detox suggests that the individual must reactivate a less-efficient psychological form of dissociation in the absence of the chemically altered state, signaling a preferred hierarchy of external coping before internal (Somer & Avni, 2003).

A corollary of dissociation predating substance abuse exists in the aftermath of trauma. A variety of research indicates trauma predating substance abuse in patients that exhibit dissociative processes (Dunn, Ryan, Paolo, & Van Fleet, 1995; Zlotnick, Shea, Recupero, Bidadi, Pearlstein, & Brown, 1997). In this context, drug use is not solely about finding an external agent to achieve chemical dissociation but a motivated action to organize and contain posttraumatic experience. Drug use can be functional when a rapid and efficient relief in posttraumatic pain is sought and when substances are available (Somer, 2009). When

psychological and chemical dissociation are both being pursued, a double dissociation occurs that provides the individual with multiple pathways for compartmentalizing internal states.

Dissociation as Link between Substance Abuse and PTSD

A variety of experiences can help to conceptualize links between substance abuse and trauma. For individuals with trauma histories, drug use can help to enhance self-esteem, reduce isolation by identification with peer group while simultaneously inhibiting interpersonal closeness, serve as a manifestation of self-destructive tendencies, mitigate depression and anxiety, and foster avoidance from traumatic memories (Singer, Petchers, & Hussey, 1989; Cavaiola & Schiff, 1988; Briere, 1989). Chemical dissociation as a coping strategy is another way to frame the co-occurrence of posttraumatic stress and substance abuse (Roesler & Dafler, 1993). Individuals seeking dissociation through substances may represent a specific subgroup of traumatized individuals that cannot psychologically dissociate or to whom substances become a preferred pathway to achieve dissociation (Langeland et al., 2002). For this group, such functional use of substances to dissociate dovetails with the concept of self-medication (Krystal, 1978, 1995; Khantzian & Albanese, 2008; Brown & Wolfe, 2004; Jacobsen, Southwick & Kosten, 2001; Roesler & Dafler, 1993). The drug both enables dissociation as well as combats dissociative intrusion and hyperarousal. The toxic trauma self-state can be denied and more preferred self-other constellation can be stabilized. As such, the drug is utilized as an external agent that reinstates a desired sense of control in the wake of overwhelming helplessness. Traumatic content spanning affects, memories, and self-states can all be kept unintegrated through the ongoing maintenance of drug use. Repetitive and persistent use becomes necessary to maintain dissociation.

The presence of dissociative processes as a link between trauma and substance abuse has various correlates. The variable most associated with high dissociation during substance use has been shown to be severity of trauma (Somer & Avni, 2003; Schafer et al., 2010). Chaotic and invasive home environments, childhood emotional abuse, and sexual abuse have been related to the use of drug as dissociative device (Roesler & Dafler, 1993; Van Den Bosch, Verheul, Langeland, & Van Den Brink, 2003; Schafer et al., 2007; Schafer et al., 2010). Higher levels of craving between drug use as well as higher levels of dissociation during abstinence correlate with higher levels of dissociation during use (Somer & Avni, 2003). Additionally, younger age of substance abuse onset has been shown to be associated with increased chemical dissociation (Schafer et al. 2007; Schafer et al., 2010).

Still, conflicting evidence exists behind the links between trauma, substance abuse, and dissociation (Ross et al., 1992; Langeland et al., 2002; van den Bosch, Verheul, Langeland, & van den Brink, 2003). When factoring out age, sex, substance type, and severity of childhood traumatic events, the relationship between dissociation, trauma, and substance use has been absent in certain studies (Schafer et al., 2010; van Den Bosch et al., 2003). Various aspects of historical experience seem to be at play when drug use serves a posttraumatic dissociative regulatory function. One particularly relevant factor within the inconsistent results may be not capturing the presence of emotional trauma (Schafer et al., 2010). This perspective supposes that emotional impingement is critical to initiate a need for dissociative defenses.

Another difficulty in clarifying the relationship between dissociation, trauma, and substance abuse occurs due to measurement. Distinguishing between psychological and chemical dissociation is difficult on self-reports (van den Bosch et al., 2003). Similarly, ongoing drug use may mask dissociative symptoms leading to inaccurate measurement during research.

Moreover, use of instruments that do not capture different types of dissociation impedes research into the dissociative processes within comorbid posttraumatic stress and substance abuse. Such limitations are the rationale for this study. Another motivating factor for this proposed research involves the gaps that exist within the current treatments of comorbid PTSD and substance abuse.

The Impact Upon Treatment

Psychotherapy for Posttraumatic Stress and Substance Abuse

Given the relationship between PTSD and SUDs, particularly in the realm of dissociation, the question arises of whether to treat these conditions separately or conjointly. Until recently, the psychotherapeutic treatment of comorbid PTSD and SUDs focused initially on substance use, deferring focus on the trauma. However, this approach was vulnerable to the influence of posttraumatic symptoms on cravings and relapse (Back, Dansky, Coffey, Saladin, Sonne, & Brady, 2000; Saladin, Drobes, Coffey, Dansky, Brady, & Kilpatrick, 2003). Additionally, individuals lacking improvements in PTSD symptoms have exhibited poorer substance use outcomes than those having made improvements with their PTSD (Read, Brown, & Kahler, 2004). It is now widely recommended to work on both disorders from the start of treatment (K. T. Brady, 2001; Najavits, Weiss, & Shaw, 1997; Ouimette, Moos, & Brown, 2003).

Integrated treatments that address both trauma and substance use aim to combine elements of existing psychotherapeutic treatments for the individual disorders (Brady, Back, & Coffey, 2004). Particularly, several conjoint approaches have been created that apply cognitive behavioral methods for addressing PTSD symptoms and substance use. Seeking Safety is a manualized treatment aimed at modifying thoughts, behaviors, and interpersonal issues through increased coping skills (Najavits, Weiss, Shaw, & Muenz, 1998). Concurrent Treatment of

PTSD and Cocaine Dependence (CTPCD) utilizes imaginal and in vivo exposure therapies combined with relapse prevention skills (Back et al., 2001; Brady et al., 2001). Substance Dependence Posttraumatic Stress Therapy utilizes in vivo exposure with psychoeducation and coping skills (Triffleman, Carroll, & Kellogg, 1999). Acceptance and Commitment Therapy (ACT) focuses on the role of avoidance as part of the functional relationship between PTSD and SUD (Blackledge, 2004; Hayes, Wilson, Gilford, Follette, & Stosahl, 1996). Initial results of conjoint approaches have been promising compared to treatment as usual comparisons (Brady et al., 2001; McFall et al., 2005; Hien, Cohen, Miele, Litt, & Capstick, 2004; Read, Brown, & Kahler, 2004; Zlotnick, Najavits, Rohsenow, & Johnson, 2003).

However, some questions and gaps remain to be investigated. Comparisons of the integrated treatment Seeking Safety to SUD-only treatment of Relapse Prevention Therapy (RPT) have produced conflicting results in terms of treatment response (Najavits, 2007; Hien et al., 2004). While Najavits (2007) has indicated that Seeking Safety produces increased improvement in outcomes, results from the Hien et al. (2004) study have shown that gains in substance use and PTSD symptoms from the integrated approach were not as longstanding in comparison to the cognitive-behavioral focus supplied via relapse-prevention alone. Future research needs to further compare integrated and separated treatments as well as to contrast different integrated treatments with each other. Research also needs to address small sample sizes in to-date investigations of integrated treatments (McGovern, Alterman, Drake & Dauten, 2009). Furthermore, combined treatments still experience high dropout rates, ranging from 37 to 62% (Hien, Cohen, Miele, Litt, & Capstick, 2004; Back, Brady, & Coffey, 2004; McGovern, Alterman, Drake, & Dauten, 2009). These elevated attrition rates leave a large portion of individuals still requiring effective intervention. Additionally, a wide variance of response exists

as patients still exhibit symptoms of PTSD posttreatment (McGovern, Alterman, Drake, & Dauten, 2009). Questions remain about how some individuals achieve certain therapeutic gains while others do not.

The narrow focus on symptoms to diagnose as well as to assess treatment response represents one specific limitation within previous research. Such an approach lacks attention to individual capacities as well as to processes of change that take place within a treatment. Research that considers the role of intrapsychic processes may be able to examine possible factors that mediate treatment response. How an individual utilizes potential space is one relevant domain for exploration given its role within trauma and dissociation. Potential space also has impact on the process of psychotherapy.

The Role of Potential Space within Psychotherapy

In examining the process of treatment, potential space has value in providing concepts to consider the individual's ability for symbolization, possibly particularly useful in imaginal exposure, as well the individual's capacity to enter engagement with the therapist, independent of the modality. The act and course of therapy can be viewed through the lens of potential space (Winnicott, 1971; Ogden, 1994; LaMothe, 2008). Winnicott (1971) sees the ability to utilize therapy as related to the capacity to play that emerges within potential space. Within this paradigm, playing is viewed as a pathway for the individual to become immersed in the therapeutic relationship and the communication that transpires. Stated differently, therapy is a specialized form of play that occurs between therapist and patient.

The therapeutic relationship is a particular form of interaction that calls upon aspects of potential space to manage complexity and ambiguity within the dyad as well as the client's pursuit of change (Pizer, 1992; Wigren, 1999; Ogden, 1994). Forging a treatment dynamic that

can be maximally created by the patient within the realities of the specific therapist becomes an objective (Summers, 2005). Treatments that exist only in the repetition of past patterns are limited as they do not participate in the realm of potential space. Likewise, rigid and unanalyzed transference forecloses this intermediate area of experience. This view privileges the value of the therapist helping the patient to take an observing stance towards himself. Utilizing potential space and communicating within it facilitates this goal. The co-created dynamic where the intersubjective and the individual subjective each create and negate each other allow for both separateness and togetherness (Ogden, 1994; LaMothe, 2008). Furthermore, the paradoxical interactions of subjectivity and objectivity, subjectivity and intersubjectivity, sameness and difference, knowing and unknowing, as well as privacy and mutuality allow the dyad to play together (Pizer, 1992; 1996). Dialectical tension between two separate individuals with their own thoughts, feelings, sensations, identities, and values creates an environment for new thought and opportunities for self development through symbolization and reflection (Summers, 2005). Ogden (1994) names this particular experience of potential space "the analytic third." (p. 4)

The application of potential space to psychotherapy also represents a technical strategy that aims to support maturation and reorganization of the self (Summers, 2005). In trying to nurture and maintenance potential space within the dyad, the therapist seeks to facilitate the creation of new ideas and symbols through identifying and spotlighting previously arrested affective states and interrelatedness (Loewald, 1960; Summers, 2000; 2005). Elaboration of these developing states is supported through the activation of potential space. Working through of defenses initiates increased opportunities for creative, flexible moments wherein reality can become infused with new personal meaning (Summers, 2005). Likewise, analyzing transference

repetitions aim to open up potential space for the possibility of new manners of relating with and experiencing the therapist as object.

Activating and participating within potential space between therapist and patient values illusion, ambiguity, and play (Khan, 1973; Pizer, 1996; Charles, 1998). Treatment can be enlivened by tolerance for and use of mystery, fantasy, the unknown, and hypothetical thinking wherein the therapeutic relationship can feel alive and in motion (Charles, 1998; Summers, 2005). The verbal format of treatment supports this ambiguous construction of meaning while allowing for the intersubjective to occur between two individual subjectivities as both members of the dyad draw upon their own perceptions, feelings and beliefs. Metaphor becomes a tool that supports play and for bridging the minds of therapist and patient without negating their separateness (Pizer, 1996). Another dialogic tool to stimulate potential space exists within the subjunctive mode of language that allows for straddling between what is not and what might be (Pizer, 1996). Lively, wishful exchanges support the patient's creativity. Of note, in contrast to a therapeutic approach that values potential space, a therapist that assumes an authoritarian position and explains the patient to himself too concretely potentially runs the risk of foreclosing use of potential space within the treatment. The correct interpretation is less relevant than promoting a process wherein the patient can take up the therapist's ideas for consideration and, as a result, can create options to symbolize new aspects of self-experience (Pizer, 1996).

Consideration of how potential space influences psychotherapy has primarily focused on insight- and process-oriented forms of treatment, particularly psychoanalytic psychotherapy and psychoanalysis. As detailed above, such approaches emphasize the role of the treatment relationship in examining individual functioning and in therapeutic action. The degree to which potential space influences other modalities of treatment is a much less rich area of the literature.

Couples therapy has been conceptualized as a process that activates interaction between each partner's use of potential space (Crawley & Grant, 2001). Additionally, art and drama therapy have been viewed as tapping creative components of potential space via the rehearsal of new forms of self-experience (Grainger, 2008). Such an intervention is theorized as generalizing into novel behaviors and interactions. Still, not much has been written about the role of potential space within cognitive psychotherapies. Cautionary reservations have focused on the potential limitations of cognitive approaches in accessing creative aspects of individual functioning as well as in addressing non-cognitive factors that underlie and perpetuate emotional distress (Pizer, 1996; Whiting, 2006).

The reviewed literature on the role of potential space within treatment makes the case for examining the concept's value within the process of psychotherapy as well as an individual's preparedness for treatment. An individual with limited access to potential space due to dissociative processes may not be able to fully enter and benefit from the therapeutic endeavor. In considering this possibility, the impact of dissociation upon treatment warrants review.

Dissociation and Its Influence in Psychotherapy

Dissociative experiences are theorized as impediments to the treatment of trauma (Davidson & Foa, 1991). Some literature documents dissociation as not predictive of PTSD treatment response (Hagenaars, van Minnen, & Hoogduin, 2010; Speckens, Ehlers, Hackmann, & Clark, 2006; Resick, Suvak, Johnides, Mitchell, & Iverson, 2012). However, much evidence illustrates that its presence is a negative predictor for cognitive-behavioral treatments, including exposure therapy, as well as for psychodynamic approaches (Michelson, June, Vives, Testa, & Marchione, 1998; Rufer et al., 2006; Spitzer et al., 2007; Ebner-Priemer et al., 2009; Lynch, Forman, Mendelsohn, & Herman, 2008). Poorer treatment response, increased rates of dropouts,

and poorer maintenance at follow-up have been shown across these studies. Dissociative symptoms have also been indicated as negative predictors for response to substance abuse treatment, including shorter periods of abstinence and earlier treatment termination (Somer, 2003; Somer & Avni, 2003; Karadag et al., 2005; Sar & Ross, 2006). Clients with high levels of dissociation are considered challenging and difficult to treat due to the complexity and severity of their symptoms (Putnam, 1989a). Furthermore, specific types of dissociation have been found to have interaction effects on response-to-treatment when paired with certain treatments (Resick et al., 2012). Within this study, individuals with high pretreatment levels of depersonalization responded better to integrated treatments that included traumatic re-processing whereas participants with low baseline dissociation had improved results when treated with focused cognitive-behavioral attempts at modifying current maladaptive beliefs related to previous traumas. Such findings suggest that tailoring treatment based on presenting symptoms of dissociation can provide increased customized interventions.

In trying to better understand its relationship to treatment response, various elements of dissociation influence psychotherapy. Because dissociative processes entail inhibition and fragmentation in cognition, affect, sensation, and narrative memory, emotional processing and learning seen as necessary for trauma-treatment are impeded (Ebner-Priemer et al., 2009). With limited capacities to discover new ideas and understanding, the potential for change due to therapy becomes constrained. Additionally, negative emotions routinely stimulated within treatment can push for activation of emotional numbing and parasympathetic flight, inhibiting essential activation and investment for therapeutic traction (Foa & Kozak, 1986). Dissociation involved with fantasy absorption and depersonalization may also impair reality testing and

cognitive flexibility within sessions, engendering detachment and distraction that make treatments less effective.

Dissociation as breakdown in dialectical tension within potential space also leads to restrictions upon therapeutic action. As psychological dialectics are rigidly kept separate, the possibility of constructing new meaning can become constrained. Most specifically, reality and fantasy lack a space to inform each other, hindering the possibility of illuminating unconscious conflict and wish (Ogden, 1985; 1989). Interpretations are impeded as they are experienced concretely and resist being used symbolically by the patient (Charles, 1998; Erel-Brodsky, 2008). Loss of potential space also impairs access to creative thought and tolerance for ambivalence. Flight from reflection and ambiguity can occur, leaving the therapy stuck in rigid ideas and repetitive action. Splitting and projection become prevalent in the absence of potential space (Charles, 1998). As togetherness and intersubjectivity with the therapist provoke anxiety and avoidant defenses, a lack of potential space can keep the patient at a distance. And as the patient and therapist fail to create interchange laced with vitality and possibility, the transference is at risk of being deadened, as if stuck. While clearly meaningful for that specific case, such a therapeutic situation has become vulnerable to a competition between separate minds rather than allowing for shared meaning and elaboration. Vacillations in reality and fantasy levels of thinking reveal an either-or paradigm as opposed to a both-and dialectic.

Dissociative experiences represent impediments to therapeutic change. However, when reprocessing is a goal for treatment, dissociation must be treated for therapeutic progress to occur. As such, dissociation cannot be simply bypassed, but rather must be engaged and confronted so that associative, symbolic, and structural links may become possible. Reducing dissociative processes can be viewed as a foundational goal within interventions that privilege

the re-processing and psychic integration of traumatic experience (van der Kolk, McFarlane & van der Hart, 1996; van der Hart et al., 2006; Steele & van der Hart, 2007; Courtois, Ford, & Cloitre, 2009). Individuals that respond to treatment exhibit reductions in dissociation (Lynch et al., 2008). Still, recent research has identified that different levels of dissociation signal the need for tailored management techniques (Schauer, & Elbert, 2010; Resick et al., 2012). Specifically, Resick et al. (2012) identified response-to-treatment interactions that reflected the relative appropriateness of emotional re-processing approaches in the presence of high dissociation, particularly depersonalization. In addition to supporting the importance of matching treatment type to dissociative levels, such a finding also suggested the value of applying multidimensional assessment into distinct forms of dissociation. Furthermore, differentiated influence of dissociation upon psychotherapeutic interventions indicated the utility of investigating potential interaction effects between pretreatment dissociative processes and other psychotherapies. Such research aims to examine the question of whether the individual can benefit from the therapy they are about to receive.

Considering the crises associated with the prevalence and persistence of PTSD and SUD and their resistance to treatment when comorbid, accurate assessment and monitoring of dissociation can supply a significant clinical tool to illuminate the potential for limitations in processing, learning and change. Given a multidimensional conceptualization of separate dissociative processes, research requires differentiation of what types of dissociation are present within these disorders and their possible influence on treatment response. Complementary to widely used self-reports that focus on dissociative symptoms within the patient's conscious awareness, the process-based definition of dissociation as breakdown in potential space provides an additional lens to consider mechanisms of influence within therapeutic interventions.

Furthermore, areas of overlap between a psychoanalytic, process-focused assessment of dissociation and symptom-focused measures of dissociation may provide bridges between internal processes and behavioral patterns. Taking into account the impact of dissociation on psychotherapy as well as the limitations on current treatments of comorbid PTSD and substance abuse, a study that compares and contrasts different types of dissociation and their relationship to treatment response offers value in trying to better understand the gaps in improvement that exist across individuals. In considering such a study, distinct instruments of dissociation need to be identified and evaluated for which perspectives and theories are being utilized and measured.

Measurement of Dissociation

Viewing dissociation as an umbrella term for discrete forms of dissociative experiences, measurements that capture multiple types of dissociation are essential to examine both their presence and significance within substance abuse and trauma. The most prevalent and expedient means to document dissociation are through self-reports. The Dissociation Experiences Scale (DES; Bernstein & Putnam, 1986) is the most widely used self-report measure, providing a summed total score that conceptualizes dissociation as a trait and aims to measure the individual's ongoing frequency of dissociation. Such an instrument is consistent with the view that dissociation is a unidimensional state that exists on a dissociative continuum (Bremner, Vermetten, Southwick, Krystal & Charney, 1998). Distinct types of symptoms are viewed as manifestations of a single underlying construct (van IJzendoorn & Schuengel, 1996; Bernstein, Ellason, Ross & Vanderlinden, 2001). The DES was developed as a screening tool to assist in the identification of patients with dissociative psychopathology. Analysis of its use has evidenced its criterion validity, aligning with criterion for DSM-IV dissociative disorder diagnoses (e.g. DID, PTSD, and DDNOS), as well as concurrent validity in its ability to predict

both PTSD and DID through an overall cutoff score (Carlson et al., 1993; Armstrong, 1995; van IJzendoorn & Schuengel, 1996).

However, certain limitations exist when using the DES. Viewing dissociation as a trait has not been supported fully by evidence (Briere, Weathers, & Runtz, 2005). Furthermore, empirical research of a three-dimensional DES model of dissociation based on amnesia, absorption and imaginative involvement, and depersonalization and derealization has not been found due to a lack of construct validity across studies (Carlson & Putnam, 1993; Van IJzendoorn & Schuengel, 1996). The DES as a research tool is primarily utilized through the total score of dissociative processes. When applied as a single score instrument, the DES does not discriminate between different components of dissociation. Additionally, the lack of affective dissociation as a factor represents an additional drawback for the DES.

The 30-item Multiscale Dissociation Inventory (MDI; Briere, 2002) is a standardized questionnaire that conceptualizes dissociation as multidimensional across six domains (Disengagement, Depersonalization, Derealization, Memory Disturbance, Emotional Constriction, and Identity Dissociation). These different components of the MDI can be combined to describe the individual's overall profile of dissociation. Summing to a global score is valid only to the extent that symptom type and severity index the same construct whereas separate scales allow for measurement and examination of distinct processes. The MDI allows for both as opposed to the DES. The six separate scales based on unique dissociative constructs align with a view of dissociation as a multifaceted collection of separate but related dimensions as opposed to a unitary trait. Furthermore, unlike the DES, the MDI is fully standardized and normed in the general population.

Overall, reviews of the literature reveal that the MDI has been much less widely utilized in the research of dissociation compared to the DES. Utilizing both allows the flexibility of applying a single variable construct and a multivariate approach. Comparisons have evidenced convergent validity up to 79% wherein MDI subscales of Identity Dissociation, Memory Disturbance, Depersonalization, and Derealization predict the DES (Briere, Weathers, & Runtz, 2005). Disengagement, and Emotional Constriction have been shown to be measures that do not overlap between these two self-reports, suggesting that while high levels of covariance may be present, different domains of dissociation are not fully shared across both instruments.

Still, issues exist with the application of the DES, the MDI, and other self-reports, such as the dissociation scale of the Trauma Symptom Inventory (TSI; Briere, Elliot, Harris & Cotman, 1995). Considering the Likert scales utilized to assess frequency and severity, cellar effects are possible. Likert scales also possess limitations through the conversion of arbitrary ordinal terms into numerical values, thereby presupposing similar scales as well as being open to personal interpretation (Kazdin, 2006). Additionally, the separate scales found on the MDI and DES are not likely to be completely orthogonal as they both are attempting to measure processes of fragmentation and avoidance. Some questions are also similar. As a result, intercorrelations are expectable within the MDI scales as well as across the different measures. Furthermore, the high face validity of self-reports makes them vulnerable to impression management, exaggeration, and minimization (Leavitt & Labott, 1997). The scales produced are representations of a construct of interest, but may not necessarily be an accurate measurement of the individual's underlying experience, or the underlying construct itself (Kazdin, 2006; Bornstein, 2010). As instruments attempting to describe observable phenomena and conscious experience, self-reports do not directly tap into the previously discussed underlying and unconscious processes that

create and sustain dissociative symptoms. Given that dissociation involves a compartmentalization of psychological experience, there are risks and limitations in asking a subject to consciously recall and specify the degree to which they might be having dissociative experiences.

Projective tests represent a complimentary approach to the examination of dissociation. They provide indirect measurement of psychological constructs and are less dependent upon the individual's awareness of dissociative experiences. Moreover, they are less vulnerable to distortion due to social concerns or manipulative tendencies (Leavitt & Labott, 1997). Additionally, because projective and self-report measure psychological constructs in separate paradigms (i.e. implicit-explicit, indirect-direct, involuntary-voluntary, unconscious-conscious), they are likely to assess different aspects of the patient's functioning and behavior, even if they are trying measure the same construct (Bornstein, 2002). Bornstein (2009) references the energy-mass components of light as a metaphor in which to stress that a process might have multiple components that require different forms of measurement. As such, utilizing both direct reporting as well as projective performance in assessing the same construct provides means in which to capture discontinuous aspects of psychological phenomena.

The Rorschach Inkblot Test is a projective method that stimulates elements of perception, attention, and imagination in order to assess multiple ranges of functioning, particularly those that operate out of direct awareness. The Rorschach has been hypothesized as an ideal "trigger" to activate dissociated memories and feelings and to support their verbal expression (van der Kolk & Ducey, 1989; Armstrong, 2002). Through abstract imagery, it can stimulate psychological variables not accessed by self-report instruments while also moderating the influences of memory, subjectivity, and personal tendencies upon disclosure (Levin & Reis,

1997; Luxenberg & Levin, 2004). The ambiguity of the task pushes the individual to delve into one's internal store of associations that have been avoided through fragmentation of links between mental events (Armstrong, 2002). As the task requires translating perceptual, kinesthetic, and emotional cues into verbal narrative, the Rorschach challenges dissociation while also provoking it. As a result, the Rorschach can tap into the individual's fantasy life, affects and mood, cognitive and schematic tendencies, as well as processes for constructing meaning.

Certain coding schemes have been applied to document the Rorschach's clinical utility with dissociative symptoms. Early attempts to use specific determinant types have not held up over multiple studies (Wagner & Heise, 1974; Wagner, 1978; Wagner, Allison & Wagner, 1983; Labott, Leavitt, Braun, & Sachs, 1992; Leavitt & Labott, 1997). Recently, by coding for sex, blood, and anatomy responses in addition to special scores of aggression and morbidity via the Trauma Content Index (TC/R; Armstrong & Loewenstein, 1990) the Rorschach has been identified as a discriminatory tool for highly dissociative patients, mainly those diagnosed with dissociative identity disorder (DID). The TC/R can effectively separate patients with such disorders from schizophrenic and borderline samples (Brand, Armstrong, & Loewenstein, 2006). Using traumatic content and themes to discriminate individuals diagnosed with DID implies a connection between trauma and dissociation. However, the TC/R has not been shown to differentiate abused individuals from nonabused with great accuracy (Kamphuis, Kugeares, & Finn, 2000).

Research has started to move beyond the focus on DID to wider expressions of dissociation, particularly within the context of trauma. A variety of dissociative responses have been translated from descriptive data to specific variables that frame both cognitive and affective

dissociation (Armstrong, 2002). Emotional distancing via the presence of FD responses (Armstrong & Loewenstein, 1990), affective numbing via low Afr (Levin & Reis, 1997), elevated fantasy production via high M rates (Scroppo, Weinberger, Drob, & Eagle, 1998), as well as the avoidance of nuances of reality as in high L (Kaser-Boyd & Evans, 2008) represent formal scoring markers that are theoretically associated with dissociative avoidance and intrusion. Prevalence of thought-disordered responses can also be indicative of chaotic and illogical aspects of traumatic experience that counter otherwise intact reality testing and underlie the application of dissociation (Armstrong, 2002; Levin & Reis, 1997).

Using a set of heuristic rules for labeling the dissociative quality of a response, Leavitt & Labott (1997) reliably established a relationship between a set of non-Exner Rorschach variables with the DES for patients. Individuals providing indicators of dissociation on their Rorschach scored significantly higher on the DES. Based on this measure, Leavitt & Labott (1998) were able to accurately predict diagnoses of dissociative identity disorder, although their coding schemes have not yet been transposed to Exner variables. Additionally, specific analogues between Exner CS (2003) variables and self-report instruments of dissociation have yet to be established.

Some ambiguity about the types of dissociation provoked by the Rorschach appears to exist. Whether the Rorschach induces fragmentation between thoughts, feelings, fantasies, and the inkblot itself or whether the dissociation occurs more intersubjectively between clinician and client is unclear. The Reality-Fantasy Scale (RFS; Tibon, Handelzalts, & Weinberger, 2005) is a psychodynamically oriented Exner CS-based coding system designed to operationalize the concept of potential space and its possible breakdown. Such a paradigm views dissociation as an intrapsychic process for the examinee. Ogden (1985; 1989) and Smith (1990) contend that the

Rorschach invites the subject into a dialectical, intermediate space between reality and fantasy as well as the conscious and unconscious. The subject must both find and create the object from the blot using his individual cognitive, perceptual, and associative tendencies. The ambiguity of the Rorschach tasks the individual with having to make meaning out of the blot, creating a tension between the internal and external. The search for meaning and organization out of uncertainty pulls for activation of potential space.

Scores derived from the RFS are intended to measure at what distance from the self is the percept created and experienced. Dissociation has been conceptualized on the RFS as a vacillation between overwhelmed preoccupation with fantasy elements of the card (e.g. the card is alive) to excessive focus on reality components of the inkblot wherein the capacity to imagine is inhibited and robbed of vitality (e.g. the card is ink). This construct is operationalized as the standard deviation of the RFS scores and represented as the variable RFS-S. Variance as measured by the scatter of response patterns can attempt to show a fluctuation between reality-bound and fantasy-derived processes. A dissociative response style implies a lack of integration between reality aspects of the card and imaginative processes of the subject. The individual must be in a reality mode or a fantasy mode; there is no space for play in between them. Stated differently, reality and fantasy are parallel and equal leading to vacillation as if they were two poles. Within this framework, dissociation is a biphasic, alternating failure to develop and utilize potential space (Smith, 1990). Such dissociation can be further viewed as a collapse of meaning-making potential. Dissociation as captured by the RFS has been demonstrated as characteristic of individuals with binge eating behaviors as well as dissociative identity disorder (Tibon & Rothschild, 2009; Zeligman, Smith, & Tibon, 2012). These studies have demonstrated the utility of the Rorschach in exploring psychoanalytic conceptualizations of psychopathology.

One important quality of the RFS is that while it can show the presence of dissociative psychopathology within the domain of potential space, it can also show adaptive use of it. Because the RFS allows both the measure of impingements on current functioning as well psychic health, a wider, more robust view of the individual can be taken as opposed to instruments that focus on the degree and severity to which psychopathology is present. Capturing both positive and negative aspects of functioning holds the potential to be a valuable tool in evaluating what resources are available to the individual at a specific snapshot moment in their life. In trying to ascertain how well a person is able to use and take advantage of the interventions received, this flexibility and multiplicity in measurement can potentially be useful in better understanding someone's pretreatment strengths and vulnerabilities.

Still, the Rorschach method is not without its controversy. Criticisms have focused upon its informal use for purposes that have not been validated as well as overstating the Rorschach's value above results indicated by formal research (Garb, Wood, Lilienfeld, & Nezworski, 2005; Wood, Nezworski, Lilienfeld, & Garb, 2003). Basing interpretations off informal results as well as scores that have not been normed has been associated with misidentifying psychopathology (Hunsley & Bailey, 1999). As such, the Rorschach has potential limitations like the self-report measures of dissociation. While not bypassing these respective issues completely, combined use of these approaches may help to better measure and understand pathological processes and their impact on treatment. Moreover, continued study is needed to develop and investigate appropriate assessments and associated scoring systems that are both valid and repeatable for research and clinical practice. In analyzing the RFS scoring system's capacity to measure dissociation and its potential impact on response-to-treatment, this study attempts to further this pursuit.

Statement of the Problem

The hypotheses and objectives of this study follow from the literature reviewed above and intend to further examine the presence of dissociation within comorbid PTSD and SUD as well as to investigate their impact upon treatment. As such, this study aims to: 1) identify affective, cognitive, identity, and potential space aspects of dissociation that may be present amongst individuals diagnosed with both PTSD and substance dependence; 2) to examine the impact of pretreatment levels of dissociation on response to treatment; and 3) to perform exploratory analyses into the potential interaction of pretreatment dissociation and psychotherapy received upon treatment outcomes.

In conducting this analysis, my hypotheses are guided by several components of research and theory. First, viewing dissociation as a multidimensional phenomenon involving a variety of cognitive, affective, memory, perceptual, identity, and relational breakdowns in integration supports the need for multiple lenses in order to capture distinct dissociative processes (Bernstein & Putnam, 1986; Briere, Weathers, & Runtz, 2005; Holmes et al., 2005). In a sample of individuals with PTSD and comorbid SUD where dissociation is foundational and expectable (Schafer et al., 2010; Somer & Avni, 2003; van der Kolk et al., 1996), investigating the presence and intensity of unique forms of dissociation will aim to further understanding into how they may or may not co-exist and relate to one another. Furthermore, this study will attempt to examine ways in which to not just distinguish dissociative processes, but to consider the potential differences in their impact on functioning and treatment. Greater recognition into multiple types of dissociation may hold significant influence on how to conceptualize and execute psychotherapeutic interventions.

Given the various inconsistencies in examining the role of dissociation within this population and its different presentations, multiple measures will be useful in honing in on specific dissociative mechanisms as opposed to dissociation as a unitary phenomenon (Somer et al., 2010; Schafer et al., 2010). Additionally, in attempting to capture the presence and consequence of multiple dissociative processes, the ambiguity of the Rorschach supplies a field in which dissociation can be provoked and measured (Armstrong, 2002; Tibon & Rothschild, 2009). As a result, the projective method provides an opportunity to measure a process in action as opposed to estimating the presence of dissociation via the presence of certain representation symptoms. The application of the Rorschach as a complement to self-reports may help to examine the presence of an internal process of dissociation compared to symptoms-focused measures of dissociative experiences (Bornstein, 2002). Additionally, data integrated across different types of test data may provide further insights than provided by just one form of assessment.

Through utilization of the RFS, this study can attempt to measure an individual's access to potential space, reflecting the interface between projective methods and psychoanalytic theory (Bornstein, 2010). Furthermore, areas of overlap between the RFS and self-reports may help to consider bridges between psychoanalytic theory on potential space with cognitive-behavioral ideas of dissociation. Such a structure provides the opportunity for analysis of convergent validity amongst distinct operationalized measures of dissociation. Based on separate constructs that share concepts of compartmentalization and fragmentation, this project hypothesizes that the DES, MDI, and RFS-S will demonstrate small to medium levels of convergence, while still retaining portions of unexplained variability.

Next, guided by findings evidencing the negative role in which dissociation plays on treatment, this study hypothesizes that pre-treatment levels of dissociation will negatively predict response to treatment (Davidson & Foa, 1991; Spitzer et al., 2007; Ebner-Priemer et al., 2009; Ogden, 1985; 1989). This project will allow a comparison of which types of dissociation have the most sensitivity in capturing the individual's readiness and availability to benefit from psychological intervention. The RFS may hold value as being derived from a projective test that is able to tap underlying processes of meaning-making (van der Kolk & Ducey, 1989; Smith, 1990; Tibon et al., 2005). As a measure based on the individual's capacity to use potential space, the RFS captures an area of experience that allows for symbolic thought, internalization, and play (Tibon et al., 2005). Given that therapy can be considered an act of using potential space between therapist and client, the RFS is hypothesized as more attuned to how the individual can utilize the skills and the relationship provided within the therapeutic experience. Furthermore, this analysis will help to evaluate the role of the Rorschach as a clinical instrument in planning treatment.

Hypotheses of Study

Hypothesis 1

Unique operationalized measures of dissociative processes (e.g. DES global score, MDI global score, MDI sub-scales, and RFS-S) will show convergence upon correlational analysis. However, effect size will be small to moderate as divergence will still be prevalent due to the disparate conceptualizations of dissociation on which each measure is based. Divergence will be most evident between the RFS-S and the self-report measures.

Hypothesis 2

Pre-treatment dissociation will negatively predict response to treatment and, as a measure of the individual's capacity to utilize potential space, the RFS-S will display greater sensitivity relative to the other measures of dissociation in predicting how participants respond to psychotherapy.

Hypothesis 3

Exploratory analysis will examine interaction effects between type of therapy and pre-treatment dissociation. It is estimated that high levels of pretreatment dissociation will respond better to treatment that utilizes techniques that support re-processing and re-organization of fragmented traumatic experience.

CHAPTER 3: METHOD

Overview

The present study conducted a secondary analysis with quantitative measures of dissociation collected from participants in a parent study involving randomized design with repeated measures. The Stage 1B therapy trial providing the data empirically investigated the effectiveness of an integrated treatment for PTSD-SUD patients involving a modified imaginal exposure intervention (CTPSD; Concurrent Treatment of PTSD and Substance Dependence) compared to substance treatment alone (RPT; Relapse Prevention Therapy) and a delayed treatment control group. Testing a treatment which utilizes exposure techniques was highly indicated given the strong empirical support for imaginal exposure therapy among PTSD patients, the dearth of current co-morbid SUD and PTSD treatments that show lasting and clinically significant effects for PTSD symptoms, and the strong findings in a CTPSD pilot study (Brady, Dansky, Back, Foa, & Carroll, 2001). The substudy of this dissertation focused on differentiating the types of dissociation present within the PTSD-SUD population as well as examining the role of dissociation as a possible mediator of treatment response. Assessments were administered over the course of January 2011 through January 2013.

Sample

Data was collected from consented participants in an ongoing randomized control treatment program for individuals with PTSD (full or sub threshold) and comorbid substance dependence. Individuals needed to be between the ages of 18-65, English-speaking, have had at least one traumatic interpersonal event in their lifetime and meet current full or subthreshold PTSD, as well as lifetime presence of substance dependence with recent use in the past 90 days. Persons were excluded if they were actively suicidal, had bipolar or psychotic histories, or had

recently begun psychotropic medication within the past 8 weeks. Individuals were recruited through local newspaper advertisements related to trauma, brochures and fliers, as well as referrals to program from local treatment providers. Responding persons were administered a screening assessment to determine inclusion and exclusion criteria by clinical psychology doctoral students and licensed social workers. If eligible, they were given the opportunity to participate pending informed consent. The study had ongoing IRB approval from the City College of New York and St. Luke's-Roosevelt Hospital Center.

Procedures

Design

As part of a National Institute of Drug Abuse funded grant researching psychotherapy treatments, eligible men and women were recruited for a treatment study comparing the efficacy of two active treatments for individuals with SUD and comorbid PTSD compared to a delayed treatment control condition. The two psychotherapies researched were Concurrent Treatment of PTSD and Substance Dependence (CTPSD), which incorporates cognitive-behavioral therapy and in vivo and imaginal exposure techniques, and Relapse Prevention Treatment (RPT), a cognitive-behavioral therapy focusing on substance misuse behaviors. Treatment consisted of 12 sessions with repeated measures at baseline, completion of treatment, and at 1, 2, and 3-month post-treatment. Weekly repeated measures were utilized to track symptoms during the treatment. The primary outcome examined was PTSD symptom severity. Secondary outcomes were substance use symptom severity, global psychiatric symptom severity, and treatment retention and compliance. An exploratory aim of the trial was to test the potential mechanisms of action in the respective treatments. CTPSD aimed to addresses difficulties with emotion regulation through habituation to anxiety-provoking internal states. RPT did not focus on emotion

regulation deficits in a direct and experiential way. Instead, RPT aimed to specifically target behaviors associated with substance use in order to prevent relapse.

An eligibility screen involving structured interviews, clinician-administered questionnaires, and self-reports was performed initially in order to evaluate inclusion and exclusion criteria for each participant. As part of the baseline assessment, participants were assessed for SUD and PTSD as well as the presence and severity of posttraumatic stress symptomatology and their recent levels of alcohol and drug use. Pending eligibility and signing informed consent, randomized participants were then administered the Rorschach in the week prior to the beginning of treatment by a trained clinical psychology doctoral student. The Rorschach required approximately 30 to 45 minutes for administration. The participants also completed the MDI and the DES self-reports, each taking about 5 minutes to fill out. At the end of the active treatment phase, the participants again attended a follow-up interview that reassessed for substance use as well as posttraumatic stress.

Procedures to assure confidentiality were strictly observed. All data were kept in confidential locked files, identified by participant number only, and kept separately from identifying information used for participant tracking and follow-up contacts. Identifying information was secured in separate locked files. Consent forms were also stored separately from other data in a locked file. Handwritten verbatim responses from the Rorschach were kept in a locked file and were only identifiable by an identification code. No identifying information was disclosed in reports, publications or presentations. Only coded records were entered into the computer and the security of electronic data was ensured at the level of the server, the user, and the database. Rorschach scorers were only provided a code for the transcripts they analyzed. The master list linking the identification numbers and identifying information was stored on a

computer that was secured by username and located on a private server. Files containing any identifying information were to be destroyed five years after the study has been completed. The study maintained confidentiality standards consistent with CUNY IRB during and after the data collection period. All study personnel completed the required human subjects training as mandated by CUNY.

Administration and Coding

The Rorschach was administered by a clinical psychology doctoral student trained in the Comprehensive System. Responses for the Rorschach were recorded verbatim via handwriting by the administrator and later transcribed to electronic files for coding. Protocols were then coded by a doctoral student who did not interact with the research participant. This framework was utilized to minimize scoring bias. After the initial scoring of all protocols was completed, 25% of protocols were randomly selected and rescored blindly and independently by a separate rater. Overall, the two different raters within this project agreed exactly on 82% of RFS responses. Inter-rater reliability, as estimated by Cohen's kappa, was evidenced to be .81, which revealed extremely strong agreement within the Reality-Fantasy Scale scoring of this study.

Rorschach scores according to the Comprehensive System (CS; Exner, 2003) were utilized for each protocol administered. For each response, coders also designated whether a special score of Reality Collapse (RC) applied, according to the RFS system (Tibon, Weinberger, Handelzalts, & Porcelli, 2005). This special score represented a reality collapse into fantasy and was given only to responses in which the subject was observed as if losing distance from the blot (e.g. "I can smell it") or reacting as if the blot was the thing itself.

After the CS and RC scores were determined, RFS variables were then generated for each response on a numerical scale ranging from -5 to 5. RFS scores were calculated according to the

hierarchical rules of the Reality-Fantasy Scale (Tibon, Weinberger, Handelzalts, & Porcelli, 2005). Scores were computed by entering the Rorschach CS scores into RFS software downloaded from the Reality-Fantasy Scale website (Tibon & Suchowski, 2005). A score of -5 represented the most extreme case of using fantasy on the Rorschach with minimum contact with external reality whereas a score of 5 signified the most extreme reliance on the real features of the blot with minimal input from fantasy content. Following the scoring of each response on the RFS, the mean and standard deviation of the RFS of the protocol (RFS-S and RFS-P respectively) were computed. These scores were created for each participant's Rorschach protocol.

Scores for the DES and MDI scales were summed based on the answers provided by each participant into global scales (DES total and MDI total). Additional scores from the MDI were calculated according to specified individual scales (Disengagement, Derealization, Memory Disturbance, Emotional Constriction, and Identity Dissociation).

Measures

Data analyzed within this study was collected at pre- and post-treatment time points. In addition to the primary instruments of the Rorschach, DES, and MDI used to measure dissociation, additional data related to the NIDA-funded study was also utilized to analyze this dissertation's hypotheses.

1. Demographics: Basic demographic data using a questionnaire administered by baseline assessors included identifying variables as well as history of psychiatric and substance abuse treatments.

2. Measures of Dissociation

a. Rorschach Inkblot Method: The Rorschach Inkblot Measure was administered and scored using the Comprehensive System (CS; Exner, 2003). Specific data for this study was created from the Rorschach Reality-Fantasy Scale (RFS). The RFS instrument is a psychometrically validated heuristic-construct based on 12 Exner CS variables and one additional special score of Reality Collapse (RC), wherein the subject is observed as acting as if the blot is the thing itself. Two scores were generated via the RFS: RFS-P represents the mean score and RFS-S signifies the variance. The RFS-S for each protocol was the primary variable of interest, based on a psychodynamically theorized measure of dissociation (Tibon & Rothschild, 2009).

b. *Dissociative Experiences Scale (DES):* The DES is a 28-item brief self-report measure that conceptualizes dissociation as a trait measure and inquires about the percent frequency of dissociative experiences in the daily lives of participants (Bernstein & Putnam, 1986). A response scale is used for participants to quantify their experiences for each item so that scores reflect a wider range of dissociative symptoms than use of a dichotomous rating. The DES scale was developed as a screen to validly quantify dissociative experiences and testing has confirmed good levels of reliability, internal consistent, and construct validity (Bernstein & Putnam, 1986). It has been widely used and demonstrated to be valid in detecting dissociative experiences in both normal and clinical populations. Test of the scale's internal reliability within the study sample resulted in a high Cronbach's alpha of .93.

c. *Multiscale Dissociation Inventory (MDI):* The MDI is a fully standardized and normed 30-item self-report test of dissociative symptomatology (Briere, 2002). Good

psychometric qualities have been found in both the normative and validation samples (Briere, 2002; Briere, Weathers, & Runtz, 2005). Conceptualizing dissociation as a multidimensional variety of phenomenologically distinct symptom clusters, the MDI measures six different types of dissociative processes (Disengagement, Depersonalization, Derealization, Emotional Constriction, Memory Disturbance, Identity Dissociation). Each symptom is rated according to its frequency of occurrence over the prior month on a scale of 1 (never) to 5 (very often) and subscales are then summed within their respective categories. The various scales provide a reliable and valid way to quantify and delineate specific clusters of dissociative symptoms (Briere, 2002). For analysis, the MDI provides t-score conversions that help to normalize the Likert scale data for clinical interpretation and these values will be utilized during correlation and regression analyses. In reviewing the study data, Cronbach's alpha for the total MDI was excellent at .97. For the individual scales of the MDI, a variety of excellent to acceptable values were achieved within the dissertation sample: Disengagement (α = .90), Depersonalization (α = .86), Derealization (α = .92), Emotional Constriction (α = .92), Memory Disturbance (α = .82), and Identity Dissociation (α = .75).

5. *Treatment Outcomes:* Treatment outcomes were assessed using several different methods:
   a. *Clinician Administered PTSD Scale (CAPS):* The CAPS is a structured, clinical interview for assessing the frequency and intensity of signs and symptoms of PTSD. The CAPS measures DSM-IV symptoms of PTSD, associated symptoms of PTSD (e.g., survivor guilt), validity of responses, impairments in social and occupational functioning, and overall symptom severity (Blake et al., 1995). The CAPS has excellent diagnostic usefulness for the DSM-IV PTSD diagnosis and the CAPS has also been found to have

sound psychometric properties across domains of inter-rater reliability, consistency and validity (Blake et al, 1995; Cicchetti, Fontana, & Showalter, 2009). CAPS scores were collected by trained staff at both pretreatment and posttreatment appointments in order to track change over time.

b. *Addiction Severity Index (ASI)*: The ASI is a semi-structured clinical interview designed to address seven potential problem areas in substance-abusing patients: medical status, employment and support, drug use, alcohol use, legal status, family/social status, and psychiatric status (McLellan, Luborsky, O'Brien, & Woody, 1980). The ASI collects demographic data in addition to various historical and current information about functioning within these seven domains. Examination has verified good properties of consistency and validity (Leonhard, Mulvey, Gastfriend, & Shwartz, 2000). Assessment of alcohol and substance use within the past thirty days at both baseline and follow-up time points enabled identification of the primary substance of concern. Alterations in substance use over time were tracked by comparing pretreatment versus posttreatment primary substance use in the previous thirty days.

c. *Therapy Sessions Attended:* Collected from ongoing monitoring of therapy participation, this variable was used to examine a participant's level of sustained engagement in the psychotherapy process.

Data Analyses

Data from 32 participants was included in this substudy. Meta-analysis has revealed that Rorschach assessment produces medium effect sizes (Gronnerod, 2004). This estimate is conservative given the large effect size of .73 found in the Tibon and Rothschild (2009) study on potential space dissociation within eating disordered patients while it is consistent with the

medium effect size of .47 found in the Brand, Armstrong, and Loewenstein (2006) sample of inpatients diagnosed with dissociative disorders compared to norms. Based on these expectations as well as a predictive alpha of .10, a sample of 30 was determined to have adequate power to detect moderate effects.

Posttreatment data were collected for participants, allowing examination of therapy participation as well as changes in PTSD symptoms and substance use behaviors. For those individuals who did not attend a follow-up visit, no response to treatment was estimated. Such an approach to unavailable posttreatment data was conservative in assuming that no change had occurred for these participants, potentially underestimating therapeutic progress. However, this convention enabled response-to-treatment analyses for the full sample of individuals.

Prior to statistical analysis, tests of multivariate normality, linearity, independence of observations, and homoscedasticity were conducted.

Correlational analyses were applied between the RFS-S and the criterion variables from the RFS-P, the DES global scores, as well as the MDI global score and its six separate MDI scales (Hypothesis 1). As an attempt to focus later statistical modeling, the study data were analyzed to examine the relationship between pre-treatment levels of dissociation and treatment outcomes via correlational analyses.

In order to consider the contributions of RFS-S as a measure of dissociation, hierarchical regression models were employed with RFS-S as the primary independent variable (Hypothesis 2). Scores from the RFS-P, MDI and DES were then entered as additional independent variables in the regression model used to examine how pretreatment dissociation might predict response to treatment. Only the MDI subscales were utilized to reflect the MDI's multidimensional conceptualization of dissociation into six different domains as well as to

reduce possible interference of multiple colinearity between the global MDI score and the subscales that form its composite. Partial regression Beta weights were examined to determine the relative contributions of specific measurements of dissociation (e.g. RFS-S, MDI subscales, DES overall scale). RFS-P was also included as a secondary independent variable within hierarchical regression analyses to include the possible effects of individuals who distorted their answers toward either the reality pole or the fantasy pole. Such deviation on the RFS-P is potentially representative of biphasic patterns of avoidance and flooding that reflect a dissociative skew towards rigid ideation. Together, the RFS-P and the RFS-S were theorized to capture how well the individual uses potential space via a combined low RFS-S scatter and a mean RFS-P that falls between the poles of skewed reality and fantasy responses (e.g. RFS-P close to zero). Considering that values farther away from zero represented increasing inflexibility in an individual's access to potential space, the RFS-P variable was transformed to its absolute value to better reflect its underlying conceptualization as well as to support linear regression analyses.

Hierarchical regression analyses were also utilized to analyze the interaction effects between pretreatment dissociation on the RFS-S and type of therapy received (Hypothesis 3). This project focused on RFS-S due to its conceptualization as a variable sensitive to an individual's capacity to utilize potential space and thus benefit from treatment. Partial regression Beta weights were examined for each of the different variables. Additionally, when other dissociation variables demonstrated their own significant contributions to evaluating response-to-treatment in Hypothesis 2, follow-up multiple regression analyses were conducted to evaluate other potential interaction effects with the type of treatment assignment.

As stated above, data from 32 participants were utilized to create the primary data set of this dissertation. These 32 participants represented an Intent-to-Treatment (ITT) sample of all randomized participants who completed the DES, MDI, and Rorschach pretreatment measures of dissociation. For Hypothesis 1, the ITT sample was the group analyzed statistically for relationships between the various measures of dissociation. For Hypothesis 2, hierarchical multiple regression models were first examined within the ITT sample. When a significant association was found, the model was then re-examined for the Treatment Sample (N = 24), which represented all individuals who participated in active treatment. Given the hypothesis about potential interaction effect with type of therapy received, Hypothesis 3 was evaluated within the Treatment Sample only.

CHAPTER 4: RESULTS

Baseline Characteristics

Table 1 depicts demographic characteristics in addition to variables related to pretreatment substance use, PTSD symptoms, and the various measures of dissociation. To review, the average age of participants was 45.7 (SD=9.8). 59.4% identified as African-American, 25.0% as Latino, and 9.4% as Caucasian. Of participants, 40.6% were single, 37.5% were either divorced or separated, and 21.9% were married. The average level of education was completion of high school (13.0 years, SD=2.0). At baseline assessment, 71.9% were employed in some fashion. Prior to study enrollment, participants had received approximately 4 previous treatments for alcohol or substance use. The most common substance use disorder diagnosed was alcohol dependence (75.0%), followed by cocaine (56.2%) and marijuana (21.9%). 25.0% of the sample was diagnosed with alcohol dependence only. 68.8% of participants met *DSM-IV* criteria for PTSD while the remaining 31.2% demonstrated symptoms consistent with subthreshold PTSD. The average baseline CAPS score was 53.1 (SD=16.5), reflecting a severe level of ongoing posttraumatic experiences. Of the 30 days prior to treatment, 18.6 (SD=10.2) of them included use of the primary substance of concern, as specified by the highest level of use.

Average pretreatment DES scores for the sample were 12.7 (SD=11.2). Within the MDI, total score average was at 52.5 (SD=22.8), while the individual factors were as follows: Disengagement 11.8 (SD=5.0), Depersonalization 7.4 (SD=4.0), Derealization 8.8 (SD=5.0), Emotional Constriction 9.6 (SD=4.0), Memory Disturbance 8.5 (SD=3.9), and Identity Dissociation 6.8 (SD=2.9). During the Rorschach, the sample provided roughly 22 responses on average (SD=13.0). Average mean scores, RFS-P, from Reality-Fantasy Scale were demonstrated at 2.3 (SD=0.6) while the scatter, RFS-S, fell at 0.8 (SD=1.1).

Table 1 *Baseline Participant and Diagnostic Characteristics by Treatment Group (N = 32)*

Variable	Total	CTPSD (*n* = 13) [a]	RPT (*n* = 11) [a]	No Treatment (*n* = 8) [a]
Age	45.7 (9.8)	42.6 (10.2)	48.9 (10.0)	46.3 (8.3)
Gender (% male)	75.0	69.2	81.8	75.0
Race/ethnicity (%)				
African American/Black	59.4	46.2	72.7	62.5
Caucasian	9.4	7.7	9.1	12.5
Latino	25.0	38.5	18.2	12.5
Other	6.2	7.7	0.0	12.5
Marital status (%)				
Married	21.9	38.5	0.0	25.0
Single	40.6	46.2	54.5	12.5
Divorced/separated	37.5	15.4	45.5	62.5
Years of education	13.0 (2.0)	12.8 (2.0)	13.1 (2.3)	13.0 (2.0)
Employment (%)				
Employed	71.9	84.6	54.5	75.0
Unemployed	12.5	15.4	9.1	12.5
Student/retired/disabled	15.6	0.0	36.4	12.5
Prior alcohol/drug treatment episodes	3.7 (6.4)	2.1 (3.5)	6.8 (9.6)	1.9 (2.0)
Current substance dependence diagnosis (%)				
Cocaine	56.2	53.8	63.6	50.0
Marijuana	21.9	23.1	18.2	25.0
Alcohol	75.0	76.9	72.7	75.0
Current alcohol dependence diagnosis only (%)	25.0	23.1	18.2	37.5
PTSD diagnosis (% Full)	68.8	69.2	63.6	75.0
CAPS severity, total [b]	53.1 (16.5)	56.2 (19.8)	51.2 (16.8)	50.4 (9.6)
Primary substance use days in last 30 [c]	18.6 (10.2)	16.6 (12.4)	18.6 (7.7)	21.8 (9.7)
DES	12.7 (11.2)	13.8 (14.5)	12.5 (10.9)	11.4 (3.7)
MDI				
Total Dissociation Score	52.5 (22.8)	57.7 (27.8)	47.7 (13.3)	51.8 (23.5)
Disengagement	11.8 (5.0)	12.7 (6.0)	10.8 (3.1)	11.6 (5.7)
Depersonalization	7.4 (4.0)	8.7 (5.3)	6.1 (1.8)	7.1 (3.3)
Derealization	8.8 (4.2)	9.8 (5.0)	8.2 (3.3)	8.0 (4.3)
Emotional Constriction	9.6 (4.0)	10.4 (6.4)	8.7 (3.3)	9.6 (4.9)
Memory Disturbance	8.5 (3.9)	8.9 (3.9)	7.9 (3.6)	8.6 (4.7)
Identity Dissociation	6.8 (2.9)	7.2 (3.9)	6.0 (1.6)	7.4 (2.6)
Total number of Rorschach responses	21.8 (13.0)	23.6 (17.5)	21.2 (10.6)	19.9 (7.4)
RFS-S	2.3 (0.6)	2.2 (0.7)	2.5 (0.5)	2.1 (0.8)
RFS-P	0.8 (1.1)	0.6 (1.2)	0.9 (1.0)	1.2 (1.2)
Therapy sessions attended [d]	6.2 (5.0)	7.4 (4.0)	9.2 (4.1)	0.0 (0.0)

Note. Values are either means (with standard deviations) or percentages. CTPSD = Concurrent Treatment of PTSD and Substance Dependence. RPT = Relapse Prevention Therapy. PTSD = Posttraumatic Stress Disorder; CAPS = Clinician Administered PTSD Scale. DES = Dissociative Experiences Scale. MDI = Multiscale Dissociation Inventory. RFS-S = Reality-Fantasy Scale Deviation. RFS-P = Reality-Fantasy Mean.

[a] There were no statistical differences between treatment groups on any pretreatment variable.

[b] Variable included in randomization stratification.

[c] Variable identified as primary substance of concern at baseline.

[d] Significant group differences existed on number of therapy sessions attended between the No Treatment Group with the other two groups, CTPSD and RPT.

There were no statistically significant differences between groups for the various demographic variables. Given that the No Treatment group differentiated individuals with no psychotherapy received, significant differences existed between groups regarding number of sessions attended, as evidenced via a one-way analysis of variance (ANOVA) ($F[2, 29] = 17.4$, $p < .001$). The effect size, as measured by eta squared, was very large, with 54.6% of the variability in sessions attended being explained by Treatment Type. As a result, number of treatment sessions were utilized as a covariate in Hypothesis 2 regression models for the ITT sample. Given that there were no significant differences between the CTPSD and RPT groups, number of treatment sessions was not included in regression models of the Treatment sample.

Descriptive Statistics

Table 2 depicts descriptive statistics for variables to be analyzed during correlation and regression analysis. CAPS, ASI (primary substance use days), DES, and RFS variables were all within acceptable limits for skewness and kurtosis.

However, measures of skewness and kurtosis for the MDI scales of Depersonalization and Identity Dissociation were above preferred values (+/- 2.0). The positive sign for skewness identified that the bulk of values were lower than the mean while the positive sign for kurtosis indicated that data within these scales were leptokurtic (too tall). Following MDI guidelines, the individual MDI scales were converted to t-scores relative to the normalization sample. In

addition, given concerns about MDI values not conforming with normal distribution assumptions, a log 10 transformation was performed on all normalized MDI values in order to allow for improved parametric statistical analysis. These transformed MDI variables better aligned with statistical standards for skewness and kurtosis and will be utilized for analysis of study hypotheses.

Table 2 *Descriptive Statistics (N = 32)*

Variable	Mean	SD	Minimum	Maximum	Skewness	Kurtosis
CAPS severity, Baseline	53.1	16.5	26	91	0.9	0.1
Primary Substance Use Days, Baseline	18.6	10.2	0	30	-0.5	-1.1
DES (%)	12.7	11.2	0.7	43.2	1.2	0.7
MDI		4.4				
Total Dissociation Score	52.8	22.4	25	119	1.4	1.6
Disengagement	11.8	5.0	5	24	0.9	0.4
Depersonalization	7.4	4.0	5	20	1.9	2.7
Derealization	8.8	4.2	5	20	1.2	0.6
Emotional Constriction	9.6	5.0	5	24	1.2	1.1
Memory Disturbance	8.5	3.9	5	19	1.2	0.9
Identity Dissociation	6.8	2.9	5	17	2.0	4.1
RFS-S	2.3	0.6	1.0	3.2	-0.6	-0.6
RFS-P	0.8	1.1	-1.2	3.0	-0.1	-0.9
CAPS severity, Follow-up	48.5	25.1	0	106	0.2	-0.5
Primary Substance Use Days, Follow-up	10.2	10.3	0	30	0.4	-1.2
Therapy sessions attended	6.2	5.0	0	12	0.3	-1.7

Note. CAPS = Clinician Administered PTSD Scale. DES = Dissociative Experiences Scale. MDI = Multiscale Dissociation Inventory. RFS-S = Reality-Fantasy Scale Deviation. RFS-P = Reality-Fantasy Mean.

In Table 3, correlation analyses examined potential relationships between the various dissociation scales and the response-to-treatment variables. Pearson coefficients showed there was a significant positive association between the MDI – Identity Dissociation subscale and the posttreatment number of primary substance use days (r (32) = .35, $p \leq .05$), explaining 12 percent of the DV's variability. As a result, the role of the MDI – Identity Dissociation subscale were monitored during the H2 regression analysis of substance use response-to-treatment.

Additionally, there was medium effect size relationship between the RFS-S score and the number of therapy sessions attended that explained approximately 13 percent of the variability (r (32) = .37, $p \leq .05$).

Table 3 *Correlation Analysis Between Independent and Dependent Variables (N = 32)*

	r (p)		
	CAPS Severity, Follow-Up	Primary Substance Use Days, Follow-up	Therapy sessions attended
RFS-S	.267	-.284	.370*
RFS-P [a]	.204	.194	-.158
DES	.097	.115	.270
MDI – Disengagement [b]	-.040	.167	.128
MDI – Depersonalization [b]	.086	.253	.160
MDI – Derealization [b]	.032	.185	.242
MDI – Emotional Constriction [b]	.087	.018	.031
MDI – Memory Disturbance [b]	-.076	.294	.178
MDI – Identity Dissociation [b]	.104	.352*	.054

Note. RFS-S = Reality-Fantasy Scale Deviation. DES = Dissociative Experiences Scale. MDI = Multiscale Dissociation Inventory.

*$p < .05$

[a] RFS-P was converted to absolute value according to model conceptualization.
[b] MDI scales were converted to t-scores according to the normalization sample and then converted via log 10 transformation.

Hypothesis 1 Analysis

The first hypothesis predicted that there would be small to moderate effect size relationships between the various measures of dissociation: DES global score, MDI global score, MDI scales, and the RFS-S. In addition, correlations were expected to be weakest between the RFS-S and the self-report measures.

Pearson correlation analyses showed there were not significant associations between the RFS-S measure of dissociation and the DES (r (32) = .31, N.S.) and with the total MDI dissociation score (r (32) = .32, N.S.). For certain MDI scales of Depersonalization (r (32) = .40, $p \leq .05$), Derealization (r (32) = .42, $p \leq .05$), and Identity Dissociation (r (32) = .38, $p \leq .05$) there was a statistically significant relationship with the RFS-S. These scales individually explained 16, 17, and 15 percent of the variability in the Rorschach measure of dissociation respectively.

Self-report measures of the DES and the total MDI dissociation score demonstrated a considerable positive association, (r (32) = .69, $p \leq .001$), with 47% of the variability explained within their relationship. While slightly lower, there were similarly significant relationships between the individual MDI scales and the DES (see Table 4). Very large effect sizes were also noted for the associations within the different MDI subscales. Furthermore, Pearson correlations ranging from .80 to .93 were evidenced between the respective MDI subscales and the global MDI, which were near thresholds for potential multiple colinearity. As a result, the earlier stated rationale of focusing on MDI subscales alone during regression analysis in order to reduce this potential issue appeared justified by the data from this sample.

Table 4 *Correlation Analysis Between RFS-S, DES, and MDI Scores (N = 32)*

	r (p)								
Variable	1	2	3	4	5	6	7	8	9
1. RFS-S	1.00								
2. DES	.308	1.00							
3. MDI – Total Dissociation [a]	.320	.686***	1.00						
4. MDI – Disengagement [a]	.286	.614***	.932***	1.00					
5. MDI – Depersonalization [a]	.402*	.621***	.838***	.732**	1.00				
6. MDI – Derealization [a]	.417*	.611***	.910***	.859***	.790***	1.00			
7. MDI – Emotional Constriction [a]	.141	.584***	.799***	.655***	.606***	.609***	1.00		
8. MDI – Memory Disturbance [a]	.290	.637***	.897***	.820***	.721***	.805***	.661***	1.00	
9. MDI – Identity Dissociation [a]	.383*	.664***	.843***	.736***	.773***	.748***	.619***	.772***	1.00

Note. RFS-S = Reality-Fantasy Scale Deviation. DES = Dissociative Experiences Scale. MDI = Multiscale Dissociation Inventory.

*$p < .05$; **$p < .01$; ***$p < .001$

[a] MDI scales were converted to t-scores according to the normalization sample and then converted via log 10 transformation.

To further evaluate the potential overlap between the self-report measures of dissociation and the Rorschach measure, multiple regression was used to test a model predicting the RFS-S. The DES total score and the various MDI subscales explained 25.8% of the variability ($R = .51$, F [7, 24] = 1.19, N.S.). The model was not significant and no significant associations were revealed.

Table 5 *Multiple Regression Analysis of Self-Report Dissociation Variables Predicting Rorschach Dissociation (N = 32)*

		Coefficients					
Step	Variable	*B*	*SEB*	β	*t*	*P*	*semipartial r* r_{sp}
1 [a]	DES	0.01	0.01	0.11	0.45	0.65	0.08
	MDI – Disengagement [b]	-1.40	2.13	-0.26	-0.66	0.52	-0.12
	MDI – Depersonalization [b]	0.70	1.22	0.19	0.57	0.57	0.10
	MDI – Derealization [b]	2.28	1.85	0.49	1.23	0.23	0.22
	MDI – Emotional Constriction [b]	-1.12	1.26	-0.22	-0.88	0.38	-0.16
	MDI – Memory Disturbance [b]	-0.54	1.58	-0.12	-0.34	0.74	-0.06
	MDI – Identity Dissociation [b]	0.80	1.21	0.21	0.65	0.52	0.12

Note. DES = Dissociative Experiences Scale. MDI = Multiscale Dissociation Inventory.

[a] $R^2 = .26$, $F(7, 24) = 1.19$, $p = .34$

[b] MDI scales were converted to t-scores according to the normalization sample and then converted via log 10 transformation.

Hypothesis 2 Analysis

The second hypothesis predicted that pretreatment dissociation would negatively predict response to treatment, with the RFS-S possessing the greatest contributions. Analysis proceeded with separate inquiries into the different measures of treatment response: change in PTSD symptoms, change in the frequency of primary substance use days, and the number of therapy sessions attended.

PTSD Response

The first wave of analyses examined the relationship between pretreatment dissociation and how PTSD symptoms, as measured by the CAPS, changed as a result of participation in the

research. Table 4 documents results of the hierarchical multiple regression on the Intent-to-Treat Sample (N = 32). In the first step of the regression, the two covariates (pretreatment CAPS severity and number of therapy sessions attended) were entered to control for their effect on the dependent variable. These items explained 28.9% of the variability (R = .54, F [2, 29] = 5.90, $p \leq .01$). In the second step, the RFS-S was entered and explained an additional 4.8% of the variability (R^2 change = .05, F [1, 28] = 2.02, N.S.). In the third step, the DES, MDI subscales, and RFS-P were added, explaining an additional 13.2% of the variability (R^2 change = .13, F [8, 20] = 0.62, N.S.). There were no individual variables that were unique predictors of the DV outside of the baseline CAPS severity covariate.

Table 6 *Hierarchical Regression Analysis of Dissociation Variables Predicting Follow-Up CAPS Severity – ITT Sample (N = 32)*

		Coefficients					
Step	Variable	*B*	*SEB*	β	*T*	*P*	*semipartial r* r_{sp}
1 [a]	CAPS Severity, Baseline	0.82	0.24	0.54	3.38	0.00	0.53
	Therapy Sessions Attended	0.04	0.80	0.01	0.05	0.96	0.01
2 [b]	RFS-S	-9.51	12.29	-0.24	-1.42	0.17	-0.22
3 [c]	DES	-0.32	0.56	-0.14	-0.57	0.58	-0.09
	RFS-P [d]	-14.00	9.61	0.45	1.46	0.16	0.24
	MDI – Disengagement [e]	21.60	78.70	0.10	0.27	0.79	0.05
	MDI – Depersonalization [e]	0.82	46.38	0.01	0.02	0.99	0.00
	MDI – Derealization [e]	22.81	75.08	0.13	0.30	0.76	0.05
	MDI – Emotional Constriction [e]	-37.42	47.40	-0.19	-0.79	0.44	-0.13
	MDI – Memory Disturbance [e]	53.53	60.07	0.31	0.89	0.38	0.15
	MDI – Identity Dissociation [e]	-12.47	48.73	-0.09	-0.26	0.80	-0.04

Note. RFS-S = Reality-Fantasy Scale Deviation. RFS-P = Reality-Fantasy Scale Mean. DES = Dissociative Experiences Scale. MDI = Multiscale Dissociation Inventory.

[a] $R^2 = .29$, $F(2, 29) = 5.90$, $p \leq .01$
[b] $R^2_{change} = .05$, $F_{change}(1, 28) = 2.02$, $p = .17$
[c] $R^2_{change} = .13$, $F_{change}(8, 20) = 0.62$, $p = .75$
[d] RFS-P was converted to absolute value according to model conceptualization.
[e] MDI scales were converted to t-scores according to the normalization sample and then converted via log 10 transformation.

Substance Use Response

Hierarchical regression was utilized to examine a model predicting the DV of posttreatment substance use change, as measured by the number of use days for the participant's primary substance of abuse. Two covariates were entered within the first step of the regression

(baseline primary substance use days and number of therapy sessions attended), explaining 38.6% of the DV's variability (R = .62, F [2, 29] = 9.12, $p \leq .001$). In the second step, the RFS-S was added and accounted for a further 1.2% (R^2 change = .01, F [1, 28] = 0.56, N.S.). Next, the DES, RFS-P and MDI subscale variables were included. Together, these items explained 25.2% of the remaining variability (R^2 change = .25, F [8, 20] = 1.86, N.S.). In addition to both covariates, the MDI – Emotional Constriction subscale was a unique predictor of the DV (see Table 7). The negative coefficient indicated that increases in dissociation as reported on this subscale of the MDI were associated with decreased levels of the DV at posttreatment.

Table 7 *Hierarchical Regression Analysis of Dissociation Variables Predicting Follow-Up Primary Substance Use Days – ITT Sample (N = 32)*

		Coefficients					
Step	Variable	*B*	*SEB*	β	*t*	*p*	*semipartial r* r_{sp}
1 [a]	Primary Substance Use Days, Baseline	0.54	0.15	0.53	3.64	0.00	-0.30
	Therapy Sessions Attended	-0.63	0.30	-0.31	-2.00	0.05	0.53
2 [b]	RFS-S	-1.93	2.56	-0.12	-0.75	0.46	-0.11
3 [c]	DES	0.03	0.18	0.27	0.14	0.89	0.02
	RFS-P [d]	-2.23	3.53	-0.17	-0.63	0.54	-0.08
	MDI – Disengagement [e]	-28.50	26.62	-0.32	-1.07	0.30	-0.14
	MDI – Depersonalization [e]	-5.72	17.70	-0.10	-0.32	0.75	0.04
	MDI – Derealization [e]	15.16	23.95	0.20	0.63	0.53	0.08
	MDI – Emotional Constriction [e]	-35.25	15.67	-0.44	-2.25	0.04	-0.30
	MDI – Memory Disturbance [e]	37.51	19.85	0.53	1.89	0.07	0.25
	MDI – Identity Dissociation [e]	19.31	16.01	0.33	1.21	0.24	0.16

Note. RFS-S = Reality-Fantasy Scale Deviation. RFS-P = Reality-Fantasy Scale Mean. DES = Dissociative Experiences Scale. MDI = Multiscale Dissociation Inventory.

[a] $R^2 = .39$, $F(2, 29) = 9.12$, $p \leq .001$
[b] $R^2_{change} = .01$, $F_{change}(1, 28) = 0.57$, $p = .46$
[c] $R^2_{change} = .25$, $F_{change}(8, 20) = 1.81$, $p = .14$
[d] RFS-P was converted to absolute value according to model conceptualization.
[e] MDI scales were converted to t-scores according to the normalization sample and then converted via log 10 transformation.

Given the significant model within the full ITT sample (N = 32), further regression analysis was explored for the Therapy sample (n = 24), which included only individuals who actively participated in treatment. Number of therapy sessions was no longer a covariate and therefore only baseline level of recent substance use was included in the first step of the model.

This variable explained 18.2% of the variability in primary substance use days at follow-up (R = .43, F [1, 22] = 4.89, $p \leq .05$). In the second step, the RFS-S was added and accounted for an additional 0.4% (R^2 change = .00, F [1, 21] = 0.09, N.S.). Finally, the remaining self-report measures of dissociation and the RFS-P were included into the model, accounting for 32.8% of the variability (R^2 change = .33, F [8, 13] = 1.10, N.S.). However, no independent variables were unique predictors of the DV.

Table 8 *Hierarchical Regression Analysis of Dissociation Variables Predicting Follow-Up Primary Substance Use Days – Treatment Sample (n = 24)*

		Coefficients					
Step	Variable	*B*	*SEB*	β	*t*	*p*	*semipartial r* r_{sp}
1 [a]	Primary Substance Use Days, Baseline	0.35	0.16	0.43	2.21	0.04	0.43
2 [b]	RFS-S	-0.87	2.84	-0.06	-0.31	0.76	-0.06
3 [c]	DES	-0.20	0.35	-0.29	-0.56	0.58	0.11
	RFS-P [d]	-0.54	4.22	-0.05	-0.13	0.90	-0.03
	MDI – Disengagement [e]	-10.96	41.41	-0.14	-0.27	0.80	-0.05
	MDI – Depersonalization [e]	-4.17	22.27	-0.09	0.19	0.85	0.04
	MDI – Derealization [e]	9.13	26.67	0.15	0.34	0.74	0.07
	MDI – Emotional Constriction [e]	-24.13	21.36	-0.37	-1.13	0.28	-0.22
	MDI – Memory Disturbance [e]	18.18	26.72	0.31	0.68	0.51	0.13
	MDI – Identity Dissociation [e]	34.76	27.74	0.71	1.25	0.23	0.24

Note. RFS-S = Reality-Fantasy Scale Deviation. RFS-P = Reality-Fantasy Scale Mean. DES = Dissociative Experiences Scale. MDI = Multiscale Dissociation Inventory.

[a] $R^2 = .18$, $F(1, 22) = 4.89$, $p \leq .05$
[b] $R^2_{change} = .00$, $F_{change}(1, 21) = 0.09$, $p = .76$
[c] $R^2_{change} = .33$, $F_{change}(8, 13) = 1.10$, $p = .42$
[d] RFS-P was converted to absolute value according to model conceptualization.
[e] MDI scales were converted to t-scores according to the normalization sample and then converted via log 10 transformation.

Following the significant association demonstrated between the MDI – Identity Dissociation subscale and posttreatment levels of primary substance use, a hierarchical regression was performed for just the RFS-S and this MDI subscale. Within the first step, the two covariates (baseline primary substance use days and number of therapy sessions attended) explained 38.6% of the DV's variability (R = .62, F [2, 29] = 9.12, $p \leq .001$). In the second step, the RFS-S was added and accounted for a further 1.2% (R^2 change = .01, F [1, 28] = 0.56, N.S.). Next, the MDI – Identity Dissociation subscale was included and reflected 8.4% of the remaining variability (R^2 change = .08, F [1, 27] = 4.36, $p \leq .05$). In addition to both covariates, this MDI subscale was a unique predictor of the DV (see Table 9). The positive coefficient indicated that increases in this form of dissociation were associated with increased levels of the DV at posttreatment.

Table 9 *Hierarchical Regression Analysis of RFS-S and MDI – Identity Dissociation Variables Predicting Follow-Up Primary Substance Use Days – ITT Sample (N = 32)*

		Coefficients					
Step	Variable	*B*	*SEB*	β	*t*	*p*	*semipartial r* r_{sp}
1 [a]	Primary Substance Use Days, Baseline	0.54	0.15	0.53	3.64	0.00	0.53
	Therapy Sessions Attended	-0.63	0.30	-0.31	-2.00	0.05	-0.30
2 [b]	RFS-S	-1.93	2.56	-0.12	-0.75	0.46	-0.11
3 [c]	MDI – Identity Dissociation [d]	19.68	9.43	0.33	2.09	0.05	0.29

Note. RFS-S = Reality-Fantasy Scale Deviation. DES = Dissociative Experiences Scale. MDI = Multiscale Dissociation Inventory.

[a] R^2 = .39, F(2, 29) = 9.12, $p \leq .001$
[b] R^2_{change} = .01, F_{change} (1, 28) = 0.57, p = .46
[c] R^2_{change} = .08, F_{change} (1, 27) = 4.34, $p \leq .05$
[d] RFS-P was converted to absolute value according to model conceptualization.
[e] MDI scales were converted to t-scores according to the normalization sample and then converted via log 10 transformation.

When viewing this regression model through the Therapy sample (n =24), a significant association was also present. Baseline levels of recent substance use was included in the first step of the model as a covariate, accounting for 18.2% of the variability in primary substance use days at follow-up (R = .43, F [1, 22] = 4.89, $p \leq .05$). In the second step, the RFS-S was added and reflected an additional 0.4% (R^2 change = .00, F [1, 21] = 0.09, N.S.). The MDI – Identity Dissociation subscale was then inputted, explaining a remaining 17.9% of the variability (R^2 change = .18, F [1, 20] = 5.64, $p \leq .05$). As in the ITT model, higher reports of dissociation on this portion of the MDI were linked with increased levels of primary substance use at follow-up.

Table 10 *Hierarchical Regression Analysis of RFS-S and MDI-Identity Dissociation Variables Predicting Follow-Up Primary Substance Use Days – Treatment Sample (n =24)*

		Coefficients					
Step	Variable	*B*	*SEB*	β	*t*	*p*	*semipartial r* r_{sp}
1 [a]	Primary Substance Use Days, Baseline	0.35	0.16	0.43	2.21	0.04	0.43
2 [b]	RFS-S	-0.87	2.84	-0.06	-0.31	0.76	-0.06
3 [c]	MDI – Identity Dissociation [d]	25.46	10.72	0.52	2.38	0.03	0.42

Note. RFS-S = Reality-Fantasy Scale Deviation. MDI = Multiscale Dissociation Inventory.

[a] R^2 = .18, F(1, 22) = 4.89, $p \leq .05$
[b] R^2_{change} = .00, F_{change} (1, 21) = 0.09, p = .76
[c] R^2_{change} = .18, F_{change} (1, 20) = 5.64, $p \leq .05$
[d] RFS-P was converted to absolute value according to model conceptualization.
[e] MDI scales were converted to t-scores according to the normalization sample and then converted via log 10 transformation.

Therapy Participation Response

Hierarchical regression was next implemented to investigate the model predicting the number of therapy sessions attended. RFS-S was entered into the first step of the regression, explaining 13.7% of the variability (R = .37, F [1, 30] = 4.77, $p \leq .05$). In the second step, the

DES, MDI subscales, and RFS-P were added, explaining an additional 20.7% of the variability (R^2 change = .21, F [8, 22] = 0.87, N.S.). The RFS-S was identified as a unique predictor of the DV. Significant positive coefficients (see Table 11) revealed that increases in dissociation as measured by the Rorschach were associated with higher number of therapy sessions attended.

Table 11 *Hierarchical Regression Analysis of Dissociation Variables Predicting Therapy Sessions Attended – ITT Sample (N = 32)*

		Coefficients					
Step	Variable	*B*	*SEB*	β	*t*	*p*	*semipartial r* r_{sp}
1 [a]	RFS-S	2.89	1.33	0.37	2.18	0.04	0.37
2 [b]	DES	0.13	0.11	0.29	1.17	0.26	0.20
	RFS-P [c]	2.22	1.97	0.36	1.12	0.27	0.20
	MDI – Disengagement [d]	-6.34	16.49	-0.15	-0.38	0.70	-0.07
	MDI – Depersonalization [d]	2.71	9.66	0.09	0.28	0.78	0.05
	MDI – Derealization [d]	14.84	14.79	0.41	1.00	0.32	0.17
	MDI – Emotional Constriction [d]	-5.74	9.85	-0.15	-0.58	0.57	-0.10
	MDI – Memory Disturbance [d]	5.81	12.52	0.17	0.46	0.65	0.08
	MDI – Identity Dissociation [d]	-15.97	9.45	-0.56	-1.69	0.11	-0.29

Note. RFS-S = Reality-Fantasy Scale Deviation. RFS-P = Reality-Fantasy Scale Mean. DES = Dissociative Experiences Scale. MDI = Multiscale Dissociation Inventory.

[a] $R^2 = .14$, $F(1, 30) = 4.77$, $p \leq .05$
[b] $R^2_{change} = .21$, $F_{change}(8, 22) = 0.87$, $p = .56$
[c] RFS-P was converted to absolute value according to model conceptualization.
[d] MDI scales were converted to t-scores according to the normalization sample and then converted via log 10 transformation.

Given the significance of the ITT regression model (N = 32), the same model was evaluated in the Therapy sample (n = 24). Following the same steps, the RFS-S was entered

first, describing 17.7% of the DV's variability (R = .42, F [1, 22] = 4.72, $p \leq .05$). Next, the DES, RFS-P and MDI subscale variables were included. Together, these items explained 16.6% of the remaining variability (R^2 change = .17, F [8, 14] = 0.44, N.S.). The RFS-S again was a unique predictor of number of therapy sessions attended (see Table 12). The positive coefficient indicated that elevations in Rorschach measured dissociation were associated with increased participation in treatment.

Table 12 *Hierarchical Regression Analysis of Dissociation Variables Predicting Therapy Sessions Attended – Treatment Sample (n = 24)*

		Coefficients					
Step	Variable	*B*	*SEB*	β	*t*	*p*	*semipartial r* r_{sp}
1 [a]	RFS-S	2.88	1.32	0.42	2.17	0.04	0.42
2 [b]	DES	0.25	0.18	0.78	1.38	0.19	0.30
	RFS-P [c]	0.08	2.12	0.01	0.04	0.97	0.01
	MDI – Disengagement [d]	-22.22	21.22	-0.61	-1.05	0.31	-0.23
	MDI – Depersonalization [d]	5.19	9.67	0.23	0.54	0.60	0.12
	MDI – Derealization [d]	10.20	14.17	0.36	0.72	0.48	0.16
	MDI – Emotional Constriction [d]	-9.00	11.29	-0.29	-0.80	0.44	-0.17
	MDI – Memory Disturbance [d]	6.74	13.83	0.24	0.49	0.63	0.11
	MDI – Identity Dissociation [d]	-14.24	14.75	-0.61	-0.97	0.35	-0.21

Note. RFS-S = Reality-Fantasy Scale Deviation. RFS-P = Reality-Fantasy Scale Mean. DES = Dissociative Experiences Scale. MDI = Multiscale Dissociation Inventory.

[a] R^2 = .18, F(1, 22) = 4.72, $p \leq .05$
[b] R^2_{change} = .17, F_{change} (8, 14) = 0.44, p = .88
[c] RFS-P was converted to absolute value according to model conceptualization.
[d] MDI scales were converted to t-scores according to the normalization sample and then converted via log 10 transformation.

Hypothesis 3 Analysis

The third hypothesis posited that high levels of pretreatment dissociation on the RFS-S would respond better to psychotherapy that pursued re-processing of traumatic memories. As such, Concurrent Treatment of PTSD and Substance Dependence (CTPSD) was expected to produce better results for individuals with high dissociation relative to lower pretreatment levels. This hypothesis was evaluated across the three domains of operationalized response-to-treatment within the Therapy sample.

PTSD Response

Hierarchical multiple regression was utilized to examine possible interactions between the RFS-S and type of therapy received (CTPSD or RPT) in predicting changes in clinician-rated posttraumatic stress symptoms. The covariate of baseline CAPS severity was entered in the first, explaining 29.9% of the DV's variability ($R = .55$, F [1, 22] = 9.37, $p \leq .01$). In the second step, the RFS-S and a dummy-coded variable for therapy type was added, accounting for a further 0.6% (R^2 change = .01, F [2, 20] = 0.08, N.S.). Next, the interaction effect variable was included and did not describe any of the remaining variability (R^2 change = .00, F [1, 19] = 0.01, N.S.). Consequently, no interaction effect was demonstrated.

Table 13 *Hierarchical Regression Analysis of Interaction between RFS-S and Type of Therapy in Predicting Follow-Up CAPS Severity – Treatment Sample (n = 24)*

		Coefficients					
Step	Variable	*B*	*SEB*	β	*t*	*p*	*semipartial r* r_{sp}
1 [a]	CAPS Severity, Baseline	0.75	0.24	0.55	3.06	0.01	0.55
2 [b]	RFS-S	-1.97	8.56	-0.05	-0.23	0.82	-0.04
	CTPSD Therapy [d]	2.43	9.51	0.05	0.26	0.80	0.05
3 [c]	Interaction: RFS-S * CTPSD Therapy	1.53	18.21	0.03	0.08	0.93	0.02

Note. RFS-S = Reality-Fantasy Scale Deviation. CTPSD = Concurrent Treatment of PTSD and Substance Dependence.

[a] $R^2 = .30$, $F(1, 22) = 9.37$, $p \leq .01$
[b] $R^2_{change} = .01$, $F_{change}(2, 20) = 0.08$, $p = .92$
[c] $R^2_{change} = .00$, $F_{change}(1, 19) = 0.01$, $p = .93$
[d] Dummy-coded variable of whether the patient was assigned to CTPSD or not.

Substance Use Response

Next, a hierarchical multiple regression model was employed to examine possible interaction effects between the RFS-S and type of treatment received in predicting substance use response-to-treatment. Baseline primary substance use days were initially entered as a covariate and explained 18.2% of the DV's variability ($R = .43$, F [1, 22] = 4.89, $p \leq .05$). In the second step, the RFS-S and the therapy type variable were added, representing an additional 13.6% (R^2 change = .14, F [2, 20] = 1.99, N.S.). Lastly, the interaction effect accounted for 3.0% of the remaining variability (R^2 change = .03, F [1, 19] = 0.88, N.S.). Outside of the expected contributions of the covariate, no single variable nor the interaction effect were significant predictors of the DV, according to $p \leq .05$.

Table 14 *Hierarchical Regression Analysis of Interaction between RFS-S and Type of Therapy in Predicting Follow-Up Primary Substance Use Days – Treatment Sample (n = 24)*

		Coefficients					
Step	Variable	*B*	*SEB*	β	*t*	*p*	*semipartial r* r_{sp}
1 [a]	Primary Substance Use Days, Baseline	0.35	0.16	0.43	2.21	0.04	0.43
2 [b]	RFS-S	0.20	2.72	0.01	0.07	0.94	0.01
	CTPSD Therapy [d]	6.20	3.15	0.37	1.97	0.06	0.36
3 [c]	Interaction: RFS-S * CTPSD Therapy	5.64	6.00	0.32	0.94	0.36	0.17

Note. RFS-S = Reality-Fantasy Scale Deviation. CTPSD = Concurrent Treatment of PTSD and Substance Dependence.

[a] $R^2 = .18$, $F(1, 22) = 4.89$, $p \leq .05$
[b] $R^2_{change} = .14$, $F_{change}\ (2, 20) = 1.99$, $p = .16$
[c] $R^2_{change} = .03$, $F_{change}\ (1, 19) = 0.88$, $p = .36$
[d] Dummy-coded variable of whether the patient was assigned to CTPSD or not.

Given the significant contributions from the MDI – Identity Dissociation and MDI-Emotional Constriction subscales in the evaluation of H2, these variables were further examined for possible interaction effects with type of treatment received. For the hierarchical multiple regression model involving MDI – Identity Dissociation (see Table 15), the baseline covariate was entered initially, accounting for 18.2% of the DV's variability ($R = .43$, F [1, 22] = 4.89, $p \leq .05$). The MDI – Identity Dissociation and the therapy type variables were next added, explaining an additional 20.5% (R^2 change = .21, F [2, 20] = 1.99, N.S.). In the third and final step, the interaction effect reflected 0.0% of the outstanding variability (R^2 change = .00, F [1, 19] = 0.01, N.S.). Controlling for the covariate, no other variable demonstrated a significant association with the DV.

Table 15 *Hierarchical Regression Analysis of Interaction between MDI – Identity Dissociation and Type of Therapy in Predicting Follow-Up Primary Substance Use Days – Treatment Sample (n = 24)*

		Coefficients					
Step	Variable	*B*	*SEB*	β	*t*	*p*	*semipartial r* r_{sp}
1 [a]	Primary Substance Use Days, Baseline	0.35	0.16	0.43	2.21	0.04	0.43
2 [b]	MDI – Identity Dissociation [d]	13.89	9.27	0.28	1.50	0.15	0.26
	CTPSD Therapy [e]	5.21	2.99	0.31	1.74	0.10	0.31
3 [c]	Interaction: MDI – Identity Dissociation * CTPSD Therapy	1.55	32.16	0.03	0.07	0.94	0.01

Note. MDI = Multiscale Dissociation Inventory. CTPSD = Concurrent Treatment of PTSD and Substance Dependence.

[a] $R^2 = .18$, $F(1, 22) = 4.89$, $p \leq .05$
[b] $R^2_{change} = .21$, $F_{change}\ (2, 20) = 3.33$, $p = .06$
[c] $R^2_{change} = .00$, $F_{change}\ (1, 19) = 0.01$, $p = .94$
[d] MDI scales were converted to t-scores according to the normalization sample and then converted via log 10 transformation.
[e] Dummy-coded variable of whether the patient was assigned to CTPSD or not.

The next model examined evaluated the potential interaction between the MDI – Emotional Constriction subscale and the therapy assignment. Like other models in evaluating this type of response-to-treatment, baseline primary substance use days was entered as a covariate ($R = .43$, $F\ [1, 22] = 4.88$, $p \leq .05$). In the second step, the MDI – Emotional Constriction and type of therapy variables were added. Together, these items explained 14.1% of the remaining variability (R^2 change = .14, $F\ [2, 20] = 2.09$, N.S.). Finally, an interaction effect variable was entered and explained a further 15.4% of the DV's variability (R^2 change = .15, $F\ [1, 19] = 5.57$, $p \leq .05$). As such, the interaction effect was a unique predictor of the DV (see Table 16). No significant associations existed for the single variables.

Table 16 *Hierarchical Regression Analysis of Interaction between MDI – Emotional Constriction and Type of Therapy in Predicting Follow-Up Primary Substance Use Days – Treatment Sample (n = 24)*

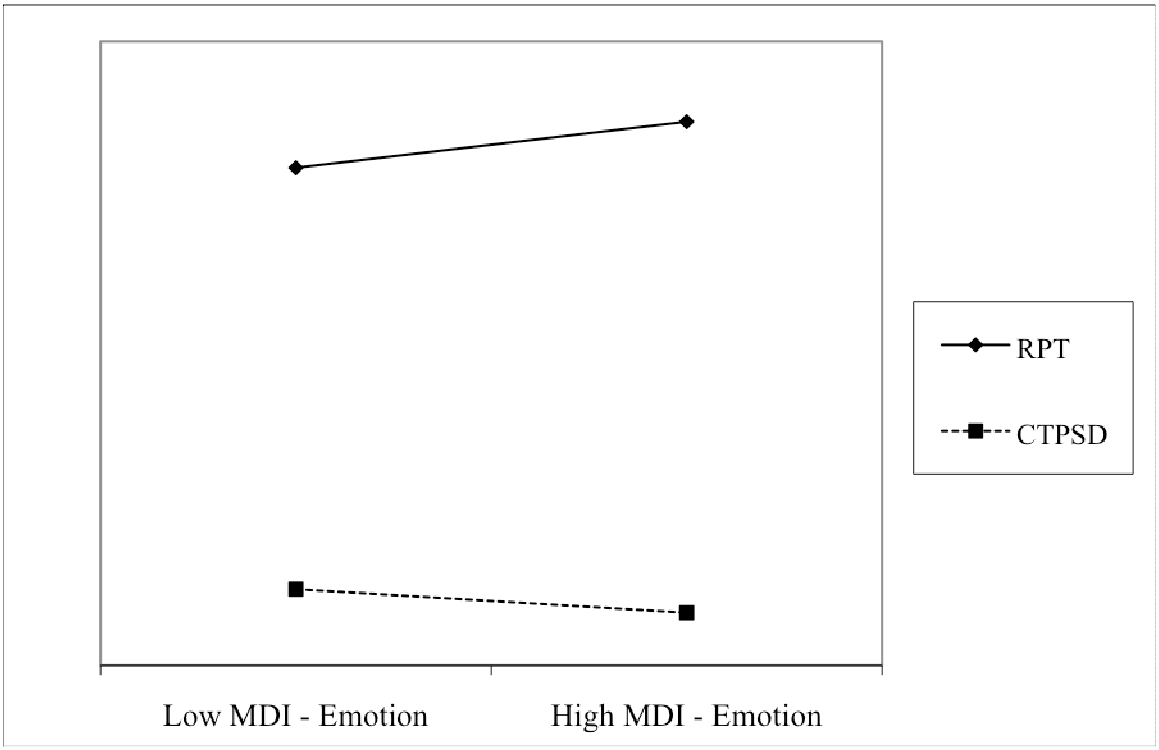
		Coefficients					
Step	Variable	*B*	*SEB*	β	*t*	*p*	*semipartial r* r_{sp}
1 [a]	Primary Substance Use Days, Baseline	0.35	0.16	0.43	2.21	0.04	0.43
2 [b]	MDI – Emotional Constriction [d]	-5.05	12.33	-0.08	-0.41	0.69	-0.08
	CTPSD Therapy [e]	6.33	3.10	0.38	2.04	0.06	0.38
3 [c]	Interaction: MDI – Emotional Constriction * CTPSD Therapy	-60.24	25.52	-0.80	-2.36	0.03	-0.39

Note. MDI = Multiscale Dissociation Inventory. CTPSD = Concurrent Treatment of PTSD and Substance Dependence.

[a] $R^2 = .18$, $F(1, 22) = 4.89$, $p \leq .05$
[b] $R^2_{change} = .14$, $F_{change}(2, 20) = 2.09$, $p = .15$
[c] $R^2_{change} = .15$, $F_{change}(1, 19) = 5.57$, $p \leq .05$
[d] MDI scales were converted to t-scores according to the normalization sample and then converted via log 10 transformation.
[e] Dummy-coded variable of whether the patient was assigned to CTPSD or not.

Figure 2 illustrates the nature of the interaction. Controlling for similar levels of baseline primary substance use, individuals in RPT demonstrated greater decreases in posttreatment use when they had lower pretreatment dissociation on the MDI – Emotional Constriction scale while individuals receiving CTPSD demonstrated relative improvements in primary substance use frequency at follow-up when they had higher levels on this type of dissociation.

Figure 1 *Predicted Interaction Effect Between Levels of MDI – Emotional Constriction Dissociation and Treatment Group* [a] *(n = 24)*



Note. RPT = Relapse Prevention Therapy. CTPSD = Concurrent Treatment of PTSD and Substance Dependence. MDI = Multiscale Dissociation Inventory.

[a] Graphed at relative same levels of expected baseline primary substance use.

Therapy Participation Response

Similar hierarchical multiple regression was implemented to investigate an interaction model predicting the number of therapy sessions attended. RFS-S and therapy type were entered into the first step of the regression, explaining 19.8% of the variability (R = .45, F [2,21] = 2.59, $p \leq .10$). In the second step, the interaction variable was inputted, accounting for an additional 0.7% of the variability (R^2 change = .01, F [1, 20] = 0.18, N.S.). No significant associations were observed for the single or interaction variables at the level of $p \leq .05$.

Table 17 *Hierarchical Regression Analysis of Interaction between RFS-S and Type of Therapy in Predicting Therapy Sessions Attended – Treatment Sample (n = 24)*

		Coefficients					
Step	Variable	*B*	*SEB*	β	*t*	*p*	*semipartial r* r_{sp}
1 [a]	RFS-S	2.67	1.37	0.39	1.96	0.06	0.38
	CTPSD Therapy [c]	-1.17	1.58	-0.15	-0.74	0.45	-0.15
2 [b]	Interaction: RFS-S * CTPSD Therapy	1.31	3.07	0.15	0.43	0.68	0.09

Note. RFS-S = Reality-Fantasy Scale Deviation. CTPSD = Concurrent Treatment of PTSD and Substance Dependence.

[a] $R^2 = .20$, $F(2, 23) = 2.59$, $p \leq .10$
[b] $R^2_{change} = .01$, $F_{change}(1, 22) = 0.18$, $p = .68$
[c] Dummy-coded variable of whether the patient was assigned to CTPSD or not.

CHAPTER 5: DISCUSSION

Within a set of individuals with comorbid PTSD and SUD, dissociation was expected to be present (Shafer et al., 2010; Somer & Avni, 2003; van der Kolk et al., 1996; Evren, Sar, Evren, & Daldubak, 2008). However, the form and intensity of dissociation was not clear. The present study attempted to compare separate conceptualizations of dissociation as a unidimensional trait (DES; Bernstein & Putnam, 1986), a set of distinct multidimensional experiences (MDI; Briere, 2002), and an impairment in the use of potential space (RFS; Tibon et al., 2005). Through utilizing both self-report measures as well as a projective instrument, convergence and divergence was evaluated between conscious awareness of symptoms versus a process-based definition of dissociation. Furthermore, given the serious health crisis of these conditions and the many impediments to treatment efficacy (McGovern, Alterman, Drake, & Dauten, 2009; Ebner-Priemer et al., 2009; Lynch et al., 2008), diverse lenses enabled examination of how a more refined understanding of dissociation might support improved conceptualization and management of psychotherapeutic interventions for this population.

Summary of Main Findings

Distinct Measures of Dissociation

Differentiation between the Reality-Fantasy Scale (RFS) and the self-report measures of dissociation was hypothesized given the different paradigms of measurement in addition to the theory and research that there are multiple dimensions of dissociation (Bernstein & Putnam, 1986; Briere, Weathers & Runtz, 2005; Holmes et al., 2005; Howell, 2005). The present study's findings supported the primary hypothesis that the RFS-S would have limited overlap with the self-report measures of dissociation. Nonsignificant associations were found between the RFS-S and the global DES and MDI scales, intimating that the Rorschach measure did not align with a

macro construction of dissociation (Table 4). The modest positive correlations between the RFS-S and certain MDI subscales was still in a range that suggested different implicit and explicit processes were being measured (Bornstein, 2002). And while correlations were large with some of the MDI subscales, no self-report measure of dissociation demonstrated a predictive relationship with the RFS-S within linear regression analysis (Table 5).

The separateness of the Rorschach measure compared to the self-reports provided evidence in support of utilizing multi-method measurement and investigation of dissociation. The self-reports themselves revealed internally large to very large effect sizes that appeared influenced by shared method variance. Despite having separate underlying constructs of dissociation, the DES and the MDI both asked study participants to make personal judgments on behaviors and symptoms of which they were actively aware. This approach appeared to be limited in multiple ways. Given demonstrated relationships between phenomena of alexithymia and dissociation (Majohr, Leenen, Grabe, Jenewein, Nunez, & Rufer, 2011; Tolmunen et al., 2010; Clayton, 2004), individuals with dissociative processes have been shown to have difficulties identifying and naming internal and physiological experiences. As a result, the self-reports possessed inherent limitations in trying to measure a disruption in consciousness via direct endorsement of such alterations. Moreover, both the DES and MDI measures only utilized one paradigm in which to assess for dissociative processes. Within this study, the Rorschach offered an alternative lens that possessed significant differences from the self-report variables and helped to identify unique findings, particularly related to therapy participation (Tables 11 and 12). And while both self-report and projective assessment appeared able to assess dissociative experiences with some convergence, the remaining discrepancy indicated utility to

cross-method measurement of such processes in order to be able to track them more efficiently and thoroughly.

Additionally, evidence collected from the correlational (Table 4) and regression (Table 5) analyses further strengthened the notion that dissociation is not a global or unidimensional experience. Given the different conceptualizations and methods, this was not wholly surprising. However, a closer look at the results suggested both the limitations in a univariate approach to dissociation as well as the benefits of examining distinct forms of dissociation. In addition to the global constructs of dissociation (e.g. the DES and the MDI Total scores) having correlations that suggested multiple colinearity (Table 4), the DES did not demonstrate any utility in predicting response-to-treatment. Instead, specific subscales of the MDI (e.g. Emotional Constriction, Identity Dissociation) as well as the RFS-S demonstrated their own unique contributions. Each of these variables represented not just disparate paradigms of dissociation, but different symptoms. As result, these findings further impressed the relevance and importance of measuring psychological processes in a refined and differentiated manner that is consistent with dissociation's multiplicity and nuances.

Going forward, this project strengthened the notion that dissociation should not be discussed as a singular process or construct (Briere, 2002; Briere, Weathers, & Runtz, 2005). Instead, dissociation appears to be a psychological experience that is in need of a conceptual split into its parts. Clinicians and research should strive to specifically parse out different forms of dissociation as well as to use language that describes the relevant symptom at more discrete and experiential terms. Moreover, in order to more fully understand the role that dissociation plays in the functioning and treatment of individuals with comorbid PTSD and SUD, careful measurement is needed to continue advancing research, theory, and practice.

The RFS-S did exhibit significant correlations with certain MDI subscales (Depersonalization, Derealization, Identity Dissociation) (Table 4). When examined for predictive relationships with the RFS-S via multiple regression analysis, no significant associations were demonstrated for the self-report measures of dissociation (Table 5). Still, a question remained about the relevance of Depersonalization, Derealization, and Identity Dissociation subscales on the MDI compared to the Emotional Constriction, Memory Disturbance, and Disengagement variables. Holmes et al. (2005) evaluated the differentiation of two qualitatively separate types of dissociation: detachment and compartmentalization. Detachment is considered to reflect experiences of disconnection from self and others while compartmentalization portrayed disturbances in the capacity to manage and experience certain internal processes of emotion, thought, and memory. An alternative categorical delineation of these types can be viewed as relational (detachment) and intrapsychic (compartmentalization). Holmes et al. (2005) specifically situated depersonalization and derealization as examples of detachment in addition to viewing amnesia, hysterical conversion and emotional numbing as forms of compartmentalization. Above and beyond Holmes et al.'s (2005) specific categorizations, Identity Dissociation is presently hypothesized as a form of detachment given its operationalization of disruptions in one's integrated sense of self. Additionally, as an assessment of one's capacity to monitor and manage attention, Disengagement is conceptualized as a version of compartmentalization. Following this taxonomy, the MDI constructs can be categorized as such:

Table 18 *MDI Subscales Viewed As Forms of Detachment and Compartmentalization*

Detachment	**Compartmentalization**
Derealization	Emotional Constriction
Depersonalization	Memory Disturbance
Identity Dissociation	Disengagement

Following these assignments, the RFS-S demonstrated significant associations with detachment forms of dissociation, suggesting shared relational qualities of these dissociative processes. As such, the RFS-S measure may portray a type of dissociation that is primarily associated with areas of interpersonal functioning and, furthermore, is more theoretically consistent with relational ideas of dissociation. Recent expansions of psychoanalytic theory (Bromberg, 1994, 2003; Stern, 1997; Howell, 2005) have focused upon the role of dissociation within the development of the self as well as its influence on psychopathology and treatment. Such advances have framed a dissociative process that is relational in origin and operates interpersonally in contrast to types that narrow and restrict intrapsychic functions related to attention, affect, and memory. Dissociation that disrupts the use of potential space impacts the interaction between subjective and objective perception, which occurs at the interface of how an individual experiences and participates with external stimuli. While clearly an internal process of comprehension and meaning-making, this process of psychic experience seems particularly situated within the relational realm as it pertains to the interaction between one's mind and the outside world.

When fantasy and reality as well as subjective and objective perceptions have impaired interactions, as in the case of potential space dissociation, novel and creative interactions become constrained and potentially foreclosed (Ogden, 1985; Wigren, 1996; LaMothe, 2005). As a

result, certain modes of relatedness may be repeated, often through enactment and projective-identification (Howell, 2005; Stern, 2003, 2004). Breakdowns in utilization of potential space will have ripple effects upon interpersonal functioning. Furthermore, impaired capacities to have internal and external perceptions inform each other may perpetuate subjective re-experiencing of past traumatic impingements within current relationships. Looking back, Winnicott (1953, 1954, 1967, 1971) theorized that the development of potential space is situated within the caretaking dyad, providing an interpersonal arena for interaction of me and not me and self and other. Viewing breakdowns of potential space as not just a process-based type of dissociation but primarily a relational form is potentially consistent with the original theory on the basis and function of potential space.

Another interpretation of the overlap between the RFS-S and the 3 MDI subscales concerns the interpersonal elements of the Rorschach method. While the theory of the RFS focuses upon the subject's capacity to integrate reality elements of the blot with associations from individual fantasy, the Rorschach is something done with the examiner. The presence and participation of the tester has been theorized as influencing the responses of the testee (Lerner, 1991). Issues of trust and autonomy can be activated within the clinician-client pair (Schafer, 1954; Schactel, 1966). Additionally, aspects of transference and countertransference can affect the interactions that take place during the active administration (Lerner, 1988; Ogden, 1983). As a result, the interpersonal field between examiner and subject creates an opportunity in which to activate and, thus, measure relational processes, possibly including detachment forms of dissociation. It may be that the Rorschach is an apt model to track use of potential space because of its intersubjective elements. Such an explanation would be more likely true if the RFS-S

operationalization of how one utilizes potential space is, in fact, capturing a relational dissociative process.

Of note, while considered separate conceptually as well as experientially within this research, the MDI subscales demonstrated very large effect size relationships with each other when examined via correlational analyses (Table 5). Medium to very large effect sizes (*p* ranging from .32 to .76) were previously demonstrated in a general population sample of 618 people, and even with these high levels, the MDI subscales held up under statistical analysis as separate factors that reflected distinct forms of dissociation (Briere, Weathers, & Runtz, 2005). The elevations in overlap within this study may have been influenced by the lower number of individuals participating as well as the specificity of the sample to individuals clinically diagnosed with comorbid PTSD and SUD. Whether such conditions influence the overlap of dissociative processes compared to nonclinical samples remains to be seen. Future research should aim to further consider the significance of separating dissociation into distinct clusters as well as the categories of detachment and compartmentalization.

RFS-S Prediction of Therapy Participation

Within psychoanalytic theory, use of potential space has been conceptualized as facilitating an individual's capacity to enter into and benefit from psychotherapy (Winnicott, 1971; Summers, 2005; LaMothe, 2008). These ideas have reflected the potential value of potential space within the treatment relationship as well as its support of new meaning-making and the ability to process thoughts and feelings. As such, improved utilization of potential space as measured by decreased variance in the RFS-S was hypothesized to support treatment response. The finding that RFS-S was positively associated with the number of therapy sessions attended for both the ITT and the Treatment sample ran contrary to this idea (Tables 11 and 12,

respectively). These results signaled that increased dissociation within potential space was predictive of more sustained participation in the treatments provided.

This is the first study utilizing the RFS system in relation to therapy engagement. The association between RFS-S and number of sessions attended indicated two significant trends: i) participants that demonstrated increased capacities for use of potential space *did not* sustain involvement in the provided treatments, and ii) individuals with impaired use of potential space better maintained participation. The first implication suggested some mismatch between individuals displaying integrated access to potential space and the two psychotherapies provided in this randomized controlled trial: Relapse Prevention Therapy (RPT) and Concurrent Treatment of PTSD and Substance Dependence (CTPSD). For both manualized interventions, the initial 3-4 sessions offered similar focus on developing relapse prevention skills. These frameworks did not incorporate exploratory, expressive, or meaning-making exercises nor did they initiate re-processing techniques, which only begin after one month of treatment in CTPSD. The structured and guided nature of these treatments may not have promoted individuals to utilize capacities for play and creativity associated with potential space. Interventions that inhibit imaginative thinking as well as patient autonomy have been theorized as interfering with therapeutic progress for some individuals (Pizer, 1996; LeVine, 1984). Such a dynamic may have been at play for individuals with relatively healthy access to potential space. Furthermore, restricted activation of creative processes associated with potential space may have diminished motivation to engage the clinician, subsequently inhibiting intersubjective exchanges that would have further tasked and employed an individual's potential space. Lacking opportunities to apply this area of developmental achievement may have not have provided the appropriate stimulation for this level of individual functioning.

Albeit a counterintuitive finding, individuals that demonstrated *increased* fragmentation of potential space better maintained involvement, suggesting a more appropriate alignment between client and treatment. High scatter on the RFS is consistent with an individual that struggles to integrate experiences of reality and fantasy, leaving events to be experienced as more concrete and literal. Such a cognitive style appeared to have been better aligned or more motivated to continue engaging with RPT and CTPSD as constructed in this study. Outside of their shared initial focus on skills building, both psychotherapies followed a schedule with specific weekly assignments and tasks. The structured and practice-based framework seemed to have promoted engagement of individuals with this type of dissociative process. Matching between patient and therapist based on individual factors that influence the therapeutic alliance as well as interactions between coping-style and focus of intervention (symptom change versus insight-oriented) have illustrated ways in which to guide treatment customization and to promote both therapeutic involvement and change (Beutler, Forrester, Gallagher-Thompson, Thompson, & Tomlins, 2012). Experiencing the clinician as a teacher and leader who would provide formal skills and psychoeducation may have resonated with participants experiencing infringements upon potential space, which have been hypothesized as interfering with novel symbolization (Ogden, 1985). A diminished capacity for play and exploration by the patient may present an opportunity for the therapist to take on a more proactive role in providing new ideas and approaches. Subsequently, more structured psychotherapies that provide activities and exercises, like RPT and CTPSD, may be better aligned for the individual that struggles with meaning-making and relationality as they pertain to impairments in potential space.

Altogether, the unexpected finding regarding dissociation of potential space further intimated that careful multi-method assessment of pretreatment functioning across various

domains might help to better identify for whom a specific intervention is indicated. As part of such a multi-method approach, this study has identified value of the Rorschach as well as psychoanalytic conceptualizations of psychopathology in performing treatment customization. Moreover, this result suggested the need for psychotherapeutic interventions to be matched beyond common factors such as presenting symptoms and diagnoses, taking into consideration features more specific to the individual. As such, further understanding into how a person's capacity to integrate meaning, play, and mutuality within psychotherapeutic interventions is indicated in order to better establish and maintain treatment participation and efficiency.

Furthermore, this finding indicated that dissociation of potential space was not categorically a red flag for treatment. Rather, it alone predicted increased involvement. As a result, examination of supposed psychopathology might need to be better maintain a view on symptoms as adaptations that involve a complex and multidimensional system of deficits and resources. Based on this project, restricted use of potential space may be harnessed in order to sustain participation given assignment to certain psychotherapies. Given that this is the first study into relationships between the RFS and therapeutic engagement, caution exists in generalizing this finding, particularly to other psychotherapies. Additionally, it bears noting that therapy participation is likely not the best response variable for therapeutic effectiveness. Future research is needed to examine how potential space influences participation within other treatment modalities.

Still, in further considering the relationships between pretreatment breakdowns in potential space on response-to-treatment variables, the RFS-S was not predictive of changes in posttraumatic symptoms or substance use behaviors. The lack of demonstrated relationships between use of potential space and the primary areas of focus for integrated treatments of PTSD

and SUD intimated that this area of experience was not related to how an individual responded within this sample. In addition, the absence of significant associations between the RFS-S and these response-to-treatment variables suggested that such changes in behaviors were not primarily determined by how one is able to apply potential space. As a result, decisions related to decreasing substance use as well as the reduction in posttraumatic experiences following a time-limited intervention appeared to fall outside this area of psychic functioning.

Another perspective on these unexpected results exists in relation to how individuals engage short-term treatment for comorbid substance abuse and posttraumatic stress. Research has suggested that individuals receiving brief interventions have a propensity to stay in treatment only long enough to extract the optimal benefit possible (Barkham et al., 1996). For individuals with healthy access to potential space despite diagnosed difficulties with substance dependence and PTSD, the provided treatments may not have offered a therapeutic setting in which this specific constellation of psychological functioning could enact reward further than that received in a limited number of sessions. Additional evidence has demonstrated that individuals with more impaired pretreatment functioning tend to be more compliant in their treatment attendance (Najavits, Weiss, Shaw, & Muenz, 1998; Hien et al., 2012). Such associations have been considered as evidence of greater need for treatment. Elevations in dissociation of potential space may have conformed to this trend. However, this argument is tenuous considering that potential space is a developmental process starting in infancy, and it is not likely that impairments in this specific arena of experience have suddenly prompted entry into treatment. Nevertheless, utilization of potential space appeared to provide a proxy through which to help guide therapeutic assignment.

Impact of Dissociation on Changes in Primary Substance Use

Findings from regression analyses identified relationships between certain pretreatment levels of dissociation and substance use response-to-treatment. Specifically, two different scales of the MDI (Emotional Constriction and Identity Dissociation) demonstrated opposing predictive relationships with changes in posttreatment substance use. Some caution is required in interpreting these results, as it is not wholly clear whether the symptoms reported by the participants reflected substance-induced distortions or psychologically-driven processes of dissociation. As previously discussed, such limitations are inherent in self-reports. Still, the presence of findings between certain documented behaviors and patterns and treatment response suggested the relevance of these experiences when they are consciously reported by clients prior to intervention.

Regarding the MDI – Emotional Constriction subscale, higher levels were associated with greater reductions in posttreatment substance use relative to baseline. This finding (Table 7) suggested that individuals with elevated experiences of emotional constriction had improved responsiveness to the research treatments of RPT and CTPSD. Restrictions in emotion reflect an avoidance of certain affective states and this pattern is a specific symptom within the DSM-IV Cluster C criteria of PTSD, which reflects an embedded link between certain dissociative processes and ongoing posttraumatic stress. A contrasting perspective has proposed that emotional constriction, especially affective numbing, is primarily a psychobiological aspect of PTSD as opposed to a dissociative process (Feeny, Zoellner, Fitzgibbons, & Foa, 2000). While not resolving the phenomenological question of emotional constriction, which may involve multidimensional pathways, its significance as a positive predictor of change demonstrated

unique contributions of this process and, thus, further suggested its relevance as a specific psychological event.

Substance use has been identified as an agent that can help facilitate and perpetuate restrictions in affect (Hussey & Singer, 1993; Burton, 2005; Langeland et al. 2002). The finding that acute presentations of emotional numbing had greater predicted reductions in substance use suggested that these participants were more disposed to reduce their reliance on ongoing substance use, implying a readiness for treatment and, likewise, a more tenuous attachment to ongoing substance use. These individuals may not have been as reliant on a drug in order to manage their emotional responses. Additionally, it is possible that having learned to avoid emotions may have been a resource in learning how to avoid substances. Such a scenario is interesting given the complicated dynamic within integrated treatments for PTSD and SUD that are aimed at both reducing avoidance of internal states but want to encourage increased evasion of certain behaviors, thoughts, and people that promote substance use. Altogether, emotional avoidance was not purely a psychopathological process that interfered with changes in substance use. Similar to results concerning the RFS-S and therapy participation, this finding challenged the notion that dissociative processes are a negative influence upon treatment.

Bucci (2007) discusses the multiplicity of dissociation as a source of vulnerability as well as a strength wherein the capacity to shift between self-states supports absorption into work. Dissociative processes represent adaptations that enable an individual to narrow modes of psychological functioning, which in certain situations might function as a resource, like a scientist hyper-focused on his labs for several hours. An ability (or talent) to minimize the experience of affect might be an asset in coping with increases in psychological distress that have been evidenced to occur subsequent to decreases in substance use as well as a result of

traumatic re-processing (Somer & Avni, 2003; Ebner-Priemer et al., 2009; Foa & Kozak, 1986). Additionally, the positive influence of emotional constriction upon changes in substance use suggested that the organization and structure provided by a dissociative process might be employed in specific contexts. Such a view is consistent with a strength-based approach towards therapeutic change that involves helping the individual to better apply his skills in order to address areas of weakness.

However, other forms of dissociation appeared to restrict gains made within psychological intervention. Individuals with high levels of Identity Dissociation on the MDI demonstrated an association opposite to Emotional Constriction, wherein higher levels of pretreatment dissociation predicted poorer substance use outcomes for both the ITT and Treatment samples (Table 9 and Table 10, respectively). Disruptions in one's sense of a coherent and integrated personality functioned as an impediment to change. In the presence of this dissociative process, an individual with a fragmented sense of self appeared to possess a more entrenched attachment with substance use, potentially related to the repetition and stabilization of self-states as a result of the desired drug effect. Such an interpretation would represent a more severe need to self-medicate internal cohesion through continued use (Khantzian & Albanese, 2008).

Furthermore, the reduced responsiveness to treatment for high identity dissociators intimated that substance use was not adequately addressed by the treatments provided in this research. This subgroup of traumatized individuals may have increased difficulties learning relapse skills and internalizing change into a disintegrated system of agency, behavior, and affect, especially through a time-limited and structured type of treatment relationship. As a result, high levels of identity dissociation may require other forms of intervention in order to

achieve desired gains. For patients with severe fragmentation in identity, Howell (2011) has argued for the value of phase-oriented psychotherapy that facilitates flexibility, integration, and traumatic-reprocessing within the treatment relationship.

When reviewing literature concerning the association between pretreatment dissociation and therapeutic response, findings have varied depending upon the study. Some have demonstrated dissociation as a negative predictor (Michelson et al., 1998; Rufer et al., 2006; Spitzer et al., 2007; Ebner-Priemer et al., 2009; Lynch et al., 2008) while others have not indicated an impact on treatment response (Hagenaars et al., 2010; Speckens et al., 2006). The Resick et al. (2012) study utilized MDI scales to examine the predictive relationship of pretreatment dissociation on reductions in posttraumatic stress. While utilizing different interventions that combined emotional and cognitive re-processing as well as working with individuals with only PTSD, their study found no relationship between pretreatment MDI variables and treatment effect. This dissertation presented a differing set of findings wherein certain types of dissociative processes impacted treatment response in distinct ways. For individuals with comorbid PTSD and SUD, dissociation could be an asset (Emotional Constriction) or a barrier (Identity Dissociation) to reductions in substance use. Such a contrast provided further rationale for the refined measurement of multiple dissociative processes as opposed to a single, global measurement of individual dissociation. Without the differentiation of dissociation into specific parts, the finding that certain processes support change while others impede it would not have been possible. Moreover, through careful assessment and research into different forms of dissociation, the ability to customize psychological intervention can become increasingly possible. Further inquiry is necessary in order to better understand the varying

impacts of different dissociative events as well as their potential influence within other patient samples and interventions.

Interaction Between Emotional Constriction and Treatment Type

RPT demonstrated a trend towards statistically significant ($p \leq .10$) improved performance in reducing substance use when compared to CTSPD (Table 16). Such a finding reflected the likely value in providing actionable skills and formal practice in order to diminish drug use. Beyond this, an interaction effect was identified between emotional constriction as measured by the MDI, treatment type, and primary substance use response (Table 16 and Figure 1). Individuals with low restrictions in affect assigned to RPT had better reduction in substance use relative to those with high levels of this dissociative process in RPT. Conversely, participants endorsing high affective dissociation who received CTPSD performed better than similarly assigned peers with low levels of emotional avoidance. This interaction demonstrated disparate amplification and muting effects for specific matches of individual and treatment.

As stated above, emotional numbing is both a specific form of dissociation as well as a particular type of posttraumatic symptom. The theory of fear habituation underlying exposure technique suggests the need to challenge the avoidance of certain affects that sustain posttraumatic impairments on functioning (Foa & Kozak, 1986). Repeated activation of a pathological fear network associated with the traumatic event functions to make the fear structure less threatening and anxiety-provoking, resulting in extinction over time. The finding that the inclusion of exposure provided increased relative efficacy in substance use change for individuals high on emotional constriction suggested another process occurring as a result of habituation: the reduction in the need for a chemical agent. As treatment intervened to reduce the cognitive and affective distress related to the traumatic memory, a diminished need for a

substance to achieve a specific emotion regulation was demonstrated as a treatment effect. When factoring in the theory of chemical dissociation (Briere & Runtz, 1987; Roesler & Dafler, 1993; Somer et al., 2010), restrictions in affect can be supported and maintained through ongoing use, which over time fosters both physiological and psychological reliance upon the drug. Within this paradigm, the substance and emotional constriction function reciprocally. But through a combination of cognitive skills *and* traumatic re-processing, this study demonstrated an efficacious pathway through which this maladaptive attachment could be weakened. As a result, individuals with comorbid SUD and PTSD in conjunction with high emotional constriction represented an affectively avoidant subgroup that had increasing gains when receiving an integrated treatment.

Conversely, individuals with low dissociation of affect experienced a contingent lift in treatment response when assigned to RPT. Individuals with this constellation of functioning performed better within an approach that concentrated on cognitive-behavioral relapse-prevention skills. Such structured focus on behaviors and choices may have allowed them to make increasing alterations in their actions, as opposed to focusing on emotional experience. Likewise, re-processing of traumatic past events dampened relative treatment response. This subgroup of participants may not have required re-processing of traumatic experience in order to initiate reductions in substance use. In fact, participants with low affective constriction may have already identified their own means to affectively cope with the traumatic event. Another attempt at re-processing through exposure techniques may have interfered with their presenting system of emotional and posttraumatic regulation. Additionally, an integrated intervention may have been a distraction away from dedicated investment in making behavioral changes. Altogether, individuals diagnosed with PTSD and SUD but low on emotional constriction

appeared indicated for time-limited and cognitive-behavioral modalities. Taken together, these interaction findings documented the potential for increased efficacy of care when proper matching of treatment can occur. Factoring in different types of dissociation could help to customize care above and beyond the presenting diagnoses of comorbid PTSD and SUD. As a result, both practice and research should aim to consider the importance of psychological processes in addition to DSM and ICD categories.

Additionally, the presence of an interaction effect when factoring in specific dissociative processes is consistent with a previous study that identified differing treatment responsiveness based on treatment type and levels of dissociation, particularly depersonalization (Resick et al., 2012). Individuals with high depersonalization were found to experience increased improvement from an integrated treatment that included both cognitive skills and traumatic re-processing while those low on this form of dissociation evidenced a better treatment response when assigned to a strictly cognitive approach to trauma intervention. The relative efficacy of an integrated model in both the Resick et al. (2012) study and this dissertation implicated the value of treatments that combine approaches when faced with elevated dissociation of certain types. For certain individuals, an integrated treatment may offer specific advantages by helping to support emotional habituation *and* by providing cognitive supports that the individual can then apply. Providing multiple interventions may better enable this class of patients to actualize changes and create a new equilibrium. Overall, the findings of this research were predicated upon the refined measurement of distinct dissociative processes. Such nuanced assessment can be utilized to identify subgroups of individuals who then can be matched with fitting interventions. As a result, treatment providers should strive to consider different forms of dissociation as part of treatment planning, particularly for individuals with comorbid PTSD and SUD.

Clinical Implications

This section attempts to summarize how the study's key clinical implications exist in harmony. According to the results, dissociation appears to represent a multidimensional experience that requires careful assessment in order to provide appropriate and expedient treatment for individuals with comorbid PTSD and SUD. This project directly challenged the idea that equates dissociation with impaired use of psychotherapy. Furthermore, dissociation is not wholly a psychopathological process that restricts therapeutic change but rather a complex set of underlying processes involving both intrapsychic and interpersonal domains of functioning with distinct contributions to treatment response. Subsequently, perceiving dissociation at a global level is not sufficient to consider pretreatment functioning and clinical practice. Moreover, patients sharing DSM-IV diagnoses of PTSD and SUD are not a unitary population. In a similar vein, the analyses demonstrated that a "one-size-fits-all" approach has limited value for such comorbid conditions. Different dissociative processes should be accounted for in order for to provide a patient with matched clinical care.

In order to do so, this dissertation indicated that multi-method assessment can assist treatment efficacy. The utilization of self-reports as well as projective methods enable measuring dissociation from multiple lenses. Within this context, the Rorschach affords its own window into a patient's level of integration between reality and fantasy. Through application of the RFS scoring system, the Rorschach can be applied as a functional clinical and scientific tool that provides unique contributions to assessment. Future research is needed to better understand its utility at measuring therapeutic change as well as the role potential space plays in psychological well-being and treatment participation. Nonetheless, this project furthered the

notion that the Rorschach has its place as an evidenced-based tool that can provide data in both research and clinical settings.

Limitations and Future Directions

The discussion of limitations in this dissertation is organized into multiple parts that first discuss the limitations of effect size and power within the study. Next, the importance of replication and the need to expand research of dissociative processes across longitudinal lines as well as with new patient samples and psychotherapies is considered.

Effect Size Considerations

The sample size is likely this dissertation's most significant limitation. While the study revealed several significant findings that possessed medium to large effect sizes, these results overcame some of the challenges in power presented by both the number of participants as well as the statistical degrees of freedom utilized by the multiple measurements within regression analyses. This analytic approach was applied to identify the specific contributions that each assessment type and its underlying conceptualization of dissociation provided in predicting treatment response. Larger samples may reveal further findings that occur with relatively smaller effect sizes. Trends regarding possible relationships between MDI – Memory Disturbance and substance use response (Table 7) may demonstrate different levels of statistical significance in a larger research pool. As such, future inquiry may help to examine additional associations and predictive relationships that exist between distinct forms of dissociation and treatment response.

Larger sample sizes may also provide further benefits in understanding the role of dissociation compared to other influences on treatment, particularly in areas of trauma. Given their relevance in previous studies (Schafer et al., 2010; van Den Bosch, Verheul, Langeland, &

van den Brink, 2003), age of onset, chronicity, perpetrator, and the presence of emotional trauma may be important factors to consider when investigating the links between dissociation, trauma, substance use, and treatment response. Examination of these variables was not possible within this study due to its limited sample. Additionally, other psychological processes related to the therapeutic alliance and the capacity for meaning-making may help to provide insight into the finding that higher levels of potential space dissociation were associated with improved retention in treatment. Assessment of experiences such as perceived support, consistency, safety, and containment may help to better understand how an individual with fragmented integration of reality-fantasy and self-and-other is responsive to certain types of treatment.

Beyond Pretreatment Dissociation

This project indicated the presence of distinct dissociative processes prior to intervention as well as specific contributions to predicting treatment response. However, this study only analyzed the role of pretreatment levels of dissociation. Further research is needed to examine how the various forms of dissociation change through intervention and what impact such modifications have within clinical interventions. Future work can help to better understand what psychotherapies are best aligned with certain constellations of presenting symptoms and intrapsychic processes. Furthermore, projects that examine pre- versus posttreatment levels of dissociation will provide another lens into therapeutic change that may bear relationships with alterations in posttraumatic stress and substance use. Possible associations of change between self-reports and the Rorschach may help to reflect how these measurements tap overlapping processes, particularly within the paradigm of detachment and compartmentalization. Another specific area of interest involves affective dissociation given its influence on primary substance use as well as its interaction effect with differing treatment types. Whether this psychological

process also changes in accordance with reductions in drug use will help to further illuminate the role of chemical dissociation as a link between trauma, substance use, and emotional avoidance.

Additionally, given the demonstrated utility of a multi-method approach for examining dissociative processes, future research should consider alternative assessments, including physiological measurements. Tracking possible dissociation within session may help to better understand response-to-treatment as well as therapy participation patterns. Moreover, repeated and multiple measurements offer a research approach that will refine understanding of dissociative processes as well as support continued discovery into the role of dissociation before, during, and after intervention.

The Role of Therapy

The interaction effect demonstrated within this dissertation indicated the importance of continuing the essential line of inquiry into therapeutic change and customized treatment planning. Following the finding that levels of emotional constriction have contingent impacts on responsiveness depending upon the assigned treatment for comorbid PTSD and SUD, research should inquire into its impact upon other treatment modalities for these conditions, including group therapy and psychodynamic approaches. Additionally, examination into possible relationships between the RFS-S and other therapeutic interventions will help to shed light on this study's finding about improved treatment retention given elevations in dissociation of potential space. Whether this result can be replicated or contrasted can provide additional feedback into how potential space influences therapy engagement as well as the relevance of the RFS as a clinical tool. Furthermore, building on the importance of assessing dissociative processes longitudinally over the course of treatment, the impact of different interventions upon shifts in dissociation bears examination. Given the Resick et al. (2012) finding that

posttreatment decreases in dissociation were not tied to specific treatments of PTSD alone, questions remain about whether this relationship is demonstrated within integrated treatments of PTSD and SUD. While dissociation has been shown to have significant value as a clinical indicator of change and treatment appropriateness, further investigation is necessary in order to distinguish how different types of dissociative processes are best ameliorated. As the field continues to recognize and disentangle dissociation into its respective parts, nuanced assessment of psychological processes above and beyond diagnostic symptoms will help to ensure that the community is more accurately understanding who our patients are and what treatments they deserve.

Conclusion

As a contribution to both research and clinical practice, the current project provided new evidence that dissociation is a multivariate phenomena that necessitates multiple methods of assessment. Correspondingly, the study portrayed the utility of a scientific, evidenced-based Rorschach scoring symptom for identifying presenting levels of psychological functioning. Additionally, findings indicated that certain types of dissociative processes represented clinical markers for readiness to change and participate in treatment. And potentially most importantly, this project functioned to further the great promise in learning how to customize treatment based on nuanced measurement of psychological processes in addition to appropriate diagnostic classifications. That specific alignments of dissociation and treatment type have conditional effects on therapeutic action provided concrete evidence that one size cannot fit all. Helping to better match individuals with their treatments given both current capacities and deficits will help to provide improved ways for psychotherapy to be efficient and personalized.

BIBLIOGRAPHY

Armstrong, J. G. (1995). Psychological assessment. In J. L. Spira (Ed.), *Treating dissociative identity disorder* (pp. 3-37). San Francisco, CA: Jossey-Bass.

Armstrong, J. G. (2002). Deciphering the broken narrative of trauma: Signs of traumatic dissociation on the Rorschach. *Rorschachiana, 25,* 11-27.

Armstrong, J. G. & Loewenstein, R. J. (1990). Characteristics of patients with multiple personality and dissociative disorders on psychological testing. *The Journal of Nervous and Mental Disease*, 178, 448- 454.

Aron, L. & Frankel, J. (1994). Who is overlooking whose reality? Commentary on Tabin's 'Freud's shift from the seduction theory: Some overlooked reality factors'. *Psychoanalytic Psychology, 11,* 291-302.

Back, S., Dansky, B. S., Coffey, S. F., Saladin, M. E., Sonne, S., & Brady, K. T. (2000). Cocaine dependence with and without posttraumatic stress disorder: A comparison of substance use, trauma history and psychiatric comorbidity. *The American Journal of Addictions, 9,* 51-62.

Barkham, M., Rees, A., Shapiro, D. A., Stiles, W. B., Agnew, R. M., Halstead, J., . . . Harrington, V. M. (1996). Outcomes of time-limited psychotherapy in applied settings: Replication of the second Sheffield Psychotherapy Project. *Journal of Consulting and Clinical Psychology, 64,* 1079-1085.

Bernstein, E. & Putnam, F. W. (1986). Development, reliability and validity of a dissociation scale. *The Journal of Nervous and Mental Disease*, 174, 727-735.

Bernstein, I. H., Ellason, J. W., Ross, C. A., & Vanderlinden, J. (2001). On the dimensionalities of the Dissociative Experiences Scale (DES) and the Dissociation Questionnaire (DIS-Q). *Journal of Trauma & Dissociation, 2,* 103-123.

Beutler, L. E., Forrester, B., Gallagher-Thompson, D., Thompson, L., & Tomlins, J. B. (2012). Common, specific, and treatment fit variables in psychotherapy outcome. *Journal of Psychotherapy Integration, 22,* 255-281.

Bion, W. R. (1957). Differentiation of the psychotic from non-psychotic personalities. *The International Journal of Psychoanalysis, 38,* 266-275.

Blackledge, J. T. (2004). Functional contextual processes in traumatic stress. *International Journal of Psychology and Psychological Therapy, 4,* 443-467.

Blake, D. D., Weathers, F. W., Nagy, L. M., Kaloupek, D. G., Gusman, F. D., Charney, D. S., & Keane, T. M. (1995). The development of a clinician-administered PTSD scale. *Journal of Traumatic Stress, 8,* 75-90.

Blizard, R. A. (2003). Disorganized attachment, development of dissociated self-states, and a relational approach to treatment. *Journal of Trauma & Dissociation, 4,* 27-50.

Blum, K. (1984). *Handbook of usable drugs.* New York, NY: Gardner.

Bolles, R. C. & Fanselow, M. S. (1980). A perceptual-defense-recuperative model of fear and pain. *Behavioral and Brain Sciences, 3,* 291-323.

Bornstein, R. F. (2002). A process dissociation approach to objective-projective test score interrelationships. *Journal of Personality Assessment, 78,* 47-68.

Bornstein, R. F. (2009). Heisenberg, Kadinsky, and the heteromethod convergence problem: Lessons from within and beyond psychology. *Journal of Personality Assessment, 91,* 1-8.

Bornstein, R. F. (2010). Psychoanalytic theory as a unifying framework for 21st century personality assessment. *Psychoanalytic Psychology, 27,* 133-152.

Brady, K. T. (2001). Comorbid posttraumatic stress disorder and substance use disorders. *Psychiatric Annals, 31,* 313-319.

Brady, K. T., Back, S. E., & Coffey, S. F. (2004). Substance abuse and posttraumatic stress disorder. *Current Directions in Psychological Science, 13,* 205-209.

Brady, K. T., Dansky, B. S., Back, S. E., Foa, E. B., & Carroll, K. M. (2001). Exposure therapy in the treatment of PTSD among cocaine-dependent individuals: Preliminary findings. Journal of Substance Abuse Treatment, 21(1), 47-54.

Brady, K., Killeen, T., Saladin, M., Dansky, B., & Becker, S. (1994). Comorbid substance abuse and Posttraumatic stress disorder: Characteristics of women in treatment. *American Journal on Addictions, 3,* 160-163.

Brady, K. Pearlstein, T., Asnis, G. M., Baker, D., Rothbaum, B., Sikes, C. R., & Farfel, G. M. (2000). Efficacy and safety of sertraline treatment of posttraumatic stress disorder: A randomized controlled trial. *Journal of American Medical Association, 283,* 1837-1844.

Brand, B. L., Armstrong, J. G., & Loewenstein, R. J. (2006). Psychological assessment of patients with dissociative identity disorder. *Psychiatric Clinics of North America*, 29, 145-168.

Bremner, J. D., Vermetten, E., Southwick, S. M., Krystal, J. H., & Charney, D. S. (1998). Trauma, memory, and dissociation: An integrative formulation. In J. D. Bremner & C. R. Marmar (Eds.), *Trauma, memory, and dissociation* (pp. 365-402). Washington, DC: American Psychiatric Association.

Brenner, I. (2001). *Dissociation of trauma: Theory, phenomenology, and technique.* Madison, CT: International Universities Press, Inc.

Breslau, N., Davis, G. C., Andreski, P., & Peterson, E. (1991). Traumatic events and posttraumatic stress disorder in an urban population of young adults. *Archives of General Psychiatry, 48*, 216-222.

Breslau, N., Davis, G. C., Peterson, E. L., & Schultz, L. (1997). Psychiatric sequelae of posttraumatic stress disorder in women. *Archives of General Psychiatry, 54,* 81-87.

Breuer, J. (1893). Fräulein Anna O, case histories from studies on hysteria. *The Standard Edition of the Complete Psychological Works of Sigmund Freud, Volume II:* 19-47.

Briere, J. (1989). *Therapy for adults molested as children: Beyond survival.* New York, NY: Springer Publishing Co.

Briere, J. (2002). *Multiscale dissociation inventory.* Odessa, FL: Psychological Assessment Services.

Briere, J., Elliot, D. M., Harris, K., & Cotman, A. (1995). Trauma Symptom Inventory: Psychometrics and association with childhood and adult victimization in clinical samples. *Journal of Interpersonal Violence, 10,* 387-401.

Briere, J. & Runtz, M. (1987). Postsexual abuse trauma: Data and implications for clinical practice. *Journal of Interpersonal Violence, 2*, 367-379.

Briere, J., Scott, C., & Weathers, F. W. (2005). Peritraumatic and persistent dissociation in the presumed etiology of PTSD. *American Journal of Psychiatry, 162,* 2295-2301.

Briere, J., Weathers, F. W., & Runtz, M. (2005). Is dissociation a multidimensional construct? Data from the Multiscale Dissociation Inventory. *Journal of Traumatic Stress, 18,* 221-231.

Bromberg, P. M. (1993). Shadow and substance: A relational perspective on clinical process. *Psychoanalytic Psychology, 10,* 147-168.

Bromberg, P. M. (1994). "Speak! That I may see you": Some reflections on dissociation, reality, and psychoanalytic listening. *Psychoanalytic Dialogues, 4,* 517-547.

Bromberg, P. M. (1995). Psychoanalysis, dissociation, and personality organization: Reflection on Peter Goldberg's essay. *Psychoanalytic Dialogues, 5,* 511-528.

Bromberg, P. M. (1998). Staying the same while changing: Reflections on clinical judgment. *Psychoanalytic Dialogues, 8*, 225-236.

Bromberg, P. M. (2001a). Hysteria, dissociation, and cure: Emmy von N. revisited. In M. Dimen & A. Harris (Eds.), *Storms in her head: Freud and the construction of hysteria* (pp. 123-141). New York, NY: Other Press.

Bromberg, P. M. (2001b). The gorilla did it: Some thoughts on dissociation, the real and the really real. *Psychoanalytic Dialogues, 11,* 385-404.

Bromberg, P. M. (2003). Something wicked this way comes: Trauma, dissociation, and conflict. *Psychoanalytic Psychology, 20,* 558-574.

Brown, P. J., Read, J. P., & Kahler, C. W. (2003). Comorbid posttraumatic stress disorder and substance use disorders: Treatment outcomes and the role of coping. In P. Ouimette, & P. Brown (Eds.), *Trauma and substance abuse: Causes, consequences, and the treatment of comorbid disorders* (pp. 171-188). Washington, DC: American Psychological Association.

Brown, P. J., Stout, R. L., & Gannon-Rowley, J. (1998). Substance use disorder-PTSD comorbidity: Patients' perceptions of symptom interplay and treatment issues. *Journal of Substance Abuse Treatment, 15,* 445-448.

Brown, P. J. & Wolfe, J. (2004). Substance abuse and post-traumatic stress disorder comorbidity. *Drug and Alcohol Dependence, 35,* 51-59.

Bucci, W. (2007). Dissociation from the perspective of Multiple Code Theory: Part I. *Contemporary Psychoanalysis, 43,* 165-184.

Burton, N. (2005). Finding the lost girls: Multiplicity and dissociation in the treatment of addictions. *Psychoanalytic Dialogues, 15,* 587-612.

Cardena, E. (1994). The domain of dissociation. In S. J. Lynn & J. W. Rhue (Eds.), *Dissociation: Clinical and theoretical perspectives* (pp. 15-31). New York, NY: Guildford Press.

Carlson, E. B., Putnam, F. W., Ross, C., Anderson, G., Clark, P., Torem, M., . . . Braun, B. G. (1991). Factor analysis of the Dissociative Experiences Scale using multicenter study data. In B. G. Braun & E. B. Carlson (Eds.), *Proceedings of the Eight International Conference on Multiple Personality and Dissociative States.* Chicago, IL: Rush.

Carlson, E. B., Putnam, F. W., Ross, C. A., Torem, M, Coons, P., Dill, D. L., . . . Braun, B. G. (1993). Validity of the Dissociative Experiences Scale in screening for multiple personality disorder: A multicenter study. *The American Journal of Psychiatry, 150,* 1030-1036.

Carlson, E. B. & Putnam, F. W. (1993). An update on the Dissociative Experiences Scale. *Dissociation: Progress in the Dissociative Disorders, 6,* 16-27.

Cavaiola, A. A. & Schiff, M. (1988). Behavioral sequelae of physical and/or sexual abuse in adolescents. *Child Abuse & Neglect, 12,* 181-188.

Charles, M. (1998). On wondering: Creating openings into the analytic space. *Journal of Melanie Klein and Object Relations, 16,* 367-387.

Chilcoat, H. D. & Breslau, N. (1998). Investigations of causal pathways between PTSD and drug use disorders. *Addictive Behaviors, 23,* 827-840.

Clark, H. W., Masson, C. L., Delucchi, K. L., Hall, S. M., & Sees, K. L. (2001). Violent traumatic events and drug abuse severity. *Journal of Substance Abuse Treatment, 20,* 121-127.

Cicchetti, D., Fontana, A., & Showalter, D. (2009). Evaluating the reliability of multiple assessments of PTSD symptomatology: Multiple examiners, one patient. *Psychiatry Research, 166,* 269-80.

Clayton, K. (2004). The interrelatedness of disconnection: The relationship between dissociative tendencies and alexithymia. *Journal of Trauma & Dissociation, 5,* 77-101.

Compton, W.M., Thomas, Y. F., Stinson, F. S., & Grant, B. F. (2007). Prevalence, correlates, disability, and comorbidity of DSM-IV drug abuse and dependence in the United States: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Archives of General Psychiatry, 64,* 566-576.

Counts, R. M. (1990). The concept of dissociation. *Journal of American Academy of Psychoanalysis, 18,* 460-479.

Courtois, C.A., Ford, J. D., & Cloitre, M. (2009). Best practices in psychotherapy for adults. In C. A. Courtois, J. D. Ford (Eds.), *Treating complex traumatic stress disorders: An evidence-based guide* (pp. 82-103). New York, NY: Guilford Press.

Crawley, J. & Grant, J. (2001). The self in the couple relationship: Part 2. *Psychodynamic Counselling, 7,* 461-474.

Dansky, B. S., Saladin, M. E., Brady, K. T., Kilpatrick, D. G., & Resnick, H. S. (1995). Prevalence of victimization and posttraumatic stress disorder among women with substance use disorders: Comparison of telephone and in-person assessment samples. *The International Journal of the Addictions, 30,* 1079-1099.

Davidson, J. R. & Foa, E. B. (1991). Diagnostic issues in posttraumatic stress disorder: Considerations for the DSM-IV. *The Journal of Abnormal Psychology, 100,* 346-355.

Davies, J. M. & Frawley, M. G. (1994). *Treating the adult survivor of childhood sexual abuse: A psychoanalytic perspective.* New York, NY: Basic Books.

Davies, J. M. (1996). Linking the “Pre-Analytic” with the postclassical: Integration, dissociation, and the multiplicity of unconscious process. *Contemporary Psychoanalysis, 32*, 553-576.

Director, L. (2005). Encounters with omnipotence in the psychoanalysis of substance users. *Psychoanalytic Dialogues, 15*, 567-586.

Donovan, B., Padin-Rivera, E., & Kowaliw, S. (2001). "Transcend": Initial outcomes from a posttraumatic stress disorder/substance abuse treatment program. *Journal of Traumatic Stress, 14*, 757-772.

Dragan, M. & Lis-Turlejska, M. (2007). Lifetime exposure to potentially traumatic events in a sample of alcohol-dependent patients in Poland. *Journal of Traumatic Stress, 20,* 1041-1051.

Dunn, G. E., Ryan, J. J., Paolo, A. M., & Van Fleet, J. N. (1995). Comorbidity of dissociative disorders among patients with substance use disorders. *Psychiatric Services, 46*, 153-156.

Eagle, M. (2000). Repression part I of II. *Psychoanalytic Review, 87*, 1-38.

Ebner-Priemer, U. W., Mauchnik, J., Kleindienst, N., Schmahl, C., Peper, M., Rosenthal, M. Z., . . . Bohus, M. (2009). Emotional learning during dissociative states in borderline personality disorder. *Journal of Psychiatry & Neuroscience, 34*, 214-222.

Ellenberger, H. (1970). *The discovery of the unconscious.* New York: Basic Books.

Erel-Brodsky, H. (2008). Failures in the development of potential space in a group. *Clinical Social Work Journal, 36*, 395-402.

Exner, J. E. (2003). *The Rorschach: A comprehensive system. Volume 1: Basic foundations. 4th edition*. New York, NY: Wiley.

Evren, C., Sar, V., Evren, B. & Daldubak, E. (2008). Self-mutilation among male patients with alcohol dependency: the role of dissociation. *Comprehensive Psychiatry, 49,* 489-495.

Fairbairn, W. R. D. (1952). *Psychoanalytic studies of the personality*. London: Routledge & Kegan Paul.

Feeny, N. C., Zoellner, L. A., Fitzgibbons, L. A., & Foa, E. B. (2000). Exploring the roles of emotional numbing, depression, and dissociation in PTSD. *Journal of Traumatic Stress, 13*, 489-498.

Ferenczi, S. (1932). Confusion of tongues between adults and the child. *International Journal of Psychoanalysis, 30,* 225-230.

Foa, E. B. & Hearst-Ikeda, D. (1996). *Emotional dissociation in response to trauma: An information processing approach.* In L. K. Michelson & W. J. Ray (Eds.), *Handbook of dissociation: Theoretical, empirical, and clinical perspectives* (pp. 207-224). New York, NY: Plenum Press.

Foa, E. B. & Kozak, M. J. (1986). Emotional processing of fear: Exposure to corrective information. *Psychological Bulletin, 99,* 20-35.

Foa, E. B., Steketee, G., & Rothbaum, B. O. (1989). Behavioral/cognitive conceptualization of posttraumatic stress disorder. *Behavior Therapy, 20,* 155-176.

Fonagy, P. (2001). *Attachment theory and psychoanalysis.* New York, NY: Other Press.

Fonagy, P., Gergely, G., Jurist, E. L., & Target, M. (2002). *Affect regulation, mentalization, and the development of the self.* New York, NY: Other Press.

Fonagy, P., Steele, M., Steele, H., Leigh, T., Kennedy, R., Mattoon, G., & Target, M. (1995). Attachment, the reflective self, and borderline states: The predictive specificity of the Adult Attachment Interview and pathological emotional development. In S. Goldberg, R. Muir, & J. Kerr (Eds.), *Attachment theory: Social, developmental, and clinical perspectives* (pp. 233-278). Hillsdale, NJ: The Analytic Press.

Fonagy, P. & Target, M. (1998). Mentalization and the changing aims of child psychoanalysis. *Psychoanalytic Dialogues, 8,* 87-114.

Frawley-O'Dea, M. G. (1997). Who's doing what to whom? Supervision and sexual abuse. *Contemporary Psychoanalysis, 33,* 5-18.

Freud, S. (1894). The neuro-psychoses of defence. *The Standard Edition of the Complete Psychological Works of Sigmund Freud, Volume III:* 41-61.

Freud, S. (1938a). An outline of psycho-analysis. *The Standard Edition of the Complete Psychological Works of Sigmund Freud, Volume XXIII:* 139-208.

Freud, S. (1938b). Splitting of the ego in the process of defence. *The Standard Edition of the Complete Psychological Works of Sigmund Freud, Volume XXIII:* 271-278.

Frankel, J. (2002). Exploring Ferenczi's concept of identification with the aggressor: Its role in everyday life and the therapeutic relationship. *Psychoanalytic Dialogues, 12,* 101-140.

Fullilove, M. T., Fullilove, R. E., Smith, M., Winkler, K., Michael, C., Panzer, P. G., & Wallace, R. (1993). Violence, trauma and post-traumatic stress disorder among women drug users. *Journal of Traumatic Stress, 6,* 533-543.

Garb, H. N., Wood, J. M., Lilienfeld, S. O, & Nezworski, T. (2005). Roots of the Rorschach controversy. *Clinical Psychology Review, 25,* 97-118.

Gentile, K. (2006). Timing development from cleavage to differentiation. *Contemporary Psychoanalysis, 42,* 297-325.

Grainger, R. (2008). Dramatherapy and cognitive readjustment. *Counselling Psychology Review, 23,* 40-46.

Gronnerod, C. (2004). Rorschach assessment of changes following psychotherapy: A meta-analytic review. *Journal of Personality Assessment, 83,* 256-276.

Hagenaars, M. A., van Minnen, A., & Hoogduin, K. A. L. (2010). The impact of dissociation and depression on the efficacy of prolonged exposure therapy for PTSD. *Behaviour Research and Therapy, 48,* 19-27.

Harned, M. S,, Najavits, L. M., & Weiss, R. D. (2006). Self-harm and suicidal behavior in women with comorbid PTSD and substance dependence. *The American Journal on Addictions, 15,* 392-395.

Hayes, S. C., Wilson, K. G., Gilford, E. V., Follette, V. M., & Stosahl, K. (1996). Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology, 64,* 1152-1168.

Herman, J. L. (1992). *Trauma and recovery.* New York, NY: Basic Books.

Hien, D. A., Cohen, L. R., Miele, G. M., Litt, L. C., & Capstick, C. (2004). Promising treatments for women with comorbid PTSD and substance use disorders. *The American Journal of Psychiatry, 161,* 1426-1432.

Hien, D. A., Jiang, H., Campbell, A. N. C., Hu, M., Miele, G. M., Cohen, L. R., . . . Nunes, E. V. (2010). Do treatment outcomes in PTSD severity affect substance use outcomes? A secondary analysis from a randomized clinical trial in NIDA's Clinical Trials Network. *American Journal of Psychiatry, 167,* 95-101.

Hien, D. A., Morgan-Lopez, A. A., Campbell, A. N. C., Saavedra, L. M., Wu., E., Cohen, L., . . . Nunes, E. V. (2012). Attendance and substance use outcomes for the Seeking Safety Program: Sometimes less is more. *Journal of Consulting and Clinical Psychology, 80,* 29-42.

Hien, D. A., & Scheier, J. (1996). Short term predictors of outcome for drug-abusing women in detox: A follow up study. *Journal of Substance Abuse Treatment, 13,* 227-231.

Hilgard, E. R. (1977). *Divided consciousness: Multiple controls in human thought and action.* New York, NY: Wiley.

Hilgard, E. R. (1994). Neodissociation theory. In S. J. Lynn & J. W. Rhue (Eds.), *Dissociation* (pp. 32-51). New York, NY: Guilford Press.

Holmes, E. A., Brown, R. J., Mansell, W., Fearon, R. P., Hunter, E. C. M., Frasquilho, F., & Oakley, D. A. (2005). Are there two qualitatively distinct forms of dissociation? A review and some clinical implications? *Clinical Psychology Review, 25,* 1-23.

Howell, E. F. (2005). *The dissociative mind.* New York, NY: The Analytic Press.

Howell, E. F. (2011). *Understanding and treating dissociative identity disorder: A relational approach.* New York, NY: Routledge.

Hunsley, J., & Bailey, J. M. (1999). The clinical utility of the Rorschach: Unfulfilled promises and its uncertain future. *Psychological Assessment, 11,* 266-277.

Hussey, D. L. & Singer, M. (1993). Psychological distress, problem behaviors, and family functioning of sexually abused adolescent inpatients. *Journal of American Academy of Child and Adolescent Psychiatry, 32,* 954-961.

Jacobsen, L. K., Southwick, S. M., & Kosten, T. R. (2001). Substance use disorders in patients with posttraumatic stress disorder: A review of the literature. *The American Journal of Psychiatry, 158,* 1184-1190.

James, W. (1891). *The principles of psychology*. London: Macmillan.

Jaycox, L. H., Ebener, P., Damesek, L. & Becker, K. (2004). Trauma exposure and retention in adolescent substance abuse treatment. *Journal of Traumatic Stress, 17,* 113-121.

Jemstedt, A. (2000). Potential space: The place of encounter between inner and outer reality. *The International Forum of Psychoanalysis, 9,* 124-131.

Kamphuis, J. H., Kugeares, S. L., & Finn, S. E. (2000). Rorschach correlates of sexual abuse: Trauma content and aggression indexes. *Journal of Personality Assessment, 75,* 212-224.

Karadag, F., Sar, V., Tamar-Gurol, D., Evren, C., Karagoz, M., & Erkiran, M. (2005). Dissociative disorders among inpatients with drug or alcohol dependency. *Journal of Clinical Psychiatry, 66,* 1247-1253.

Kaser-Boyd, N. & Evans, F. B. (2008). Rorschach assessment of psychological trauma. In C.B. Gacano, F. B. Evans, N. Kaser-Boyd, & L. A. Gacano (Eds.). *The handbook of forensic Rorschach assessment* (pp. 255-277). New York, NY: Routledge/Taylor & Francis Group.

Kazdin, A. E. (2006). Arbitrary metrics: Implications for identifying evidence-based treatments. *American Psychologist, 61,* 42-49.

Keane, T. M., Geraldi, R. J., Lyons, J. A., & Wolfe, J. (1988). The interrelationship of substance abuse and posttraumatic stress disorder: Epidemiological and clinical

considerations. In M. Galanter (Ed.), *Recent developments in alcoholism* (pp. 27-48). New York, NY: Plennum.

Kessler, R. C., Berglund, P., Demler, O., Jin, R. Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry, 62,* 593-60.

Kessler, R.C., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C. B. (1995). Posttraumatic stress disorder in the National Comorbidity Survey. *Archives of General Psychiatry, 52,* 1048-1060.

Kilpatrick, D. G., Saunders, B. E., Veronen, L. J., Best, C. L., & Von, J. M. (1987). Criminal victimization: Lifetime prevalence, reporting to police, and psychological impact. *Crime and Delinquency, 33,* 479-489.

Khan, M. M. R. (1973). The role of illusion in the analytic space and process. *The Annual of Psychoanalysis, 1,* 231-246.

Khantzian, E. J. (1985). The self-medication hypothesis of addictive disorders. *American Journal of Psychiatry, 142,* 1259-1264.

Khantzian, E. J. (2003). Understanding addictive vulnerability: An evolving psychodynamic perspective. *Neuro-psychoanalysis, 5,* 5-21.

Khantzian, E. J. & Albanese, M. J. (2008). *Understanding addiction as self medication: Finding hope behind the pain*. Lanham, MD: Rowman & Littlefield.

Kluft, R. P. (1985). The natural history of multiple personality disorder. In R. P. Kluft (Ed.), *Childhood antecedents of multiple personality disorder* (pp. 197-238). Washington, DC: American Psychiatric Association Press.

Krystal, H. (1978). Self representation and the capacity for self care. *Annual of Psychoanalysis, 6,* 209-246.

Krystal, H. (1995). Disorders of emotional development in addictive behavior. In S. Dowling (Ed.), *The psychology and treatment of addictive behavior* (pp.65-100). Madison, CT: International Universities Press.

Labott, S. M., Leavitt, F., Braun, B. G., & Sachs, R. G. (1992). Rorschach indicators of multiple personality disorder. *Perceptual and Motor Skills, 75,* 147-158.

LaMothe, R. (2005). Creating space: The fourfold dynamics of potential space. *Psychoanalytic Psychology, 22,* 207-223.

LaMothe, R. (2008). Alter(ing) potential space: Personalization and community in psychoanalytic therapy. *The American Journal of Psychoanalysis, 68,* 360-378.

Langeland, W., Draijer, N., & van den Brink, W. (2002). Trauma and dissociation in treatment-seeking alcoholics: Towards a resolution of inconsistent findings. *Comprehensive Psychiatry, 43,* 195-203.

Langeland, W., Draijer, N., & van den Brink, W. (2004). Psychiatric comorbidity in treatment-seeking alcoholics: The role of childhood trauma and perceived parental dysfunction. *Clinical and Experimental Research, 28,* 441-447.

Leavitt, F. & Labott, S. M. (1997). Criterion-related validity of Rorschach analogues of dissociation. *Psychological Assessment,* 9, 244-249.

Leavitt, F. & Labott, S. M. (1998). Rorschach indicators of dissociative identity disorders: Clinical utility and theoretical implications. *Journal of Clinical Psychology, 54,* 803-810.

Leonard, C., Mulvey, K., Gastfriend, D. R., & Shwartz, M. (2000). Addiction Severity Index: A field study of internal consistency and validity. *Journal of Substance Abuse Treatment, 18,* 129-135.

Lerner, P. M. (1988). Rorschach measures of depression, the false self, and projective identification in patients with narcissistic personality disorder. In H. Lerner & P. Lerner (Eds.), *Primitive mental states and the Rorschach* (pp. 71-94). New York, NY: International Universities Press.

Lerner, P. M. (1991). *Psychoanalytic theory and the Rorschach*. Hillsdale, NJ: The Analytic Press, Inc.

Levin, P. & Reis, B. (1997). Use of the Rorschach in assessing trauma. In J. P. Preston (Ed.), *Assessing psychological trauma and PTSD* (pp. 529-543). New York, NY: Guilford Press.

LeVine, E. S. (1984). The challenge of creative children: Implementing their divergency in the service of therapy. *Psychotherapy: Theory, Research, Practice, Training, 21,* 31-38.

Levine, H. B. (1990). Clinical issues in the analysis of adults who were sexually abused as children. In H. B. Levine (Ed.), *Adult analysis and childhood sexual abuse* (pp. 197-218). Hillsdale, NJ: The Analytic Press, Inc.

Liotti, G. (1999). Understand the dissociative processes: The contribution of attachment theory. *Psychoanalytic Inquiry, 19,* 757-783.

Liotti, G. (2009). Attachment and dissociation. In P. F. Dell & J. A. O'Neil (Eds.), *Dissociation and the dissociative disorders* (pp. 53-65). New York, NY: Routledge/Taylor & Francis Group.

Loewald, H. (1960). The therapeutic action of psychoanalysis. In H. Loewald (Ed.), *Papers on psychoanalysis* (pp. 221-257). New Haven, CT: Yale University Press.

Luxenberg, T. & Levin, P. (2004). The role of the Rorschach in the Assessment and Treatment of Trauma. In J. P. Wilson & T. M. Keane (Eds.). *Assessing psychological trauma and PTSD* (pp. 190-225). New York, NY: Guilford Press.

Lynch, S. M., Forman, E., Mendelsohn, M., & Herman, J. (2008). Attending to dissociation: Assessing change in dissociation and predicting treatment outcome. *Journal of Trauma & Dissociation, 9,* 301-319.

Lyons-Ruth, K. (1999). Two-person unconscious: Intersubjective dialogue, enactive relational representation, and the emergence of new forms of relational organization. *Psychoanalytic Inquiry, 19,* 576-617.

Lyons-Ruth, K. & Jacobvitz, D. (1999). Attachment disorganization: Unresolved loss, relational violence, and lapses in behavioral and attentional strategies. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: theory, research, and clinical applications* (pp. 520-554). New York, NY: Guilford Press.

Majohr, K., Leenen, K., Grabe, H. J., Jenewein, J., Nunez, D. G., & Rufer, M. (2011). Alexithymia and its relationship to dissociation in patients with panic disorder. *Journal of Nervous and Mental Disease, 199*, 773-777.

Marmar, C. R., Weiss, D. S., Schlenger, W. E., Fairbank, J. A., Jordan, B. K., Kulka, R. A., & Hough, R. L. (1994). Peritraumatic dissociation and posttraumatic stress in male Vietnam theater veterans. *The American Journal of Psychiatry, 151,* 902-907.

McDougall, J. (1978). *Plea for a measure of abnormality.* New York, NY: International Universities Press.

McDougall, J. (1989). *Theaters of the body.* New York, NY: W. W. Norton.

McFall, M., Saxon, A. J., Thompson, C. E., Yoshimoto, D., Malte, C., Straits-Troster, K., . . . Steele, B. (2005). Improving the rates of quitting smoking for veterans with posttraumatic stress disorder. *American Journal of Psychiatry, 162,* 1311-1319.

McGovern, M. P., Alterman, A. I., Drake, K. M., & Dauten, A. P. (2009). Co-occurring posttraumatic stress disorder and substance use disorder in addiction treatment settings. In K. T. Mueser, S. D. Rosenberg, & H. J. Rosenberg (Eds.), *Treatment of posttraumatic stress disorder in special populations: A cognitive restructuring program* (pp. 239-254). Washington, DC: American Psychological Association.

McLellan, A. T., Luborsky, L., O'Brien, C. P., & Woody, G. E. (1980). An improved diagnostic instrument for substance abuse patients: The Addiction Severity Index. *Journal of Nervous & Mental Diseases, 168,* 26-33.

Michelson, L., June, K., Vives, A., Testa, S., & Marchione, N. (1998). The role of trauma and dissociation in cognitive-behavioral psychotherapy outcome and maintenance in panic disorder and agoraphobia. *Behaviour Research and Therapy, 36,* 1011-1050.

Miller, B., Downs, W., & Testa, M. (1993). Interrelationships between victimization experiences and women's alcohol use. *Journal of Studies on Alcohol, 11,* 109-117.

Mills, K. L, Lynskey, M., Teesson, M., Ross, J., & Darke, S. (2005). Post-traumatic stress disorder among people with heroin dependence in the Australian treatment outcome study (ATOS): Prevalence and correlates. Drug and Alcohol Dependence, 77, 243-249.

Najavits, L. M. (2007). Seeking Safety: An evidence-based model for substance abuse and trauma/PTSD. In K. A. Witkiewitz & G. A. Marlatt (Eds.), *Therapist's guide to evidence-based relapse prevention* (pp. 141-167). San Diego, CA: Elsevier Academic Press.

Najavits, L. M., Gastfriend, D. R., Barber, J. P., Reif, S., Muenz, L. R., Blaine, J., . . . Weiss, R. D. (1998). Cocaine dependence with and without PTSD among subjects in the National Institute on Drug Abuse Collaborative Cocaine Treatment Study. *The American Journal of Psychiatry, 155,* 214-219.

Najavits, L. M., Weiss, R. D., & Shaw, S. R. (1997). The link between substance abuse and posttraumatic stress disorder in women: A research review. *American Journal on Addiction, 6,* 273-283.

Najavits, L. M., Weiss, R. D., Shaw, S. R., & Muenz, L. R. (1998). "Seeking Safety": Outcome of a new cognitive-behavioral psychotherapy for women with posttraumatic stress disorder and substance dependence. *Journal of Traumatic Stress, 11,* 437-456.

Newirth, J. (1996). On not interpreting: The metaphor of the baby, enactment, and transitional experience. *The American Journal of Psychoanalysis, 56,* 415-429.

Norris, F. H. (1992). Epidemiology of trauma: Frequency and impact of different potentially traumatic events on different demographic groups. *Journal of Consulting and Clinical Psychology, 60,* 409-418.

Nunes, E. V., Quitkin, F. M., Donovan, S. J., Deliyannides, D., Ocepek-Welikson, K., Koenig, T., . . . Woody, G. (1998). Imipramine treatment of opiate-dependent patients with depressive disorders: A placebo-controlled trial. *Archives of General Psychiatry, 55,* 153-160.

Ogden, T. H. (1983). The concept of internal object relations. *International Journal of Psychoanalysis, 64,* 227-243.

Ogden, T. H. (1985). On potential space. *International Journal of Psychoanalysis*, 66, 129-141.

Ogden, T. H. (1989). Playing dreaming and interpreting experience: Comments on potential space. In M. Fromm & B. Smith (Eds.). *The facilitating environment: Clinical applications of Winnicott's theory* (pp. 255-278). Madison, CT. International Universities Press.

Ogden, T. H. (1994). The analytic third: Working with intersubjective clinical facts. *The International Journal of Psychoanalysis, 75,* 3-19.

Ouimette, P., Moos, R. H., & Brown, P. J. (2003). Substance use disorder-posttraumatic stress disorder comorbidity: A survey of treatments and proposed practice guidelines. In P. Ouimette & P. J. Brown (Eds.), *Trauma and substance abuse: Causes, consequences, and treatment of comorbid disorders* (pp. 91-110). Washington, DC: American Psychological Association.

Pearlman, L. A. & Courtois, C. A. (2005). Clinical applications of the attachment framework: Relational treatment of complex trauma. *Journal of Traumatic Stress, 18,* 449-459.

Pizer, S. A. (1992). The negotiation of paradox in the analytic process. *Psychoanalytic Dialogues, 2,* 215-240.

Pizer, S. A. (1996). Negotiating potential space: Illusion, metaphor, and the subjunctive. *Psychoanalytic Dialogues, 6,* 689-712.

Putnam, F. W. (1989a). *Diagnosis and treatment of multiple personality disorder.* New York, NY: Guilford Press.

Putnam, F. W. (1989b). Pierre Janet and modern views of dissociation. *Journal of Traumatic Stress*, 2, 413-429.

Putnam, F. W. (1992). Discussion: Are alter personalities fragments or figments? *Psychoanalytic Inquiry, 12,* 95-111.

Putnam, F. W. (1997). *Dissociation in children and adolescents: A developmental perspective.* New York: Guilford Press.

Rachman, A. W. (1989). Confusion of Tongues: The Ferenczian metaphor for childhood seduction and emotional trauma. *Journal of the American Academy of Psychoanalysis, 17,* 181-205.

Read, J. P., Brown, P. J., & Kahler, C. W. (2004). Substance use and posttraumatic stress disorders: Symptom interplay and effects on outcome. *Addictive Behaviors, 29,* 1665-1672.

Resick, P. A., Suvak, M. K., Johnides, B. D., Mitchell, K. S., & Iverson, K. M. (2012). The impact of dissociation on PTSD treatment with cognitive processing therapy. *Depression and Anxiety, 29,* 718-730.

Resnick, H. S., Kilpatrick, D. G., Dansky, B. S., Saunders, B. E., & Best, C. L. (1993). Prevalence of civilian trauma and posttraumatic stress disorder in a representative national sample of women. *Journal of Consulting and Clinical Psychology, 61*(6), 984-991.

Reynolds, M., Mezey, G., Chapman, M., Wheeler, M., Drummond, C., & Baldacchino, A. (2005). Co-morbid post-traumatic stress disorder in a substance misusing clinical population. *Drug and Alcohol Dependence, 77,* 251-258.

Roberts, M. E., Moore, S. D., & Beckham, J. C. (2007). Post-traumatic stress disorder and substance use disorders. In M. Al'Absi (Ed.), *Stress and addiction: Biological and psychological mechanisms* (pp. 315-331). San Diego, CA: Elsevier Academic Press.

Roesler, T. A. & Dafler, C. E. (1993). Chemical dissociation in adults sexually victimized as children: Alcohol and drug use in adult survivors. *Journal of Substance Abuse Treatment, 10,* 537-543.

Ross, C. A., Kronson, J., Koensgen, S., Barkman, K., Clark, P., & Rockman, G. (1992). Dissociative comorbidity in 100 chemically dependent patients. *Hospital & Community Psychiatry, 43,* 840-842.

Rufer, M., Held, D., Cremer, J., Fricke, S., Moritz, S., Peter, H., & Hand, I. (2006). Dissociation as predictor of cognitive behavior therapy outcome in patients with obsessive-compulsive disorder. *Psychotherapy and psychosomatics, 75,* 40-46.

Saladin, M. E., Brady, K. T., Dansky, B. S, & Kilpatrick, D. G. (1995). Understanding comorbidity between PTSD and substance use disorders: Two preliminary investigations. *Addictive Behaviors, 20,* 643-655.

Saladin, M. E., Drobes, D. J., Coffey, S. F., Dansky, B. S., Brady, K. T., & Kilpatrick, D. G. (2003). PTSD symptom severity as a predictor of cue-elicited drug craving in victims of violent crime. *Addictive Behaviors, 28,* 1611-1629.

Sar, V. & Ross. C. (2006). Dissociative disorders as a confounding factor in psychiatric research. *Psychiatric Clinics of North America, 29,* 129-144.

Saxe, G. N., Geary, M., Hall, E., & Kaplow. J. (2008). Modeling pathways to posttraumatic stress disorder. In D. L. Delahanty (Ed.), *The psychobiology of trauma and resilience across the lifespan* (pp. 89-98). Lanham, MD: Jason Aronson.

Schactel, E. (1966). *Experiential foundations of Rorschach's test.* New York, NY: Basic Books.

Schafer, I., Langeland, W., Hissbach, J., Luedecke, C., Ohlmeier, M. D., Chodzinski, C., . . . Driessen, M. (2010). Childhood trauma and dissociation in patients with alcohol dependence, drug dependence, or both – a multi-center study. *Drug and Alcohol Dependence, 109,* 84-89.

Schafer, I, Reininghaus, U., Langeland, W., Voss, A., Zieger, N., Haasen, C., & Karow, A. (2007). Dissociative symptoms in alcohol-dependent patients: Associations with childhood trauma and substance abuse characteristics. *Comprehensive Psychiatry, 48,* 539-545.

Schafer, I. & Najavits, L. M. (2007). Clinical challenges in the treatment of patients with posttraumatic stress disorder and substance abuse. *Current Opinion in Psychiatry, 20,* 614-618.

Schafer, R. (1954). *Psychoanalytic interpretation in Rorschach testing.* New York, NY: Grune & Stratton.

Schauer, M. & Elbert, T. (2010). Dissociation following traumatic stress. *Journal of Psychology, 218,* 109-127.

Scroppo, J. C., Weinberger, J. L., Drob, S. L., & Eagle, P. (1998). Identifying dissociative identity disorder: A self-report and projective study. *Journal of Abnormal Psychology, 107,* 272-284.

Simeon, D., Guralnik, O., Knutelska, M., Yehuda, R., & Schmeidler, J. (2003). Basal norepinephrine in depersonalization disorder. *Psychiatry Research, 121,* 93-97.

Singer, M. I., Petchers, M. K., & Hussey, D. (1989). The relationship between sexual abuse and substance abuse among psychiatrically hospitalized adolescents. *Child Abuse & Neglect, 13,* 319-325.

Smith, B. L. (1990). Potential space and the Rorschach: An application of object relations theory. *Journal of Personality Assessment,* 55, 756-767.

Somer, E. (2003). Prediction of abstinence from heroin addiction by childhood trauma, dissociation, and extent of psychosocial treatment. *Addiction Research & Theory, 11,* 339-348.

Somer, E. (2009). Opioid use disorder and dissociation. In P. F. Dell & J. A. O'Neill (Eds.), *Dissociation and the dissociative disorders: DSM-V and beyond* (pp. 511-518). New York, NY: Routledge/Taylor & Francis Group.

Somer, E., Altus, L., & Ginzburg, K. (2010). Dissociative psychopathology among opioid use disorder patients: Exploring the 'chemical dissociation' hypothesis. *Comprehensive Psychiatry, 51,* 419-425.

Somer, E. & Avni, R. (2003). Dissociative phenomena among recovering heroin users and their relationship to duration of abstinence. *Journal of Social Work Practice in the Addictions, 3,* 25-38.

Speckens, A. E., Ehlers, A., Hackmann, A., & Clark, D. M. (2006). Changes in intrusive memories associated with imaginal reliving in posttraumatic stress disorder. *Journal of Anxiety Disorders, 20,* 328-341.

Spiegel, D. (1990). Hypnosis, dissociation, and trauma: Hidden and overt observers. In J. L. Singer (Ed.), *Repression and dissociation: Implications for personality theory, psychopathology, and health* (pp. 121-142). Chicago, IL: University of Chicago Press.

Spitzer, C., Barnow, S., Freyberger, H., & Grabe, H. J. (2007). Dissociation predicts symptom-related treatment outcome in short-term inpatient psychotherapy. *Australian and New Zealand Journal of Psychiatry, 41,* 682-687.

Steele, K. & van der Hart, O. (2009). Treating dissociation. In C. A. Courtois & J. D. Ford (Eds.), *Treating complex traumatic stress disorders: An evidence-based guide* (pp. 145-165). New York, NY: Guilford Press.

Stern, D. B. (1997). *Unformulated experience: From dissociation to imagination in psychoanalysis.* Hillsdale, NJ: The Analytic Press.

Stern, D. B. (2003). The fusion of horizons: Dissociation, enactment, and understanding. *Psychoanalytic Dialogues, 13,* 843-873.

Stern, D. B. (2004). The eye sees itself: Dissociation, enactment, and the achievement of conflict. *Contemporary Psychoanalysis, 40,* 197-238.

Summers, F. (1999). Psychoanalytic boundaries and transitional space. *Psychoanalytic Psychology, 16,* 3-20.

Summers, F. (2000). The analyst's vision of the patient and therapeutic action. *Psychoanalytic Psychology, 17,* 547-564.

Summers, F. (2005). The self and analytic technique. *Psychoanalytic Psychology, 22,* 341-356.

Sullivan, H. S. (1953). *The interpersonal theory of psychiatry.* New York, NY: Norton.

Swartz, M. S., Swanson, J. W., Hiday, V. A., Borum, R., Wagner, H. R., & Burns, B. J. Violence and severe mental illness: The effects of substance abuse and nonadherence to medication. *The American Journal of Psychiatry, 155,* 226-231.

Tamar-Gurol, D., Sar, V., Karadag, F., Evren, C., & Karagoz, M. (2008). Childhood emotional abuse, dissociation, and suicidality among patients with drug dependency in Turkey. *Psychiatry and Clinical Neurosciences, 65*, 540-547.

Tarnoplosky, A. (2003). The concept of dissociation in early psychoanalytic writers. *Journal of Trauma and Dissociation, 4*, 7-25.

Terr, L. C. (1991). Childhood traumas: An outline and overview. *The American Journal of Psychiatry, 148*, 10-20.

Tibon, S., Handelzalts, J. E., & Weinberger, Y. (2005). Using the Rorschach for exploring the concept of transitional space within the political context of the middle east. *International Journal of Applied Psychoanalytic Studies*, 2, 40-57.

Tibon, S. & Suchowski, R. (2005). RFS Software (Version 1.0). Available from http://rps-rfs.com/index.html.

Tibon, S., Weinberger, Y., Handelzalts, J. E., & Porcelli, P. (2005). Construct validity of the Rorschach Reality-Fantasy Scale in alexithymia. *Psychoanalytic Psychology, 22*, 508-523.

Tibon, S. & Rothschild, L. (2009). Dissociative states in eating disorders: An empirical Rorschach study. *Psychoanalytic psychology*, 26, 69-82.

Tolmunen, T., Honkalampi, K., Hintikka, J., Rissanen, M., Maarenen, P., Kylma, J., & Laukkanen, E. (2010). Adolescent dissociation and alexithymia are distinctive and overlapping phenomena. *Psychiatry Research, 176*, 40-44.

Triffleman, E. (2003). Issues in implementing posttraumatic stress disorder treatment outcome research in community-based treatment programs. In J. L. Sorensen, R. A. Rawson, J. Guydish, & J. E. Zweben (Eds.), *Drug abuse treatment through collaboration: Practice and research partnerships that work* (pp. 227-247). Washington, DC.: American Psychological Association.

Triffleman, E., Carroll, K., & Kellogg, S. (1999). Substance dependence posttraumatic stress disorder therapy. *Journal of Substance Abuse Treatment, 17*, 3-14.

Tuber, S. (2008). *Attachment, play, and authenticity: A Winnicott primer*. Lanham, MD: Jason Aronson.

van den Bosch, L. M., Verheul, R., Langeland, W., & van den Brink, W. (2003). Trauma, dissociation, and posttraumatic stress disorder in female borderline patients with and without substance abuse problems. *Australian and New Zealand Journal of Psychiatry, 37*, 549-555.

van der Hart, O. & Friedman, B. (1989). A reader's guide to Pierre Janet on dissociation: A neglected intellectual heritage. *Dissociation, 2,* 3-15.

van der Hart, O., Nijenhuis, E. R., & Steele, K. (2006). *The haunted self: Structural dissociation and the treatment of chronic traumatization.* New York, NY: W. W. Norton & Co.

van der Hart, O., Nijenhuis, E. R., Steele, K., & Brown, D. (2004). Trauma-related dissociation: Conceptual clarity, lost and found. *Australian and New Zealand Journal of Psychiatry, 38,* 678-686.

van der Hart, O., van der Kolk, B. A., & Boon, S. (1998). Treatment of dissociative disorders. In J. D. Bremner & C. R. Marmar (Eds.), *Trauma, memory, and dissociation* (pp. 253-283). Washington, DC: American Psychological Association.

van der Kolk, B. A. (1996). The complexity of adaptation to trauma: Self-regulation, stimulus discrimination, and characterological development. In B. A. van der Kolk, A. C. McFarlane, & L. Weisaeth (Eds.), *Traumatic stress: The effects of overwhelming experience on mind, body, and society* (pp. 182-213). New York, NY: Guilford Press.

van der Kolk, B. A. & Ducey, C. (1989). The psychological processing of traumatic experience: Rorschach patterns in PTSD. *Journal of Traumatic Stress,* 2, 259-263.

van der Kolk, B. A., McFarlane, A. C., & van der Hart, O. (1996). A general approach to treatment of posttraumatic stress disorder. In B. A. van der Kolk, A. C. McFarlane, & L. Weisaeth (Eds.), *Traumatic stress: The effects of overwhelming experience on mind, body, and society* (pp. 417-440). New York, NY: Guilford Press.

van der Kolk, B. A. & van der Hart, O. (1989). Pierre Janet and the breakdown of adaptation in psychological trauma. *American Journal of Psychiatry, 146,* 1530-1540.

van der Kolk, B. A., van der Hart, O., & Marmar, C. R. (1996) Dissociation and information processing in posttraumatic stress disorder. In B. A. van der Kolk, A. C. McFarlane, & L. Weisaeth (Eds.), *Traumatic stress: The effects of overwhelming experience on mind, body, and society* (pp. 303-330). New York, NY: Guilford Press.

van IJzendoorn, M. H. & Schuengel, C. (1996). The measurement of dissociation in normal and clinical populations: Meta-analytic validation of the Dissociative Experiences Scale (DES). *Clinical Psychology Review, 16,* 365-382.

Wagner, E. E. (1978). A theoretical explanation of the dissociative reaction and a confirmatory case presentation. *Journal of Personality Assessment, 42,* 312-316.

Wagner, E. E., Allison, R. B., & Wagner, C. F. (1983). Diagnosing multiple personalities with the Rorschach: A confirmation. *Journal of Personality Assessment, 47,* 143-149.

Wagner, E. E. & Heise, M. R. (1974). A comparison of Rorschach records of three multiple personalities. *Journal of Personality Assessment, 38,* 308-331.

Wenzel, K., Bernstein, D. P., Handelsman, L., Rinaldi, P., Ruggiero, J., & Higgins, B. (1996). Levels of dissociation in detoxified substance abusers and their relationship to chronicity of alcohol and drug use. *Journal of Nervous and Mental Disease, 184,* 220-227.

Westen, D. (2002). The language of psychoanalytic discourse. *Psychoanalytic Dialogues, 12,* 857-898.

Whiting, D. (2006). Some more reflections on emotions, thoughts, and therapy. *Philosophy, Psychiatry, & Psychology, 13,* 252-257.

Whitmer, G. (2001). On the nature of dissociation. *Psychoanalytic Quarterly, 70,* 807-837.

Wigren, J. (1999). As hardly killed, as easily wounded: Posttraumatic challenges to the working alliance. *Contemporary Psychoanalysis, 35,* 253-269.

Winnicott, D. W. (1971). *Playing and reality.* London: Tavistock.

Winnicott, D. W. (1953). Transitional objects and transitional phenomena: A study of the first not-me possession. *The International Journal of Psychoanalysis, 34,* 89-97.

Winnicott, D. W. (1954). Mind and its relation to the psyche-soma. *The British Journal of Medical Psychology, 27,* 201-209.

Winnicott, D. W. (1967). The location of cultural experience. *The International Journal of Psychoanalysis, 48,* 368-372.

Wood, J. M., Nezworski, M. T., Lilienfeld, S. O., & Garb, H. N. (2003). *What's wrong with the Rorschach? Science confronts the controversial inkblot test.* San Francisco, CA: Jossey-Bass.

Wurmser, L. (1977). Psychodynamics in compulsive drug use. Research Monograph Series, 12, 40.

Wurmser, L. (1978). *The hidden dimension: Psychodynamics of compulsive drug use.* New York, NY: Aronson.

Zeligman, R., Smith, B. L, & Tibon, S. (2012). The failure to preserve potential space in dissociative disorders: A Rorschach study. *Psychoanalytic Psychology, 29,* 188-205.

Zlotnick, C., Najavits, L. M., Rohsenow, D. J., & Johnson, D. M. (2003). A cognitive-behavioral treatment for incarcerated women with substance abuse disorder and posttraumatic stress disorder: Findings from a pilot study. *Journal of Substance Abuse Treatment, 25,* 99-105.

Zlotnick, C., Shea, T., Recupero, P., Bidadi, K., Pearlstein, T., & Brown, P. (1997). Trauma, dissociation, impulsivity, and self-mutilation among substance abuse patients. *American Journal of Orthopsychiatry, 67*, 650-654.