ABSTRACT

THE CAPACITY TO DISSOCIATE:
EXPLORING THE ADAPTIVE POTENTIAL OF DISSOCIATIVE EXPERIENCES

by Julia S. Kaufman

Dissociation is typically conceptualized as a response to trauma or maladaptive coping strategy; however, research has indicated that dissociation may have adaptive potential when an individual can flexibly deploy dissociative responses. The present study explored the adaptive advantages of dissociative experiences among 162 undergraduate students with histories of interpersonal violence. Three moderators (ego-resiliency, psychological acceptance, and impulse control difficulties) of the relation between dissociation and both posttraumatic growth (PTG) and posttraumatic stress symptoms (PTSS) were explored. Results revealed that dissociative experiences were associated with increases in PTSS, but were not associated with PTG. Ego-resiliency, acceptance, and impulse control difficulties did not moderate the relation between dissociation and outcome to allow dissociation to be adaptive. Results highlighted the benefits of acceptance and the ability to control behaviors when distressed and flexibly adapt based on context. Clinical implications including the potential benefit of mindfulness- and acceptance-based behavioral treatment approaches are discussed.
THE CAPACITY TO DISSOCIATE:
EXPLORING THE ADAPTIVE POTENTIAL OF DISSOCIATIVE EXPERIENCES

A Thesis

Submitted to the
Faculty of Miami University
in partial fulfillment of
the requirements for the degree of
Master of Arts
Psychology Department
by
Julia S. Kaufman
Miami University
Oxford, Ohio
2014

Advisor: Margaret O’Dougherty Wright, PhD

Reader: Terri Messman-Moore, PhD

Reader: April Smith, PhD
CONTENTS

Introduction .................................................................................................................................1
Definitions of Dissociation ........................................................................................................1
Assessment of Dissociation .......................................................................................................3
Evidence for Pathological and Nonpathological Subtypes of Dissociation .........................4
Maladaptive Consequences of Dissociation .............................................................................4
Adaptive Advantages of Dissociation ......................................................................................5
Growth Following Trauma .........................................................................................................7
Potential Moderators of Dissociation and Posttraumatic Growth Following Trauma ..........7
Adaptability and Flexibility ......................................................................................................8
Ego-resilience ..........................................................................................................................9
Impulse Control .....................................................................................................................9
Psychological Acceptance .................................................................................................10
Study Aims .............................................................................................................................11
Hypotheses ............................................................................................................................11
Method ....................................................................................................................................12
Participants ............................................................................................................................12
Procedures .............................................................................................................................12
Measures Used in the Present Study ......................................................................................13
Experience of interpersonal violence ..................................................................................13
Dissociative experiences ........................................................................................................13
Posttraumatic stress symptoms ..........................................................................................14
Posttraumatic growth ...........................................................................................................14
Psychological acceptance .....................................................................................................15
Impulse control difficulties ..................................................................................................15
Ego-resiliency ........................................................................................................................15
Results ....................................................................................................................................16
Intercorrelation of Variables ...............................................................................................16
Regression Analyses .............................................................................................................17
Main and moderating effects for posttraumatic stress symptoms ......................................18
Main and moderating effects for posttraumatic growth ......................................................19
Discussion..............................................................................................................21
  Adaptive Potential of Dissociative Experiences..................................................21
  Roles of Ego-Resiliency, Psychological Acceptance, and Impulse Control in Predicting
  Outcome...............................................................................................................22
  Is Dissociation Ever Adaptive? .........................................................................23
  Limitations............................................................................................................25
  Clinical Implications and Future Research Directions.......................................26
References.............................................................................................................30
LIST OF TABLES

1. Descriptive Statistics of Study Variables.................................................................40
2. Intercorrelations of Study Variables........................................................................41
3. Regression Models for predicting Posttraumatic Stress Symptoms and Posttraumatic Growth with Absorption and Ego-Resiliency.........................................................42
4. Regression Models for predicting Posttraumatic Stress Symptoms and Posttraumatic Growth with Absorption and Impulse Control Difficulties............................................43
5. Regression Models for predicting Posttraumatic Stress Symptoms and Posttraumatic Growth with Absorption and Acceptance.................................................................44
6. Regression Models for predicting Posttraumatic Stress Symptoms and Posttraumatic Growth with Amnesia and Ego-Resiliency.................................................................45
7. Regression Models for predicting Posttraumatic Stress Symptoms and Posttraumatic Growth with Amnesia and Impulse Control Difficulties.............................................46
8. Regression Models for predicting Posttraumatic Stress Symptoms and Posttraumatic Growth with Amnesia and Acceptance.................................................................47
LIST OF FIGURES

1. Scatterplots of Dissociation and Posttraumatic Growth……………………………………51
The Capacity to Dissociate: Exploring the Adaptive Potential of Dissociative Experiences

The term *dissociation* has been used to describe a variety of phenomena since the late 19th century (Dalenberg & Paulson, 2009; Holmes et al., 2005). The construct was first defined and systematically studied by Pierre Janet, a French philosopher and psychiatrist (Putnam, 1989; van der Hart & Horst, 1989). Janet used hypnotic techniques to study female patients suffering from hysteria, which was thought to potentially have a traumatic etiology (Ellenberger, 1970; Putnam, 1989). Specifically, Janet believed traumatic events could cause dissociative symptoms (van der Hart & Horst, 1989) and some individuals were more susceptible to dissociation than others (Ray, 1996). While Janet alleged that dissociative phenomena were rarely seen in healthy individuals, later in his career he may have begun to view dissociation as a continuous construct, present to some degree in most individuals (Putnam, 1989). Thus, for many years researchers have noted links between dissociation and trauma, identified similarities between dissociation and hypnotic states, speculated about a genetic basis of dissociation, and recognized dissociative experiences as both pathological and potentially non-pathological. These areas of research remain active and controversial today.

**Definitions of Dissociation**

Researchers have frequently noted the vagueness of the definition of dissociation, attributed in part to the wide range of experiences included in the construct (Dalenberg & Paulson, 2009; Eisen & Carlson, 1998; Holmes et al., 2005; Waller, Putnam, & Carlson, 1996). Dissociation can be generally defined as a “loss of information or control over mental processes that, under normal circumstances, are available to conscious awareness, self-attribution, or control” (Cardeña & Carlson, 2011, p. 251). Cardeña and Carlson (2011) propose a comprehensive definition of dissociation:

Symptoms are characterized by *(a)* a loss of continuity in subjective experience with accompanying involuntary and unwanted intrusions into awareness and behavior (so-called positive dissociation); and/or *(b)* an inability to access information or control mental function or behaviors, manifested as symptoms such as gaps in awareness, memory, or self-identification, that are normally amenable to such access/control (so-called negative dissociation); and/or *(c)* a sense of experiential disconnectedness that may include perceptual distortions about the self or the environment. (p. 251-252)
As a result of the ambiguity of the definition of dissociation, researchers have worked to refine the term. This frequently resulted in efforts to group dissociative experiences into two distinct categories often referred to as “normal” or “nonpathological” and “pathological” dissociation (Dalenberg & Paulson, 2009; Waller et al., 1996). The criteria used to distinguish normal and pathological dissociation vary throughout the literature, but frequently refer to distinctions between experiences of absorption versus experiences of depersonalization, derealization, and amnesia (Bernstein & Putnam, 1986; Dalenberg & Paulson, 2009).

Most researchers recognize dissociation as existing on a continuum, ranging from everyday experiences such as daydreaming to less common experiences typically associated with psychopathology (Bernstein & Putnam, 1986; Carlson, Dalenberg, & McDade-Montez, 2012; Holmes et al., 2005; Ray, 1996). Absorption, at one end of the continuum, is often considered the mildest of dissociative experiences, and refers to intense concentration and cognitive involvement in a narrow range of experience (Butler, 2006). Absorption is highly correlated with hypnotizability, fantasy proneness, and imaginative involvement, and involves an openness to experience (Lynn & Rhue, 1988; Rauschenberger & Lynn, 1995; Roche & McConkey, 1990). Absorption has consistently been found to represent a dimensional construct (e.g., Waller et al., 1996) and has been shown to be normally distributed in the general population (Putnam, 1997; Tellegen & Atkinson, 1974). Furthermore, absorption has been found to be trait-like and there is evidence of a strong genetic component (Morgan, 1973; Tellegen et al., 1988). The idea that dissociation is not inherently pathological and does not necessarily lead to significant distress or impairment is reflected in the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5; American Psychiatric Association [APA], 2013). Common experiences are often included as diagnostic criteria when they occur frequently and disrupt an individual’s functioning (APA, 2013; Carlson et al., 2012).

The other end of the continuum contains more severe dissociative experiences such as depersonalization, derealization, and amnesia. Depersonalization and derealization refer to distortions in perceptions of the self and of one’s surroundings (Carlson et al., 2012). Depersonalization is described a “feeling of unreality or detachment from, or unfamiliarity with, one’s whole self or from aspects of the self” (APA, 2013, p. 302), which may create the feeling of being an outside observer of one’s own thoughts and body (APA, 2013). Experiences of derealization include “a feeling of unreality or detachment from, or unfamiliarity with, the world,
be it individuals, inanimate objects, or all surroundings” (APA, 2013, p. 303). Amnesia refers to gaps in awareness or memory, and may be experienced as losing track of what is happening or blanking out (Carlson et al., 2012).

For over a century, dissociation has been recognized as a response to trauma (Carlson et al., 2012; Ellenberger, 1970; van der Kolk & van der Hart, 1989), and more recent research has concluded that dissociative experiences are in fact related to a history of trauma (Briere, 2006; Carlson et al., 2012; Chu & Dill, 1990; Dalenberg et al., 2012; Dalenberg & Palesh, 2004; Foote, Smolin, Kaplan, Legatt, & Lipschitz, 2006; Irwin, 1999; Thomson, Keehn, & Gumpel, 2009). In particular, a history of physical or sexual abuse is strongly related to dissociative symptoms (Boysan, Goldsmith, CAVUŞ, Kayri, & Keskin, 2009; Foote et al., 2006). Interestingly, most individuals with a trauma history do not report significant dissociative symptoms (Briere, 2006).

Briere (2006) examined the trauma-dissociation relationship in a combined clinical, community, and university sample of 1,326 participants and found clinically significant dissociative symptom scores were highly predictive of a trauma history, however the absence of high dissociation scores did not indicate an absence of trauma history.

**Assessment of Dissociation**

The Dissociative Experiences Scale (DES) was the first validated instrument for assessing dissociative experiences (Bernstein & Putnam, 1986; Dalenberg & Paulson, 2009). The DES was developed to facilitate greater understanding of dissociative phenomena, to serve as a screening instrument for dissociative disorders, and to study the presence of dissociative symptoms in a range of other psychiatric disorders (Bernstein & Putnam, 1986; Carlson & Putnam, 1993). The scale was developed as a trait measure of dissociation with the assumption that dissociative experiences lie on a continuum (Bernstein & Putnam, 1986). The DES is a self-report measure of the number and frequency of dissociative experiences in individuals’ daily lives (Bernstein & Putnam, 1986). The scale inquires about disturbances in memory, identity, awareness, and cognition and experiences of depersonalization, derealization, absorption, and imaginative involvement (Bernstein & Putnam, 1986; Carlson & Putnam, 1993). Most factor analyses have revealed a three-factor solution representing experiences of absorption, depersonalization/derealization, and amnesia (Ross, Joshi, & Currie, 1991; Schwartz & Frischholz, 1991; Stockdale, Gridley, Balogh, & Holtgraves, 2002).
Evidence for Pathological and Nonpathological Subtypes of Dissociation

Waller and colleagues (1996) found evidence for two distinct types of dissociative experiences, nonpathological and pathological experiences. Taxometric analyses revealed that nonpathological dissociation (e.g., absorption and imaginative involvement) measures a dimensional construct while pathological dissociation (e.g., derealization/depersonalization and amnesia), belongs to a latent class (Waller et al., 1996). These analyses indicate that there may be two types of people, those who experience pathological dissociation and those who do not (Waller et al., 1996). The authors developed an eight-item subscale from the DES, which they named the DES-T, to identify taxon members. Importantly, the eight items in the DES-T were representative of the symptoms that defined the dissociative disorders in the DSM-IV and do not include any absorption items (Waller et al., 1996).

Maladaptive Consequences of Dissociation

In 1980, APA included dissociative disorders in the DSM-III. The Dissociative disorders currently include dissociative amnesia, dissociative identity disorder, depersonalization/derealization disorder, other specified dissociative disorder, and unspecific dissociative disorder (APA, 2013). This addition to the DSM triggered a wave of research on dissociation and the development of measures designed to assess the presence of dissociative symptoms and screen for Dissociative Disorders (e.g., Bernstein & Putnam, 1986).

Dissociation has typically been conceptualized as a coping strategy or defense mechanism in the face of traumatic experiences. Extensive research has focused on dissociation as a maladaptive coping strategy and its negative effects are well documented. Dissociation has been found to be predictive of PTSD (e.g., Ozer, Best, Lipsey, & Weiss, 2003). In addition, associations between dissociation and mood disorders (Mulder, Beutrais, Joyce, & Fergusson, 1998), anxiety symptoms (Holtzgraves & Stolldale, 1997; Mulder et al., 1998), suicidality (Maaranen et al., 2005), eating disorders (Everill, Waller, & Macdonald, 1993; McShane & Zirkel, 2008; Waller, Ohanian, Meyer, Everill, & Rouse, 2001), and substance abuse (Dunn, Paolo, Ryan, Van Fleet, 1993) have been reported. Dissociative experiences may also be related to difficulty identifying feelings (Mason, Tyson, Jones, & Potts, 2005) and regulating emotions, which are associated with posttraumatic stress symptoms (PTSS; Tull, Barrett, McMillan, & Roemer, 2007).
Some researchers understand absorption to be normal and benign (Dalenberg & Paulson, 2009; Stockdale et al., 2002) and a few researchers argue that it is not a ‘true’ dissociative experience at all (e.g., Näring & Nijenhuis, 2005). However, Dalenberg and Paulson (2009) assert that not only is absorption a form of dissociation, it is not necessarily benign. Allen, Coyne, and Console (1997) explain, “to be absorbed in one facet of experience is to be detached from every other” (p. 332). Absorption is highly related to psychopathology (Allen et al., 1997; Duckworth, Iezzi, Archibald, Haertlein, & Klink, 2000) and may lead to the loss of memory of traumatic or negative experiences (Dalenberg & Paulson, 2009; Freyd & DePrince, 2001). Absorption has also been found to predict a larger portion of the explained variance in PTSD symptoms compared to other dissociative experiences (Duckworth et al., 2000). Furthermore, the three factors of the DES are highly correlated with each other and individuals who are high in pathological dissociation are almost always high in absorption (Dalenberg & Paulson, 2009). Finally, it is believed that absorption plays a role in the development of pathological dissociation (Butler, Duran, Jasuikaitis, Koopman, & Spiegel, 1996; Loi & Jamieson, 2010). A diathesis-stress model of dissociation proposes that the capacity to dissociate (also conceptualized as absorption or hypnotizability), serves as the diathesis for the development of dissociative symptomatology following stressful situations or conditions (Butler et al., 1996). Overall, there is ample evidence to support the notion that dissociation, as measured by absorption and pathological experiences, can be maladaptive.

**Adaptive Advantages of Dissociation**

The adaptive potential of dissociation has been largely neglected in the literature. However, it is generally accepted that dissociation can be adaptive in the context of trauma where it serves as protection against the impact of overwhelming experiences (Waelde, 2008) by allowing an individual to mentally escape from the distressing situation (Cardeña & Carlson, 2011; Terr, 1991). Dissociation is hypothesized to buffer against stress and negative emotional experiences, reducing the “personal implications of the trauma” (Butler et al., 1996, p. 60). Trauma based models conceptualize dissociation as “a phylogenetically important aspect of the psychobiological response to threat and danger that allows for automatization of behavior, analgesia, depersonalization, and isolation of catastrophic experiences to enhance survival during and in the aftermath of these events” (Dalenberg et al., 2012, p. 551).
While evidence indicates that absorption is not inherently benign (see analysis to follow), the more extreme forms of dissociation are not necessarily pathological either. For example, it is widely recognized that dissociative states are achieved during meditation, religious rituals, and spiritual trances (APA, 2013; Lynn, 2005). Shamanic and possession practices involve extreme forms of dissociation, but are not considered pathological due to cultural norms (Lynn, 2005; Ross, 1996).

Dissociation outside of the immediate context of trauma has rarely been discussed in terms of its potential adaptive functions. However, a number of studies have examined dissociation during stressful and physically demanding conditions. It appears as though dissociation may serve as an adaptive attentional strategy during stressful situations. High dissociators have been found to have greater abilities at divided and focused attention (DePrince & Freyd, 1999; de Ruiter, Phaf, Veltman, Kok, & Van Dyck, 2003). Researchers have also noted the analgesic effects of dissociation. Individuals with chronic pain have reported dissociative experiences such as depersonalization (Duckworth et al., 2000), suggesting that dissociation may provide relief from physical pain (Dalenberg & Paulson, 2009). In addition, individuals experience pain reduction when in hypnotic states (i.e., hypnotic analgesia) (Butler et al., 1996). Studies of the cognitive strategies of athletes have indicated an adaptive function of the use of dissociation. Silva and Appelbaum (1989) studied cognitive strategies employed by Olympic Marathon Trial contestants and found that the top placers used dissociative strategies more during the later stages of a marathon when they felt pain while lower-placing contestants used these strategies earlier and then maintained them for the majority of the race. The top placers reported the use of adaptive cognitive strategies, or shifting between associative and dissociative styles depending on the demands of the race (Silva & Appelbaum, 1989).

Recently, researchers have begun to explore adaptive advantages of dissociation that are not directly related to negative experiences such as trauma, physical pain, or negative emotions. For example, in a study of professional performing artists, dissociative experiences were common and were even endorsed at levels considered pathological (Thomson et al., 2009). Thomson and colleagues (2009) proposed that dissociation may enhance performance and the creative process. Another study assessed dissociation in groups of rhythmic gymnasts, female dancers, and non-athletes and found pathological levels of dissociation in both athletic groups (Thomson, Kibarska, & Jaque, 2011). Findings revealed statistically significant differences
between athletes and non-athletes on individual items such as the ability to ignore pain, feeling like their bodies do not belong to them, and being able to do things with ease that would normally be difficult. It has been suggested that the ability to voluntarily shift in and out of dissociative states may be beneficial for performing artists (Thomson et al., 2009). Thus, dissociation has the potential to be adaptive in a variety of contexts.

**Growth Following Trauma**

Recognition of the potential for positive change following the experience of stressful or traumatic life events has existed for centuries (Tedeschi & Calhoun, 2004). The construct of posttraumatic growth (PTG) refers to positive psychological change experienced as a result of struggling with challenging or difficult life situations (Tedeschi & Calhoun, 2004). Specifically, PTG describes a process in which individuals have surpassed their development and level of functioning prior to the stressful or traumatic event, at least in some areas of their lives (Tedschi & Calhoun, 2004). In other words, PTG is not a return to baseline following a trauma, but rather an experience of improvement “that for some persons is deeply profound” (Tedeschi & Calhoum 2004, p. 4). The experience of traumatic events may challenge individuals’ ways of understanding the world and their place in it. The achievement of PTG may require the shattering of fundamental schemas or core beliefs, ultimately relying on cognitive processing and meaning making following the traumatic experience (Tedeschi & Calhoun, 2004).

Limited research has examined the relationship between dissociation and PTG in individuals with a history of trauma. McCaslin and colleagues (2009) examined the relationships of PTG to dissociative experiences occurring around the time of the traumatic event among Sri Lankan university students. A smooth curve was fit to the data and revealed a quadratic relationship between PTG scores and dissociation scores. Specifically, individuals who experienced moderate levels of dissociation around the time of the traumatic event reported greater posttraumatic growth (McCaslin et al., 2009).

**Potential Moderators of Dissociation and Posttraumatic Growth Following Trauma**

Many efforts have been made to distinguish ‘nonpathological’ from ‘pathological’ dissociation, often resulting in categorization based on factors such as type and severity of dissociative experience (Dalenberg & Paulson, 2009). Instead, Dalenberg and Paulson (2009) suggest the distinction between normal and pathological dissociation may depend upon how it is used. There is limited literature on adaptive advantages of dissociation and what does exist
ranges across fields of study. Overall, dissociation appears to be adaptive when an individual has the ability to voluntarily shift in and out of dissociative states. In theory, the flexible use of dissociation would require the ability to flexibly adapt one’s response and level of control based on situational contexts, control over the implementation of dissociation, and acceptance of unpleasant emotions.

**Adaptability and Flexibility**

The flexible use of dissociation in appropriate contexts would require the ability to adapt based on situational contexts. Research findings indicate that the ability to flexibly adapt and utilize different coping strategies depending on the situation is most beneficial and conversely, the inability to flexibly adapt may be detrimental (Aldao & Noel-Hoeckema, 2012; Hayes et al., 2004). For example, Palm and Follette (2011) studied the relationship between cognitive flexibility (i.e., an individual’s awareness of and willingness to engage in alternative thoughts and behaviors in any given situation) and experiential avoidance in the development of psychological symptoms among 248 women with histories of interpersonal victimization. Results revealed that cognitive flexibility and experiential avoidance were significantly related to PTSD severity and depression. The authors suggest that the inability to think flexibly may lead to increased psychological distress through increasing experiential avoidance (Palm & Follette, 2011).

Additional research on the use of avoidance coping strategies, which may include the use of dissociation, has implied that it is the flexible use of these strategies that determine outcome. For example, researchers have asserted that whether one uses emotional expression or repression is less important for adjustment than the ability to express or suppress emotions depending on the particular context (Mancini & Bonanno, 2006). In a study of resilience among New York City college students following September 11, Bonanno, Papa, Lalande, Westphal, and Coifman (2004) found that the best predictor of adjustment was the ability to flexibly engage in either emotional suppression or expression when told to do so. Similarly, dissociation has been described as a skill or capacity to manipulate attention that requires a degree of mental agility (Allen, 1993).

Research on the adaptive use of dissociation suggests that the ability to flexibly engage in dissociative experiences is related to positive outcomes. For example, Silva and Appelbaum’s (1989) research on marathon runners indicates that it is both the ability to control dissociative
experiences and to adaptively enter into and come out of dissociative states based on situational demands that relates to improved outcome. Furthermore, Thomson and colleagues (2009) found pathological levels of dissociation in performing artists and suggest that through training, individuals in the performing arts may acquire the capacity to regulate dissociative states.

**Ego-resilience.** One way adaptability has been measured is with a trait-like construct called ego-resiliency, which can be conceptualized as the ability to adapt in different contexts and situations. Ego-resiliency reflects the dynamic capacity to flexibly modulate one’s level of control in response to the environmental context (Block & Kremen, 1996). Ego-resiliency is often conceptualized as a stable psychological trait (e.g., Waugh, Fredrickson, & Taylor, 2008) or personality resource that combines several personality attributes (Klohnen, 1996). Individuals with high levels of ego-resiliency are characterized by optimism, a sense of competence, interpersonal warmth, openness to experience, the capacity to initiate activities, and the ability to tolerate ambiguity (Klohnen, 1996). Ego-resiliency is negatively related to depression, anxiety, and self-harm behavior (Philippe, Laventure, Beaulieu-Pelletier, Lecours, & Lekes, 2011). On the other hand, ego-resiliency is positively related to psychological well-being and has been found to predict global adjustment and functioning as well as psychological health (Klohnen, 1996). Furthermore, it has been found to be a positive predictor of resilient adaptation for maltreated children (Cicchetti & Rogosch, 2009) and to mediate the relationship between childhood trauma and symptoms of depression and anxiety (Philippe et al., 2011). Individuals who are highly adaptable or who have high levels of ego-resiliency may possess the ability to use dissociation as an adaptive coping strategy.

**Impulse Control**

The ability to exercise emotional control when distressed may allow for the use of dissociation as an adaptive coping strategy. Impulse control, an aspect of emotion regulation, is the ability to control behavior to behave in a way that is congruent with desired goals when experiencing negative emotions (Gratz & Roemer, 2004). The concept of emotion regulation also includes the ability to recognize and accept emotions and to adaptively use emotion regulation strategies when appropriate (Gratz & Roemer, 2004; Thompson, 1994). Inherent in the concept of emotion regulation is the idea that emotional responses must be flexible and dependent upon situation (Thompson, 1994). Aspects of emotion regulation have been found to be associated with PTG (e.g., Hussain & Bhushan, 2011), while difficulties in emotion regulation are
associated with PTSS (Klemanski, Mennin, Borelli, Morrissey, & Aikins, 2012; Tull et al., 2007). Specifically, difficulties in emotional control have been found to be positively related to PTSS (Tull et al., 2007).

Limited research has explored the relationship between emotion regulation and dissociation, despite similarities in these constructs (Van Dijke et al., 2010). However, there is some evidence indicating that these phenomena are related (Kalill, 2012; Van Dijke et al., 2010). In addition, previous research has indicated that dissociation may be related to psychosomatic self-regulation. For example, correlations between absorption and the regulation of blood pressure and maintenance of adaptive cardiovascular responses to aversive stimuli have been reported (Loi & Jamieson, 2010). Similarly, in a study of marathon runners, Silva and Appelbaum (1989) found that top placers monitored their bodily feedback and exerted effort, allowing them to adaptively employ dissociative strategies when appropriate. Furthermore, some researchers find that dissociative capacities (or processes) can be taught in therapy as strategies to decrease symptoms of anxiety and depression (Bowins, 2012). Bowins (2010) explains that “compared to other psychological defenses, dissociation is unique in that at least milder versions can be invoked voluntarily” (p. 309). Thus, emotional control may be an important factor in allowing the flexible, adaptive use of dissociation in appropriate contexts.

**Psychological Acceptance**

In order for an individual to use dissociation adaptively, he or she must have some level of acceptance of negative emotions; otherwise dissociation may be overused in an attempt to avoid all unpleasant emotions. The acceptance of one’s negative or unpleasant emotions may allow for the adaptive use of dissociation in appropriate contexts. Furthermore, psychological acceptance is imperative in the achievement of PTG. Acceptance can be defined as “the voluntary adoption of an intentionally open, receptive, flexible, and nonjudgmental posture with respect to moment-to-moment experience” (Hayes, Strosahl, & Wilson, 2012, p. 272). Tedeschi and Calhoun (1996) postulate that in order to experience PTG, an individual must have the ability to effectively cope and manage intense negative emotions. Along these lines, the achievement of PTG requires some meaning-making and cognitive processing of the trauma. Hayes, Strosahl, and Wilson (2012) explain, “acceptance involves engaging with and at times even enhancing the rich complexity of one’s emotional reactions as a means of furthering psychological openness” (p. 23). Furthermore, research has found that the flexible
implementation of acceptance is related to less psychopathology (Aldao & Nolen-Hoeksema, 2012).

Research has not directly examined the relationship between psychological acceptance and dissociation. However, one study found that individuals with higher levels of dissociation reported greater ease and clarity in imagining threatening emotions when prompted to do so (Holtgraves & Stockdale, 1997). In addition, mindfulness, “a process of bringing a certain quality of attention to moment-to-moment experience” (Holtgraves & Stockdale, 1997, p. 182), may be related to trait absorption. In a study of people attending yoga studios, absorption had a small but significant direct influence on mindfulness in everyday life, independent of the amount of meditation one had practiced (Holzel & Ott, 2006). Finally, findings of pathological levels of dissociation in artists and athletes support the notion that individuals who use dissociation adaptively might display psychological acceptance. For example, conceptualizing dissociation itself as a potentially unpleasant experience, Thomson and colleagues (2009) postulate that only artists with the ability to tolerate and regulate dissociative experiences remain in training art programs and continue to work professionally. Thus, acceptance of moment-to-moment experience, which includes negative emotions, appears to be important in the flexible use of dissociation to achieve PTG.

**Study Aims**

The aim of the present study was to examine dissociative experiences in individuals with a history of interpersonal violence. Specifically, the relationship between dissociative experiences (i.e., absorption or nonpathological dissociation, and amnesia and depersonalization/derealization or pathological dissociation) and posttraumatic stress symptoms (PTSS) and posttraumatic growth (PTG) was explored. In addition, the present study aimed to explore the potential moderating roles of ego-resiliency, impulse control difficulties, and psychological acceptance in the relationship between dissociative experiences and the two outcomes, PTSS and PTG.

**Hypotheses**

1. Dissociative experiences would predict negative outcome. Specifically, absorption, amnesia, and depersonalization/derealization would each predict higher levels of PTSS.
2. Dissociative experiences would not predict positive outcome. In other words, absorption, amnesia, and depersonalization/derealization would not predict levels of PTG.
3. Impulse control difficulties, ego-resiliency, and psychological acceptance would moderate the relationships between dissociative experiences and both positive and negative outcome. Specifically, higher levels of dissociative experiences in the presence of low impulse control difficulties, high ego-resiliency, and high psychological acceptance were hypothesized to increase the likelihood of PTG and decrease the risk of PTSS. For example, individuals who endorsed high levels of absorption and self-reported high levels of ego-resiliency were hypothesized to demonstrate significantly lower levels of PTSS compared to individuals who were high in absorption and low in ego-resiliency. However, when absorption levels were low, the two groups would not differ significantly in level of PTSS. A similar pattern of moderating effects was predicted for impulse control difficulties and psychological acceptance.

**Method**

**Participants**

Participants for this study were recruited from the undergraduate population at a mid-sized, mid-western university. A total of 1,514 participants have completed and submitted survey measures. From that sample, 162 participants were selected for inclusion in the present study based on self-report of an experience of interpersonal violence as their most traumatic or stressful life experience. The demographics of participants reporting a history of interpersonal violence were as follows: 80% self-identified as female, 81.5% as Caucasian, 6.2% as African American, 2.5% as Asian American, 4.9% as Hispanic, 1.2% as other, 2.5% as Bi- or Multi-Racial, and 1.2% declined to identify. Mean age at the time of survey completion was 18.86 years (range = 18 – 22 years) and family household income median was reported as between $75,000 - $99,999 per year (total sample range = less than $10,000 – over $200,000 per year). 86.4% of participants were in their first or second year at the university, and the remaining participants were upper level students.

**Procedures**

Participants were recruited through an internet-based advertisement for the study, which was accessible only to the students at the university. Participants were compensated for their participation with partial course credit for undergraduate psychology courses at the university. Participants completed the informed consent process in person with research staff, and the survey measures were completed online, from home, and at the students’ convenience. The survey was estimated to take between 60 and 90 minutes to complete, and responses were de-identified at
submission. Measures used in the present study were part of a larger, cross-sectional study. Survey measures assessed a range of coping strategies, emotion regulation strategies, dispositional measures, positive and negatives outcomes, and factors related to the trauma appraisal and coping following a stressful life experience. A selection of these measures was used for the present study.

**Measures Used in the Present Study**

**Experience of interpersonal violence.** Participants were asked to identify the most stressful or traumatic event they had experienced, and were given no limitations on space in which to describe this event. This question had been previously used by Williams, Davis, and Millsap (2002) with the Cognitive Processing of Trauma Scale, a measure in the larger study. The item read as follows: "Please take a moment and think of the most upsetting and traumatic experiences or times of your life. They can be experiences about which you feel worried, guilty, ashamed or upset. They can include difficult events (e.g., parents’ divorce, rape, an injury or serious illness, a break-up with romantic partner) or difficult times (e.g., transition to college). They can be things that happened in the past or things that are happening now. Now, think about which of these events or experiences is the most upsetting, stressful, or traumatic for you. Please describe the event or experience here." Events were coded for content by research staff. The research team developed a manual for coding these events, which included a range of experiences such as loss, interpersonal violence, family disruption, relationship difficulties, physical illness or injury, and more normative life events (e.g., transition to college and academic or athletic performance difficulties). At least one graduate student and one undergraduate research assistant coded all events, and discrepancies were resolved upon discussion. Inter-rater reliability was calculated periodically throughout the process and ranged between .82 and .92. Only those participants who described an experience of interpersonal violence (including physical and sexual abuse or assault, emotional abuse, bullying, and childhood maltreatment) were included in the present study (N = 162).

**Dissociative experiences.** The DES-II is a 28-item, self-report measure assessing the number and frequency of dissociative experiences an individual has on a daily basis (Bernstein & Putnam, 1986). The original scale utilized a visual analogue response scale and participants indicate responses by making a slash across a 100mm line, numerically anchored at each end (Bernstein & Putnam, 1986). The DES has since been modified (DES-II) so that answer options
fall on an eleven point scale (0% - 100%) and respondents report the percent of time they experience each item (Carlson & Putnam, 1993). The DES has good test-retest reliability and internal reliability (Bernstein & Putnam, 1986; Dubester & Braun, 1995; Frischholz et al., 1990), and Cronbach’s alpha for this sample was $\alpha = .93$. The scale also has good concurrent and criterion-related validity (Carlson et al., 1993; Frischholz et al., 1990). A total DES-II score is calculated by finding an average of the 28 items (Dubester & Braun, 1995). While scores above 25 or 30 have been recommended for identifying potentially pathological levels of dissociation (Putnam et al., 1996), others argue that researchers should refrain from using fixed DES threshold scores to obtain dissociative disorder prevalence rates (Waller & Ross, 1997). Three subscales (absorption, depersonalization/derealization, and amnesia) have been identified through factor analysis (Ross et al., 1991; Schwartz & Frischholz, 1991; Stockdale et al., 2002). For the present study, composite scores for the three subscales were calculated using the factors derived by Stockdale and colleagues (2002). Cronbach’s alpha for the absorption subscale was $\alpha = .89$, for the amnesia subscale was $\alpha = .84$, and for the depersonalization/derealization subscale was $\alpha = .89$.

**Posttraumatic stress symptoms.** The PTSD Checklist (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993) is a 17-item, self-report measure assessing PTSD symptoms in the *DSM-IV*. Participants were asked to indicate the degree of distress associated with each symptom over the past 30 days on a 5-point Likert scale (1 = not at all, 5 = extremely). PTSD severity scores are calculated by summing responses to the 17 items (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996). The PCL has good psychometric properties and is correlated highly with the Clinician Administered PTSD Scale (CAPS; Blanchard et al., 1996). The PCL has been found to have good internal consistency ($\alpha = .94$) (Weathers et al., 1993). Use of the PCL has been demonstrated to be appropriate in samples of college students (Harned, 2004; Tull & Roemer, 2003). Cronbach’s alpha for the PCL in this sample was $\alpha = .92$.

**Posttraumatic growth.** The Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996) is a 21-item, self-report measure assessing the degree of PTG experienced. Participants were asked to indicate the degree to which each item changed as a result of a stressful or traumatic event, on a 6-point Likert scale ranging from 0 (*no change*) to 5 (*great change*). There are 5 subscales that correspond to the following: new possibilities, relating to others, spiritual change, personal strength and appreciation of life. The total score was calculated
by summing all 21 items. Tedeschi and Calhoun (1996) report internal consistency ($\alpha = .90$) and 2-month test-retest stability ($r = .71$). Cronbach’s alpha for the PTGI in this sample was $\alpha = .94$. Importantly, the PTGI does not relate to social desirability (Tedeschi & Calhoun, 1996).

**Psychological acceptance.** The Acceptance and Action Questionnaire (AAQ; Hayes et al., 2004) is a 9-item self-report measure. The AAQ has demonstrated adequate criterion-related, predictive, and convergent validity (Bond & Bunce, 2003; Hayes et al., 2004). The AAQ can be scored to obtain a measure of experiential avoidance or psychological acceptance. For the purposes of the present study, the measure was scored to reflect levels of acceptance. Acceptance has been described to “involve the active and aware embrace of those private events occasioned by one’s history without unnecessary attempts to change their frequency or form” (Hayes, Luoma, Bond, Masuda, & Lillis, 2006, p. 7). Cronbach’s alpha for the AAQ in this sample was $\alpha = .66$.

**Impulse control difficulties.** Impulse Control Difficulties were assessed using a subscale of the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). The DERS is a 36-item, self-report measure that assesses an individual’s level of difficulty in emotion regulation. Participants rated each item on a 5-point Likert Scale (1 = almost never, 5 = almost always) indicating how often each item applies to them. The DERS yields a total score of overall difficulties in emotion regulation in addition to six subscale scores (Nonacceptance of Emotional Responses, Difficulties Engaging in Goal-Directed Behavior, Impulse Control Difficulties, Lack of Emotional Awareness, Limited Access to Emotion Regulation Strategies, and Lack of Emotional Clarity). The DERS has been found to have good test-retest reliability ($\rho_I = .88$) (over a period of 4 to 8 weeks) and adequate construct and predictive validity (Gratz & Roemer, 2004). The Impulse Control Difficulties factor consists of items 3, 14, 19, 24, 27, and 32 and assesses one’s ability to control behavior when experiencing negative emotions in order to behave in a way that is congruent with desired goals (e.g., “When I’m upset, I become out of control”, “When I’m upset, I feel like I can remain in control of my behaviors”). Cronbach’s alpha for the Impulse Control Difficulties subscale of the DERS in this sample was $\alpha = .81$.

**Ego-resiliency.** The Ego-Resiliency Scale (ER89; Block & Kremen, 1996) is a 14-item self-report measure assessing the ability to adapt levels of control based on environmental context and has been used to measure trait resilience. Participants are instructed to indicate how true each particular statement is for them on a 4-point Likert scale (1 = does not apply at all, 4 =
applies very strongly). Sample items include “I enjoy dealing with new and unusual situations”, “My daily life is full of things that keep me interested”, and “I get over my anger at someone reasonably quickly”. The ER89 has been shown to be a valid measure of trait resilience, demonstrated by high correlations with self and observer ratings of adaptability to life events (Block & Kremen, 1996; Klohnen, 1996). Individuals who score high on the scale are described as “personally secure and vital individual[s] who savor being”, recovery quickly from stressful life events, and are curious about new experiences (Block & Kremen, 1996, p. 357). Individuals who score high on this scale are more likely to have higher levels of self-confidence and to experience positive affect than individuals with lower levels of ego-resiliency (Block & Kremen, 1996; Klohnen, 1996). Reliability and validity of the ER89 are well established in the literature (Klohnen, 1994). Block and Kremen (1996) report an internal consistency of .76, which is similar to the internal consistency obtained for this sample, α = .81.

**Results**

A Missing Value Analysis (MVA; SPSS 2012) was used to determine the pattern of the missing data. According to Little’s MCAR test (Little & Rubin, 1985), data were consistent with a pattern of missing completely at random, χ² (9218) = 9075.328, p = .85. Participants missing 10% or more of a measure were removed from analyses using this measure due to an inability to reliably impute the remaining variables. After accounting for missing data, each measure had sufficient data from between 147 and 156 participants. For the regression analyses, N ranged between 143 and 152, depending on the variables included in the model. Missing data were singly imputed at the scale and interaction level using the expected maximization algorithm with 25 iterations (Graham, 2009; Little & Rubin, 1987).

All study variables were examined for statistical normality. All variables with the exception of the DES subscales of amnesia and depersonalization/derealization fulfilled the statistical assumption of normality. Consistent with previous findings, amnesia and depersonalization/derealization were positively skewed (Duckworth et al., 2000; Waller & Ross, 1997). In order to meet the statistical assumption of normality, both variables were log transformed.

**Intercorrelation of Variables**

Table 1 contains the means, standard deviations, and ranges for all study variables. Pearson correlations were calculated for these variables (see Table 2). The two outcomes, PTG
and PTSS, were positively correlated with each other (r = .24). Each of the predictor variables was significantly correlated with PTSS. PTSS was positively correlated with the three types of dissociation (absorption, amnesia, and depersonalization/derealization) and with difficulties in impulse control (r values ranging from .34 -.43). Ego-resiliency and acceptance were negatively correlated with PTSS (r = -.20 and r = -.53, respectively). Ego-resiliency was the only predictor variable that was correlated with the positive outcome of PTG (r = .35). In addition, the three types of dissociation were all positively correlated with each other (r values ranging from .68 -.75). All types of dissociation were positively correlated with impulse control difficulties (r values ranging from .24 -.33). Absorption and depersonalization/derealization were negatively correlated with acceptance (r = -.21 and r = -.20, respectively). Ego-resiliency and acceptance were positively correlated (r = .33), and ego-resiliency and acceptance were both negatively correlated with impulse control difficulties (r = -.23 and r = -.40, respectively).

The present study considered the possibility of nonlinear relationships between variables, given previous research evidence of a curvilinear relationship between dissociation and PTG (e.g., McCaslin et al., 2009). Scatterplots of the bivariate correlations between PTG and the three types of dissociation (i.e., absorption, amnesia, and depersonalization/derealization) were inspected to determine if a curvilinear relationship was present (see Figure 1). Given the skew of amnesia and depersonalization/derealization, the scatterplots reflects the log transformed scores for those variables. Based on the scatterplots, none of the relationships between PTG and dissociation appeared to be curvilinear. Therefore, linear regressions were used for the following analyses.

**Regression Analyses**

Data were analyzed with the three types of dissociation, ego-resiliency, psychological acceptance, and emotion regulation difficulties as independent variables, and PTSS and PTG as dependent variables. Hierarchical multiple regression analyses were used to examine main and moderating effects of dissociation, ego-resiliency, acceptance, and impulse control difficulties. Scores for the three types of dissociation, ego-resiliency, acceptance, and impulse control difficulties were mean centered and then interaction terms were created. In step one of the hierarchical regressions, one of the types of dissociation and either ego-resiliency, acceptance, or impulse control difficulties were entered as independent variables. In step two, the two-way interaction between dissociation type and the other predictor variable (i.e., ego-resiliency,
acceptance, or impulse control difficulties) was entered. Nine hierarchal regression analyses were conducted for each of the two outcome variables, PTSS and PTG. Tables 3 – 11 display statistical results from the regression analyses.

**Main and moderating effects for posttraumatic stress symptoms.** PTSS were predicted with a number of different models. Three models with absorption were used to examine potential moderators of the relation between absorption and PTSS. One model used absorption, ego-resiliency, and the interaction term to predict increased PTSS (total variance accounted for = 19%; see Table 3). Absorption and ego-resiliency both emerged as significant predictors of PTSS, such that higher levels of absorption were predictive of higher levels of PTSS and higher levels of ego-resiliency were predictive of lower levels of PTSS. The interaction term did not emerge as a significant predictor. Increased PTSS were also predicted with a model using absorption, impulse control difficulties, and the interaction term (total variance accounted for = 27%). Main effects for absorption and impulse control difficulties were significant, but the interaction term was not a significant predictor of PTSS (see Table 4). Results of this model revealed that higher levels of absorption and higher levels of difficulties in impulse control both predicted higher levels of PTSS. A third model with absorption, acceptance, and the interaction term was used to predict increased PTSS (see Table 5). The full model accounted for 39% of the variance in PTSS. Absorption and acceptance both emerged as significant predictors of PTSS, but the interaction term was not a significant predictor. Higher levels of absorption predicted higher levels of PTSS, while higher levels of acceptance predicted lower levels of PTSS.

Three models with amnesia were also used to predict PTSS. A model with amnesia, ego-resiliency, and the interaction term was used to predict increased PTSS (total variance accounted for = 17%; see Table 6). Amnesia and ego-resiliency both emerged as significant predictors of PTSS, but the interaction term was not a significant predictor. Results revealed that higher levels of amnesia were predictive of higher levels of PTSS, and high levels of ego-resiliency were predictive of lower levels of PTSS. Increased PTSS were predicted using another model with amnesia, impulse control difficulties, and the interaction term (total variance accounted for = 25%; see Table 7). Results of the regression analysis revealed amnesia and impulse control difficulties as significant predictors of PTSS, such that higher levels of amnesia and impulse control difficulties were both predictive of higher levels of PTSS. However, the interaction term
did not emerge as a significant predictor. A third model with amnesia, acceptance, and the interaction term was also used to predict PTSS (total variance accounted for = 37%; see Table 8). Amnesia and acceptance both emerged as significant predictors, but the interaction term was not a significant predictor of PTSS. Higher levels of amnesia were predictive of higher levels of PTSS, and higher levels of acceptance were predictive of lower levels of PTSS.

Finally, PTSS were predicted using three models with depersonalization/derealization. A model with depersonalization/derealization, ego-resiliency, and the interaction term predicted 22% of the variance in PTSS (see Table 9). In the model, depersonalization/derealization, ego-resiliency, and the interaction term all emerged as significant predictors of PTSS. The interaction between depersonalization/derealization and ego-resiliency accounted for a significant proportion of the variance in PTSS such that depersonalization/derealization was more strongly predictive of PTSS at higher levels of ego-resiliency. The first step of the regression model accounted for 20% of the variance, and the second step with the inclusion of the interaction term accounted for 2% additional variance, \( b = .53, t = 2.06, p = .04 \). Examination of the simple slopes revealed that depersonalization/derealization was associated with PTSS at high \( b = .83, t = 5.16, p < .001 \), mean \( b = .60, t = 5.39, p < .001 \), and low levels of ego-resiliency \( b = .37, t = 2.37, p = .019 \). PTSS were also predicted with a model using depersonalization/derealization, impulse control difficulties, and the interaction term (total variance accounted for = 27%; see Table 10). Depersonalization/derealization and impulse control difficulties emerged as significant predictors, but the interaction term did not emerge as a significant predictor of PTSS. Higher levels of depersonalization/derealization and impulse control difficulties were both predictive of higher levels of PTSS. Lastly, a model with depersonalization/derealization, acceptance, and the interaction term was used to predict increased PTSS (see Table 11). The full model accounted for 40% of the total variance in PTSS. The regression analysis revealed significant main effects for depersonalization/derealization and acceptance, such that higher levels of depersonalization/derealization were predictive of higher levels of PTSS and higher levels of acceptance were predictive of lower levels of PTSS. However, the interaction term was not a significant predictor of PTSS.

**Main and moderating effects for posttraumatic growth.** Potential moderators of the relation between dissociation and PTG were explored with different models, three models for each type of dissociation. A model with absorption, ego-resiliency, and the interaction term was
used to predict PTG (see Table 3). The full model accounted for 14% of the total variance in PTG. Ego-resiliency emerged as the only significant predictor of PTG, such that higher levels of ego-resiliency were predictive of higher levels of PTG. A second model with absorption, impulse control difficulties, and the interaction term was used to predict PTG (total variance accounted for = 5%; see Table 4). Absorption and impulse control difficulties did not emerge as significant predictors of PTG. However, the interaction between absorption and impulse control difficulties accounted for a significant proportion of the variance in PTG, such that absorption was only associated with PTG at high levels of difficulties in impulse control. The first step of the regression model accounted for 2% of the variance, and the inclusion of the interaction term accounted for 3% additional variance, ($b = .21, t = 2.30, p = .023$). Absorption was only associated with PTG at high ($b = .24, t = 2.66, p = .009$) levels of impulse control difficulties. A third model with absorption, acceptance, and the interaction term was used to predict PTG (see Table 5); however, the model did not predict a significant proportion of the variance in PTG.

Three models with amnesia were also used to predict increased PTG. First, PTG was predicted with a model using amnesia, ego-resiliency, and the interaction term (see Table 6). The full model accounted for 14% of the total variance in PTG. Amnesia and ego-resiliency both emerged as significant predictors of PTG, but the interaction term was not a significant predictor. Results revealed that higher levels of amnesia were predictive of higher levels of PTG, and higher levels of ego-resiliency were also predictive of higher levels of PTG. Increased PTG was predicted using another model with amnesia, impulse control difficulties, and the interaction term (see Table 7); however, the model did not predict a significant proportion of the variance in PTG. A third model with amnesia, acceptance, and the interaction term was also used to predict PTG (see Table 8), but did not predict a significant proportion of the variance in PTG.

Finally, PTG was predicted using three models with depersonalization/derealization. A model with depersonalization/derealization, ego-resiliency, and the interaction term predicted 12% of the variance in PTG (see Table 9). In the model, only ego-resiliency emerged as a significant predictor of PTG, such that higher levels of ego-resiliency were predictive of higher levels of PTG. A model using depersonalization/derealization, impulse control difficulties, and the interaction term was also used to predict PTG (see Table 10); however, the model did not predict a significant proportion of the variance in PTG. Lastly, a model with
depersonalization/derealization, acceptance, and the interaction term was used to predict increased PTG (see Table 1), but did not predict a significant proportion of the variance in PTG.

Discussion

The present study examined the relationships between three types of dissociative experiences (i.e., absorption, amnesia, and depersonalization/derealization), and PTSS and PTG in a sample of young adults with a history of interpersonal violence. Consistent with hypotheses and previous literature (e.g., Ozer et al., 2003), all three types of dissociation consistently predicted PTSS, while none of the dissociative experiences were predictive of PTG, with the exception of amnesia. However, amnesia predicted PTG only in the presence of ego-resiliency, and at the bivariate level, amnesia was not associated with PTG. Not surprisingly, the three types of dissociative experiences were all highly correlated with each other, which is consistent with findings that nonpathological dissociation or absorption is highly correlated with pathological dissociation, or amnesia, depersonalization, and derealization (Dalenberg & Paulson, 2009; Levin & Spei, 2004). These results highlight the complexity in defining and distinguishing these experiences. In addition, these findings provide further evidence for the claim that absorption is not necessarily benign (Dalenberg & Paulson, 2009). Research has found that absorption is highly related to psychopathology (Allen et al., 1997; Duckworth et al., 2000) and has been found to predict a larger portion of the explained variance in PTSS compared to other dissociative experiences (Duckworth et al., 2000). In this sample, absorption explained a larger portion of the variance in PTSS than amnesia, which is often considered a more severe form of dissociation and is more closely tied to PTSS described in the DSM-5 (APA, 2013). These findings highlight the similar maladaptive consequences of absorption, depersonalization, derealization, and amnesia, all of which confer risk for negative outcome following the experience of a traumatic event.

Adaptive Potential of Dissociative Experiences

The present study also aimed to examine the adaptive potential of dissociative experiences. Researchers generally agree that in the context of trauma, dissociation can be adaptive, serving to protect against the impact of overwhelming experiences (Waelde, 2008). Outside of the immediate context of trauma, dissociation is rarely discussed in terms of its potential adaptive functions. However, several studies have found evidence for the adaptive potential of dissociation, but it remains unclear for whom and under what circumstances
dissociative experiences can be adaptive. Based on this limited body of research, dissociation appears to be adaptive when an individual with some level of acceptance of unpleasant emotions is able to voluntarily shift in and out of dissociative states. In an attempt to further understanding regarding the adaptive potential of dissociative experiences, three variables capturing the ability to flexibly adapt one’s response and level of control based on situational contexts, control of behaviors when distressed, and acceptance of unpleasant emotions (ego-resiliency, impulse control, and psychological acceptance, respectively) were examined as moderators in the relation between dissociative experiences and outcome (i.e., PTSS and PTG). Results of this study did not support hypotheses that characteristics such as ego-resiliency, impulse control, and psychological acceptance were associated with the flexible use of dissociation, and ultimately allowed dissociation to be adaptive among a sample of individuals who had histories of interpersonal violence. However, two significant interactions emerged, acting in unexpected ways. Ego-resiliency moderated the relation between depersonalization/derealization and PTSS, but not in the expected direction. In the present study, depersonalization/derealization predicted increases in PTSS, regardless of an individual’s level of ego-resiliency. However, the magnitude of this relationship appeared to increase as ego-resiliency increased. Results also revealed that impulse control difficulties moderated the relation between absorption and PTG. Contrary to hypotheses, results indicated that individuals with high impulse control difficulties reported increasing experiences of PTG as the use of absorption increased. On the other hand, increases in experiences of absorption did not predict reported levels of PTG for those with better impulse control (i.e., a greater ability to control behavior when distressed). These two findings are in stark contrast to the literature and given the number of analyses conducted in the present study, these may be spurious findings.

**Roles of Ego-Resiliency, Psychological Acceptance, and Impulse Control in Predicting Outcome**

The moderators examined in this study did play an important role in predicting outcome. Ego-resiliency and psychological acceptance appear to be protective factors for individuals with a history of IPV. Results revealed that higher levels of ego-resiliency and acceptance were predictive of lower levels of PTSS. This is consistent with prior research findings that the use of acceptance is associated with lower levels of PTSS (Silver, Holman, McIntosh, Poulin, & Gil-Rivas, 2002) and research indicating that the ability to flexibly adapt and utilize different coping
strategies depending on the situation is most beneficial (Aldao & Noel-Hoeksema, 2012; Hayes et al., 2004). Conversely, experiential avoidance and the inability to flexibly adapt were related to increases in PTSS (Palm & Follette, 2011). Shenk, Putnam, and Noll (2012) examined mediators of the relationship between child maltreatment and PTSD symptoms in a sample of female adolescents with a substantiated child maltreatment history. Results indicated that the more maltreated individuals engaged in experiential avoidance, the more PTSD symptoms they reported. The authors suggested that maltreated individuals who do not engage in experiential avoidance, or who engage in psychological acceptance, may be less likely to develop PTSD symptoms (Shenk, Putnam, & Noll, 2012).

Previous research has suggested that adaptability, or the ability to flexibly utilize different coping strategies, is related to adjustment following trauma (Bonanno et al., 2004). In addition, ego-resiliency has been found to be a positive predictor of resilient adaptation for maltreated children (Cicchetti & Rogosch, 2009). However, research had not previously explored the role that ego-resiliency plays in the development of PTG following trauma. In the present study, ego-resiliency emerged as a promotive factor in the development PTG.

Impulse control difficulties consistently predicted PTSS, which is consistent with previous research indicating that emotion regulation difficulties are associated with PTSS (Klemanski et al., 2012; Tull et al., 2007). This finding suggests that improvements in the ability to control behaviors when upset may be beneficial in reducing the severity of PTSS among individuals with a history of IPV.

While ego-resiliency, psychological acceptance, and impulse control predicted outcome and emerged as protective factors in the development of PTSS, they did not buffer against problems associated with use of dissociative coping processes, nor did they allow the adaptive use of dissociation. However, these findings contribute to the literature on individual difference variables that are associated with growth and protect from distress following IPV. Individuals differ in how they respond to traumatic events and previous research has demonstrated that these differences play an important role in determining outcome.

**Is Dissociation Ever Adaptive?**

Overall, there was no evidence for the adaptive potential of dissociation in this sample. Results indicated that in the context of IPV, excessive use of dissociation was not associated with positive outcomes. The present study differed from prior research that has found evidence for the
adaptive use of dissociation in several important ways. Prior research providing this evidence has used nonclinical samples that have not been selected based on a trauma history. For example, Silva and Applebaum (1989) studied Olympic Marathon contestants and found that the flexible use of dissociative strategies were beneficial for those who achieved the top places in an Olympic Marathon. Other researchers have studied gymnasts, dancers, and professional performing artists (Thomson et al., 2009; Thomson et al., 2011), none of which were selected based on trauma history. The experience of trauma is strongly associated with dissociation, and interpersonal trauma is more strongly associated with dissociation than non-interpersonal trauma (e.g., Dalenberg & Palesh, 2004; Lilly, 2011). Therefore, levels of dissociation reported by participants in the present study may be higher than those found in samples not selected based on trauma history. In fact, in this sample, a number of participants reported levels of dissociation on the DES-II above 25, a score that has been recommended for identifying potentially pathological levels of dissociation (Putnam et al., 1996). Approximately 11% and 13% of participants received scores of 25 or higher on the amnesia and depersonalization/derealization subscales, respectively. Taken together, the capacity to dissociate may be adaptive for some people; however, following the experience of interpersonal trauma, these dissociative abilities may develop into dissociative pathology, no longer conferring benefit (Butler et al., 1996; de Ruiter, Elzinga, & Phaf, 2006).

Examination of previous studies supporting the adaptive potential of dissociation reveals substantial differences in the measures used to assess dissociation. In their study of marathon runners, Silva and Applebaum (1989) used multiple-choice questions from the Running Style Questionnaire, which required participants to indicate the percentage of time during various segments of the marathon that they used an associative strategy (attended to bodily functions) versus a distractive or dissociative strategy. The DES-II used in the present study assesses the number and frequency of dissociative experiences in individuals’ daily lives (Bernstein & Putnam, 1986). Unlike the measures used in the studies previously mentioned, the DES-II does not inquire about the use of dissociation in a specific context.

While some research has found evidence for adaptive advantages of dissociation, the outcomes examined in these studies were quite different from the outcomes in the present study. Previous research has examined the adaptive use of dissociative coping processes in specific populations for a specific purpose, such as control of pain or to enhance performance, rather than
the effect that reliance on dissociative coping processes might have on psychological outcomes. The present study explored the relation between dissociation and both distress symptoms and growth following IPV. Review of prior literature reveals no evidence of a benefit of dissociation with regard to psychological symptoms or outcomes related to psychological functioning. These studies did not explore dissociation as a protective factor against negative psychological outcome, but rather examined positive effects of dissociation in entirely unrelated domains. For example, Thomson and colleagues (2009) compared DES-II scores of performing artists who generate work such as choreographers, writers, and composers to those who interpret work such as actors, dancers, and directors, and proposed that dissociation may enhance performance and the creative process. In the investigation of the adaptive potential of dissociation, the outcome of interest is tremendously important. Evidence that dissociation can be adaptive in specific performance contexts does not address the issue of whether use of such processes promotes psychological health and general well-being following traumatic experiences. It is quite possible that the use of dissociation is adaptive in specific, time-limited contexts, but not beneficial as an enduring way of coping with the aftermath of traumatic experiences that impact general adaptive functioning and psychological well-being.

Limitations

The present study had a number of limitations. Consistent with previous studies utilizing the AAQ (e.g., Hayes et al., 2004), the internal consistency for this measure of psychological acceptance was weak ($\alpha = .66$). Nonetheless, the AAQ is a widely used measure that has been shown to be useful in predicting a range of outcomes (e.g., depression, anxiety, job satisfaction, and treatment dropout) and has been found to moderate the effect of treatment (Bond et al., 2011). In addition, the heterogeneity of IPV experiences described by participants, which varied in recency, chronicity, and severity, limits generalizability of the study results. The generalizability of results is also limited by the homogeneity of the primarily Caucasian, predominantly female, college student sample coming from middle- to upper-middle class socioeconomic backgrounds. It is important to replicate these findings in samples more inclusive of men with histories of interpersonal violence and among individuals from a broader range of ethnic, racial, and social class backgrounds. Given that this was not a clinical sample, severity of dissociative experiences and PTSS was somewhat limited. DES-II total scores of 25 or 30 have been recommended as cutoffs for identifying potentially pathological levels of dissociation.
In the present sample, the mean DES-II total score was approximately 21 ($SD = 13.6$), which is similar to total scores previously found among samples of female sexual abuse survivors ($M = 19.4, SD = 15.5$; Anderson et al., 1993), psychiatric outpatients ($M = 20.9, SD = 18.7$; Foote et al., 2006), and some undergraduate student samples (e.g., $M = 23.8, SD = 14.1$; Frischholz et al., 1990). Approximately 30% ($N = 49$) obtained a DES-II total score of greater than or equal to 25, and 22% ($N = 35$) obtained DES-II total scores greater than or equal to 30. A history of interpersonal violence, such as physical or sexual abuse, is strongly related to dissociative experiences (Boysan et al., 2009; Foote et al., 2006). However, most individuals with a trauma history do not report significant dissociative experiences (Briere, 2006). Thus, it is not surprising that the severity of dissociative experiences was limited in this study. With regard to PTSS, approximately 30% ($N = 43$) of participants had a total PCL score greater than or equal to 50, a previously suggested cutoff score for identifying individuals with a diagnosis of PTSD (Weathers et al., 1993). This suggests that approximately 30% of participants may have met diagnostic criteria for PTSD. The mean PCL score for this sample was 40.58 ($SD = 14.63$), with a range of 17 to 85, out of a possible maximum score of 85. Previous research has identified similar scores for undergraduates reporting having experienced traumatic events ($M = 40.03, SD = 17.30$; Tull et al., 2007), and lower scores for general undergraduate student samples (e.g., $M = 29.4, SD = 12.9$; Ruggiero, Del Ben, Scotti, & Rabalais, 2003), and higher scores for samples of individuals with PTSD (e.g., motor vehicle accident victims; $M = 60.0, SD = 9.4$; Blanchard et al., 1996).

**Clinical Implications and Future Research Directions**

Due to the fact that this was not a clinical sample, future research is needed to replicate this study with a sample with a wider range of dissociative experiences and more significant levels of PTSS. However, the results of the present study indicate that for college-aged individuals with a history of IPV, the use of any type of dissociation (e.g. absorption, amnesia, depersonalization/derealization) was not beneficial for increasing growth or reducing PTSS. Future research should explore the potentially adaptive use of dissociation in a general population sample (i.e., one not selected for trauma history) or in a sample of individuals who have experienced a non-interpersonal trauma. It is conceivable that the adaptive employment of dissociation is only possible at lower levels of dissociation or following traumas that are not relational in nature. A general sample might demonstrate this adaptive potential as these
individuals have been found to report lower levels of dissociation compared to those with an interpersonal trauma history (Boysan et al., 2009; Chu & Dill, 1990; Foote et al., 2006). Furthermore, if experiences of trauma do in fact change the nature of dissociation from an adaptive capacity to a pathological experience, it may be useful to study a sample of individuals with no trauma history.

Future research may also benefit from the use of measures that specifically tap into the ability to intentionally shift in and out of dissociative states. The moderators in the present study were not specifically focused on an individual’s ability to control the flexible implementation of dissociation in a particular context. Unfortunately, such a measure has not yet been developed.

The results of this study highlight the benefits of increasing psychological acceptance, enhancing adaptability or the ability to flexibly adapt based on situational context, and increasing the ability to exercise behavioral control when distressed. Thus, specific treatment approaches targeting these outcomes may be particularly beneficial for individuals who have experienced IPV. Broadly, mindfulness- and acceptance-based behavioral approaches to treatment such as Acceptance and Commitment Therapy (ACT; Hayes et al., 2012) and Dialectical Behavioral Therapy (DBT; Linehan, 1993a) aim to achieve these goals by focusing on modifying clients’ relationships with internal experiences. Mindfulness is a construct drawn from Buddhist traditions and refers to “an openhearted, moment-to-moment, non-judgmental awareness” (Kabat-Zinn, 2005, p. 24). The use of mindfulness in therapy typically focuses on awareness of thoughts and feelings, without judgment or attempts to control them (Roemer & Orsillo, 2009). Therefore, mindfulness-based practices are often used to promote acceptance of internal experiences and decrease avoidance (Roemer & Orsillo, 2009). Mindfulness strategies can be used to help individuals respond with increased flexibility to emotion experiences (Follette, Palm, & Rasmussen Hall, 2004). This ability to flexibly adjust emotion regulation strategies based on situational context is an important aspect of emotion regulation (Thompson, 1994), and mindfulness can be used to help in the development of emotion regulation skills (Linehan, 1993a). Specific mindfulness- and acceptance-based behavioral approaches provide a range of strategies for enhancing psychological acceptance, flexibility, and emotion regulation in therapy. Roemer and Orsillo (2009) suggest teaching multiple methods of cultivating mindfulness skills so that clients can choose to utilize methods that work best for them. DBT includes psychoeducational modules that are designed to enhance mindfulness skills, distress tolerance
skills (i.e., the ability to tolerate and accept distress skillfully), and emotion regulation skills (Linehan, 1993b). ACT utilizes exercises in defusion (i.e., flexible distancing from literal meaning of cognitions) and acceptance to cultivate a stance of voluntary cognitive flexibility and increase awareness in the present moment (Hayes et al., 2012). Many approaches to treatment incorporate both in-session and between-session mindfulness exercises, such as formal breathing exercises and exercises involving awareness of emotions (Roemer & Orsillo, 2009).

Further research is needed to better understand the use of dissociation among individuals who have experienced traumas of an interpersonal nature and the purpose it is serving so that clinical interventions can be tailored to address these needs. Participants for the present study were selected based on their history of relational traumas. Those who utilize dissociation following this type of trauma may be using it in the service of altering an unbearable reality, and for some, this may have become the predominant coping strategy. More research is needed to expand our understanding of the role of relational factors and specific types of relational traumas in the etiology, phenomenology, and course of dissociation over the lifespan. We need to better understand why individuals who experience IPV exhibit a range of responses, and why only some individuals engage in the maladaptive use of dissociation. In addition, research would benefit from an increased understanding of dissociation in non-traumatized individuals. There is a need for a greater understanding about vulnerability factors that lead to the maladaptive use of dissociation as well as factors leading to or allowing for the adaptive use of dissociation. Given the available evidence for the adaptive potential of dissociation, it is also important to understand specific contexts and domains in which dissociation can be adaptive. For example, it is possible that the capacity to dissociate is beneficial in some situational contexts such as athletic performance, but not for enhancing psychological functioning. In addition, the distinction between pathological and nonpathological dissociation warrants further examination. As argued by Dalenberg and Paulson (2009), a more accurate distinction between pathological and nonpathological dissociation may be made based on how dissociation is used, rather than distinguishing these constructs based on type of dissociative experience. This distinction suggests that assessments of dissociation need to be more dynamic and context sensitive to allow for this more complex understanding. Prolonged reliance on dissociative coping processes of any type may serve an escape or avoidance function linked to persistent symptomatology. Finally, the results of this study highlight the need for dissociative symptoms to be more routinely
assessed and attended to in work with clients who have experienced IPV and for clinicians to consider ways to foster flexibility, acceptance, and more adaptive ways of regulating disturbing emotions in such clients.
References


32


Table 1.

Descriptive Statistics of Study Variables

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTGI</td>
<td>2.37</td>
<td>1.24</td>
<td>0 – 4.90</td>
</tr>
<tr>
<td>PCL</td>
<td>2.39</td>
<td>.86</td>
<td>1.00 – 4.76</td>
</tr>
<tr>
<td>DES Absorption</td>
<td>2.83</td>
<td>1.60</td>
<td>0 – 7.00</td>
</tr>
<tr>
<td>DES Amnesia</td>
<td>1.10</td>
<td>1.35</td>
<td>0 – 7.00</td>
</tr>
<tr>
<td>DES Depersonalization/Derealization</td>
<td>1.11</td>
<td>1.48</td>
<td>0 – 7.17</td>
</tr>
<tr>
<td>ERS</td>
<td>2.96</td>
<td>.45</td>
<td>1.86 – 4.00</td>
</tr>
<tr>
<td>AAQ</td>
<td>4.01</td>
<td>.85</td>
<td>1.00 – 5.78</td>
</tr>
<tr>
<td>DERS Impulse Control Difficulties</td>
<td>2.09</td>
<td>.81</td>
<td>1.00 – 5.00</td>
</tr>
</tbody>
</table>

Note. The full titles of the study variables are: Posttraumatic Growth Inventory (PTGI), PTSD Checklist (PCL), Dissociative Experiences Scale (DES), Ego-Resiliency Scale (ERS), Acceptance and Action Questionnaire (AAQ), and Difficulties in Emotion Regulation Scale (DERS)
### Table 2.

**Intercorrelations of Study Variables**

<table>
<thead>
<tr>
<th></th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PTGI</td>
<td>.24**</td>
<td>.09</td>
<td>.13</td>
<td>.05</td>
<td>.35**</td>
<td>.15</td>
<td>-.08</td>
</tr>
<tr>
<td>2. PCL</td>
<td>1.00</td>
<td>.38**</td>
<td>.34**</td>
<td>.40**</td>
<td>-.20*</td>
<td>-.53**</td>
<td>.43**</td>
</tr>
<tr>
<td>3. DES Absorption</td>
<td>_</td>
<td>1.00</td>
<td>.71**</td>
<td>.68**</td>
<td>-.07</td>
<td>-.21*</td>
<td>.26**</td>
</tr>
<tr>
<td>4. DES Amnesia</td>
<td>_</td>
<td>_</td>
<td>1.00</td>
<td>.75**</td>
<td>-.10</td>
<td>-.11</td>
<td>.24**</td>
</tr>
<tr>
<td>5. DES Depersonalization/Derealization</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>1.00</td>
<td>-.10</td>
<td>-.20*</td>
<td>.33**</td>
</tr>
<tr>
<td>6. ERS</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>1.00</td>
<td>.33**</td>
<td>-.23**</td>
</tr>
<tr>
<td>7. AAQ</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>1.00</td>
<td>-.40**</td>
</tr>
<tr>
<td>8. DERS Impulse Control Difficulties</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>_</td>
<td>1.00</td>
</tr>
</tbody>
</table>

* *p < .05  ** *p < .01

*Note.* The full titles of the study variables are: Posttraumatic Growth Inventory (PTGI), PTSD Checklist (PCL), Dissociative Experiences Scale (DES), Ego-Resiliency Scale (ERS), Acceptance and Action Questionnaire (AAQ), and Difficulties in Emotion Regulation Scale (DERS)
Table 3.
*Regression Models for predicting Posttraumatic Stress Symptoms and Posttraumatic Growth with Absorption and Ego-Resiliency*

<table>
<thead>
<tr>
<th>Step and Predictor</th>
<th>Posttraumatic Stress Symptoms</th>
<th>Posttraumatic Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$b$</td>
<td>$t$</td>
</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absorption</td>
<td>.20</td>
<td>5.00**</td>
</tr>
<tr>
<td>Ego-Resiliency</td>
<td>-.35</td>
<td>-2.32*</td>
</tr>
<tr>
<td>Step 2</td>
<td>.74</td>
<td>.00</td>
</tr>
<tr>
<td>Absorption</td>
<td>.20</td>
<td>4.92**</td>
</tr>
<tr>
<td>Ego-Resiliency</td>
<td>-.37</td>
<td>-2.44*</td>
</tr>
<tr>
<td>AbsorptionxEgo-Resiliency</td>
<td>.08</td>
<td>.86</td>
</tr>
</tbody>
</table>

*p < .05  **p < .01
### Table 4.

*Regression Models for predicting Posttraumatic Stress Symptoms and Posttraumatic Growth with Absorption and Impulse Control Difficulties*

<table>
<thead>
<tr>
<th>Step and Predictor</th>
<th>Posttraumatic Stress Symptoms</th>
<th>Posttraumatic Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$b$</td>
<td>$t$</td>
</tr>
<tr>
<td>Step 1</td>
<td>26.51**</td>
<td>.26</td>
</tr>
<tr>
<td>Absorption</td>
<td>.16</td>
<td>3.97**</td>
</tr>
<tr>
<td>Impulse Control Difficulties</td>
<td>.37</td>
<td>4.86**</td>
</tr>
<tr>
<td>Step 2</td>
<td>.69</td>
<td>.00</td>
</tr>
<tr>
<td>Absorption</td>
<td>.15</td>
<td>3.81**</td>
</tr>
<tr>
<td>Impulse Control Difficulties</td>
<td>.37</td>
<td>4.87**</td>
</tr>
<tr>
<td>AbsorptionXImpulse Control Difficulties</td>
<td>.05</td>
<td>.83</td>
</tr>
</tbody>
</table>

* p < .05     ** p < .01
Table 5.

*Regression Models for predicting Posttraumatic Stress Symptoms and Posttraumatic Growth with Absorption and Acceptance*

<table>
<thead>
<tr>
<th>Step and Predictor</th>
<th>Posttraumatic Stress Symptoms</th>
<th>Posttraumatic Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$b$</td>
<td>$t$</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absorption</td>
<td>.16</td>
<td>4.36</td>
</tr>
<tr>
<td>Acceptance</td>
<td>-.50</td>
<td>-7.03</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absorption</td>
<td>.15</td>
<td>4.08</td>
</tr>
<tr>
<td>Acceptance</td>
<td>-.50</td>
<td>-7.07</td>
</tr>
<tr>
<td>AbsorptionXAcceptance</td>
<td>-.09</td>
<td>-1.79</td>
</tr>
</tbody>
</table>

*p < .05 **p < .01
Table 6.

*Regression Models for predicting Posttraumatic Stress Symptoms and Posttraumatic Growth with Amnesia and Ego-Resiliency*

<table>
<thead>
<tr>
<th>Step and Predictor</th>
<th></th>
<th>Posttraumatic Stress Symptoms</th>
<th></th>
<th>Posttraumatic Growth</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$b$</td>
<td>$t$</td>
<td>$\Delta F$</td>
<td>$\Delta R^2$</td>
<td>$b$</td>
</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amnesia</td>
<td>.54</td>
<td>4.40**</td>
<td></td>
<td>.16</td>
<td>.38</td>
</tr>
<tr>
<td>Ego-Resiliency</td>
<td>-.31</td>
<td>-2.36*</td>
<td></td>
<td></td>
<td>.98</td>
</tr>
<tr>
<td>AmnesiaXEgo-Resiliency</td>
<td>.45</td>
<td>1.60</td>
<td></td>
<td>-.07</td>
<td>-.17</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amnesia</td>
<td>.56</td>
<td>4.53**</td>
<td></td>
<td>.38</td>
<td>2.13*</td>
</tr>
<tr>
<td>Ego-Resiliency</td>
<td>-.39</td>
<td>-2.54*</td>
<td></td>
<td>.98</td>
<td>4.51**</td>
</tr>
</tbody>
</table>

*p < .05  **p < .01
Table 7.

Regression Models for predicting Posttraumatic Stress Symptoms and Posttraumatic Growth with Amnesia and Impulse Control Difficulties

<table>
<thead>
<tr>
<th>Step and Predictor</th>
<th>Posttraumatic Stress Symptoms</th>
<th>Posttraumatic Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$b$</td>
<td>$t$</td>
</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amnesia</td>
<td>.41</td>
<td>3.52**</td>
</tr>
<tr>
<td>Impulse Control Difficulties</td>
<td>.38</td>
<td>5.04**</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td>.06</td>
</tr>
<tr>
<td>Amnesia</td>
<td>.40</td>
<td>3.29**</td>
</tr>
<tr>
<td>Impulse Control Difficulties</td>
<td>.39</td>
<td>4.98**</td>
</tr>
<tr>
<td>AmnesiaXImpulse Control Difficulties</td>
<td>.04</td>
<td>.25</td>
</tr>
</tbody>
</table>

*p < .05    **p < .01
Table 8.

Regression Models for predicting Posttraumatic Stress Symptoms and Posttraumatic Growth with Amnesia and Acceptance

<table>
<thead>
<tr>
<th>Step and Predictor</th>
<th>Posttraumatic Stress Symptoms</th>
<th>Posttraumatic Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$b$</td>
<td>$t$</td>
</tr>
<tr>
<td>Step 1</td>
<td>43.14**</td>
<td>.38</td>
</tr>
<tr>
<td>Amnesia</td>
<td>.48</td>
<td>4.49**</td>
</tr>
<tr>
<td>Acceptance</td>
<td>-.53</td>
<td>-7.60**</td>
</tr>
<tr>
<td>AmnesiaXAcceptance</td>
<td>-.01</td>
<td>-.05</td>
</tr>
<tr>
<td>Step 2</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Amnesia</td>
<td>.48</td>
<td>4.41**</td>
</tr>
<tr>
<td>Acceptance</td>
<td>-.53</td>
<td>-7.38**</td>
</tr>
</tbody>
</table>

*p < .05   **p < .01
Table 9.

**Regression Models for predicting Posttraumatic Stress Symptoms and Posttraumatic Growth with Depersonalization/Derealization and Ego-Resiliency**

<table>
<thead>
<tr>
<th>Step and Predictor</th>
<th>Posttraumatic Stress Symptoms</th>
<th></th>
<th></th>
<th>Posttraumatic Growth</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$b$</td>
<td>$t$</td>
<td>$\Delta F$</td>
<td>$\Delta R^2$</td>
<td>$b$</td>
<td>$t$</td>
</tr>
<tr>
<td>Step 1</td>
<td>17.77**</td>
<td>.20</td>
<td></td>
<td></td>
<td>9.79**</td>
<td>.12</td>
</tr>
<tr>
<td>Depersonalization/Derealization</td>
<td>.59</td>
<td>5.26**</td>
<td></td>
<td></td>
<td>.18</td>
<td>1.06</td>
</tr>
<tr>
<td>Ego-Resiliency</td>
<td>-.33</td>
<td>-2.24*</td>
<td></td>
<td></td>
<td>.95</td>
<td>4.38**</td>
</tr>
<tr>
<td>Step 2</td>
<td>4.23*</td>
<td>.02</td>
<td></td>
<td></td>
<td>.10</td>
<td>.00</td>
</tr>
<tr>
<td>Depersonalization/Derealization</td>
<td>.60</td>
<td>5.39**</td>
<td></td>
<td></td>
<td>.18</td>
<td>1.05</td>
</tr>
<tr>
<td>Ego-Resiliency</td>
<td>-.33</td>
<td>-2.24*</td>
<td></td>
<td></td>
<td>.95</td>
<td>4.37**</td>
</tr>
<tr>
<td>Depersonalization/DerealizationX</td>
<td>.53</td>
<td>2.06*</td>
<td></td>
<td></td>
<td>-.12</td>
<td>-.31</td>
</tr>
<tr>
<td>Ego-Resiliency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05  **p < .01
Table 10.

Regression Models for predicting Posttraumatic Stress Symptoms and Posttraumatic Growth with Depersonalization/Derealization and Impulse Control Difficulties

<table>
<thead>
<tr>
<th>Step and Predictor</th>
<th>Posttraumatic Stress Symptoms</th>
<th>Posttraumatic Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$b$</td>
<td>$t$</td>
</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depersonalization/Derealization</td>
<td>.43</td>
<td>3.83**</td>
</tr>
<tr>
<td>Impulse Control Difficulties</td>
<td>.35</td>
<td>4.46**</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depersonalization/Derealization</td>
<td>.39</td>
<td>3.36**</td>
</tr>
<tr>
<td>Impulse Control Difficulties</td>
<td>.35</td>
<td>4.54**</td>
</tr>
<tr>
<td>Depersonalization/DerealizationXImpulse Control Difficulties</td>
<td>.20</td>
<td>1.42</td>
</tr>
</tbody>
</table>

*p < .05 **p < .01
Table 11.

Regression Models for predicting Posttraumatic Stress Symptoms and Posttraumatic Growth with Depersonalization/Derealization and Acceptance

<table>
<thead>
<tr>
<th>Step and Predictor</th>
<th>Posttraumatic Stress Symptoms</th>
<th>Posttraumatic Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>t</td>
</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depersonalization/Derealization</td>
<td>.48</td>
<td>4.76**</td>
</tr>
<tr>
<td>Acceptance</td>
<td>-.49</td>
<td>-6.98**</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depersonalization/Derealization</td>
<td>.46</td>
<td>4.40**</td>
</tr>
<tr>
<td>Acceptance</td>
<td>-.50</td>
<td>-7.07**</td>
</tr>
<tr>
<td>Depersonalization/Derealization</td>
<td>-.14</td>
<td>-1.07</td>
</tr>
<tr>
<td>XAcceptance</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05  **p < .01
Figure 1.

Scatterplot of Absorption and Posttraumatic Growth (PTG)

Scatterplot of Amnesia and Posttraumatic Growth (PTG)

Scatterplot of Depersonalization/Derealization and Posttraumatic Growth (PTG)