

INTIMATE PARTNER VIOLENCE AMONG FEMALE UNDERGRADUATES: THE ROLE OF  
LANGUAGE IN DEVELOPMENT OF POSTTRAUMATIC STRESS

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Research findings across a variety of samples (e.g., clinical, shelter, hospital) estimate that 31% to 84% of women who have experienced intimate partner violence (IPV) exhibit symptoms of posttraumatic stress disorder (PTSD). The current study sought to further investigate the abuse-trauma link by examining the relationship between lifetime trauma exposure, type of abuse (i.e., physical, psychological), and perspective-taking abilities (i.e., here-there, now-then). The role of experiential avoidance in the development of PTSD symptoms was also examined. Results indicated that lifetime trauma exposure ( $\beta = .31$ ) and psychological abuse ( $\beta = .34$ ) were significant predictors of PTSD symptomatology. Additionally, analyses revealed that experiential avoidance ( $\beta = .65$ ) was a significant predictor of PTSD symptoms that partially mediated the relationship between IPV and PTSD symptomatology. Implications of findings are discussed as well as future suggestions for research examining type of IPV and PTSD.

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## CHAPTER 1

### AN OVERVIEW OF INTIMATE PARTNER VIOLENCE

#### Intimate Partner Violence: A Public Health Problem

Violence against women is a violation of human rights that has escalated into a major public health problem. The violence can take many forms, including sexual, physical, and/or emotional abuse by an intimate partner. Based on data collected from the National Violence Against Women Survey (NVAWS), it is estimated that nearly 5.3 million intimate partner victimizations occur each year among U.S. women, age 18 years and older (National Center for Injury Prevention and Control, 2003). One in four women will experience intimate partner violence (IPV) over the course of her lifetime (Tjaden & Thoennes, 2000a). However, it is possible that these values underestimate the true occurrence of IPV as acts of partner violence are typically not reported to police, friends, or family (Tjaden & Thoennes, 2000a). The issue of IPV in the United States has risen to such a magnitude that it was identified by Healthy People 2010 as one of ten leading health indicators (LHIs) to measure the health and overall wellbeing of the nation for the decade (Futures Without Violence, n.d.). Healthy People, developed by the Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human Services, is a national prevention agenda designed to identify the most significant preventable threats to health in the United States.

#### Definition

One important factor in the difficulty of accurately estimating the magnitude of

IPV has been a lack of consensus about appropriate terminology. In a more general sense, there has long been controversy regarding ambiguity in the term “violence against women” (VAW). VAW has been utilized as somewhat of an umbrella term, referring to a wide range of violent acts including murder, rape/sexual assault, physical assault, emotional abuse, battering, stalking, prostitution, genital mutilation, sexual harassment, and pornography (National Research Council, 1996). As a result, terms related to VAW have been used in differing ways by researchers and different terms have sometimes been used to describe the same acts (Saltzman, Fanslow, McMahon, & Shelley, 2002)

As IPV is a form of VAW, it is not surprising that research aimed specifically at IPV is also plagued by significant variance in how studies operationally define IPV. For some, IPV is defined as only physical violence or those acts which result in physical pain or injury. These studies overlook the incidence of other non-physical forms of violence including attempts to control or intimidate (e.g., stalking, verbal abuse, denial of access to money) (National Center for Injury Prevention and Control, 2003). Yet other studies focus on a broad definition of IPV, including forms of physical, psychological, and sexual violence. These differences in operational definitions between studies create variance in the estimates of IPV, which in turn limits comparison between studies and generalizability of results.

The National Center for Injury Prevention and Control (2003) identifies IPV, also known as domestic violence, battering, or spouse abuse, as violence committed by a spouse, ex-spouse, or current or former partner (i.e., boyfriend or girlfriend). It also

recognizes that IPV can occur among both heterosexual and same-sex couples and does not require sexual intimacy. For the purposes of this study, IPV is defined as abuse that occurs between two people in a close relationship with the term “intimate partner” referring to current and former spouses and dating partners (National Center for Injury Prevention and Control, 2011). Additionally, keeping with more recent definitions of IPV, here it is recognized as occurring along a continuum from single episodes of violence to repeated, ongoing battering.

### Types of IPV

As discussed, there is no single form of violence that defines IPV. According to Saltzman and colleagues (2002), the four main types of IPV include: physical violence, sexual violence, threats of physical or sexual violence, and psychological/emotional abuse (including coercive tactics). Physical violence is defined as “the intentional use of physical force with the potential of causing death, disability, injury, or harm” (Saltzman et al., 2002). Physical violence acts can include, but are not limited to hitting, kicking, pushing, biting, choking, burning, use of a weapon (e.g., gun, knife, other object), and use of restraint. It can also include incidents during which other people are coerced to engage in these behaviors. Sexual acts of violence refer to forcing a partner to engage in a sexual act when the partner does not consent. Sexual violence is divided into three categories (Saltzman et al., 2002): use of physical force to have partner engage in a sexual act against their will (whether or not the act is completed), attempted or completed sexual act involving a person who is unable to demonstrate understanding to

either decline participation or communicate unwillingness (e.g., because of illness, disability, intoxication, intimidation), and abusive sexual contact (e.g., intentional touching or fondling). IPV in the form of threats of physical or sexual abuse includes the use of words, gestures, weapons, or others means to communicate the intent to cause harm (i.e., death, disability, injury, or physical harm). These words and gestures can also be used to communicate intent to force a person into sexual acts. Examples of threats of IPV include statements such as “I’ll kill you” or gestures like firing a gun into the air (Saltzman et al., 2002).

### *Psychological Abuse*

Psychological or emotional abuse is characterized by threatening a partner or his/her possessions or loved ones, or harming a partner’s sense of self-worth (National Center for Injury Prevention and Control, 2011). Some examples of psychological abuse include, but are not limited to: humiliation, stalking, name calling, controlling what a partner can and cannot do (e.g., not letting partner see friends or family), and denying access to money and other basic resources. The recognition of psychological/emotional abuse as a distinct form of IPV is important in that often IPV starts with emotional abuse and then can progress to physical or sexual assault (National Center for Injury Prevention and Control, 2011). Furthermore, research indicates that physical abuse rarely occurs without instance of psychological abuse (Marshall, 1996). Research has indicated that as little as 1% of women report experiencing physical violence in the absence of psychological abuse (Follingstad,

Rutledge, Berg, Hause, & Polek, 1990). It should also be noted that partners can be psychologically abusive without instance of physical or sexual aggression. A shift in how psychological aggression or abuse is viewed (i.e., not just related to physical violence) has resulted in findings that women report psychological victimization to have a greater negative impact than physical violence (Follingstad et al., 1990).

Arias and Pape (1999) have suggested that in comparison to episodes of physical violence, episodes of psychological abuse may be longer in duration and lack a clear beginning and end. For example, incidents of name-calling or other humiliation may lead to internalization of the abuse which in turn starts to erode self-esteem and self-concept. Arias and Pape also point out that psychological abuse may be particularly detrimental in that it is psychological in nature – in other words, it is aimed at emotional well-being and sense of self. Lastly, they suggest a more simple explanation – women may experience higher frequency of psychological abuse than physical abuse which thus leads to a stronger relationship between psychological abuse and symptomatology. This explanation would be consistent with previous cited findings from Marshall (1996) that suggests physical abuse rarely occurs without coincident of psychological abuse. As is discussed in the following section on prevalence, recent research suggests the existence of high prevalence rates for psychological abuse both in the presence and absence of other forms of IPV.

Even though studies indicate that psychological violence results in negative effects on physical health similar to, if not worse than, those associated with physical violence (Coker, Smith, Bethea, King, McKeown, 2000; Coker et al., 2002; Straight,

Harper, & Arias, 2003), there is still limited research focusing on psychological violence as a distinct form of IPV. Thus far, studies have found psychological abuse to be related to anxiety and depressive symptoms (Arias & Pape, 1999; Sackett & Saunders, 1999; Taft et al., 2006), problem drinking (Arias, Street, & Brody, 1996), chronic illness (Marshall, 1996), and posttraumatic stress disorder (PTSD) symptoms (Arias & Pape, 1999; Jones, Hughes, & Unterstaller, 2001). As discussed by Follingstad and DeHart (2000), there remains an issue of consistent definition and adequate assessment of psychological aggression particularly for those who experience psychological aggression without physical aggression. In these situations, there is a risk that psychologically aggressive behaviors may not be recognized as forms of violence and thus may lead to prolonged exposure which in turn, increases negative consequences.

### Prevalence

The recognition of violence against women as a social problem dates back to the early 1970s and is related, in part, to the re-emergence of the women's movement (Kennedy, 1996). As research and public awareness of IPV has increased over the past three decades, there has been a push for refinement in assessing the prevalence, nature, and consequences of IPV. At the forefront of the movement are two nationally representative surveys designed to estimate annual rates of physical and sexual IPV in the United States. The National Crime Victimization Survey (NCVS) was sponsored by the Bureau of Justice Statistics (BJS) and the National Violence Against Women Survey (NVAWS) was co-sponsored by the Centers for Disease Control and Prevention (CDC)

and the National Institute of Justice (NIJ). Most recently, the Centers for Disease Control and Prevention's National Center for Injury Prevention and Control (NCIPC), along with the National Institutes of Justice (NIJ) and Department of Defense (DoD), initiated the National Intimate Partner and Sexual Violence Survey (NISVS).

The NCVS is the second-largest ongoing survey supported by the U.S. government (Bachman, 2000) and has been collecting information regarding personal and household victimization since 1973. The sample design for the NCVS involves selection of housing units (e.g., addresses) from a stratified, multistage cluster sample. Once a unit is selected, all residents (ages 12 or older) of that unit are asked to complete an interview with an interviewer from the U.S. Bureau of the Census. The sample for the NCVS consists of approximately 90,000 people, residing in 45,000 housing units. Interviews were conducted every six months for three years, with an average annual response rate exceeding 93% (Bachman, 2000). Results of the NCVS indicated an annual intimate partner rape rate of 0.55 per 1,000 women and an annual intimate partner assault rates of 4.98 simple assault (i.e., without a weapon) and 1.2 aggravated assault (i.e., with a weapon) per 1,000 women (Rennison & Welchans, 2000).

The NVAWS, funded through a grant to the Center for Policy Research, was conducted between November 1995 and May 1996 (Tjaden & Thoennes, 2000a). This national telephone survey sampled both men and women to gather comparable data on male and female victimization experiences. The sample was generated through a national random-digit-dialing sample of households. A total of 8,000 women and 8,000



men, age 18-years-old or older, agreed to participate in the study. A total participation rate of 72% and 69% was recorded for women and men, respectively. As with the NCVS study, IPV was defined as rape/sexual assault and/or physical assault and intimate partner referred to current or former dates, spouses, or cohabiting partners. Partners could be same-sex or opposite-sex for the NVAWS.

Some defining features of the NVAWS were that it gathered information about both prevalence (i.e., lifetime and annual) and incidence of violence. Multiple, behaviorally specific questions were also utilized to screen for rape, physical assault, and stalking (i.e., nature and content of questions were clear). Results of the NVAWS show that an estimated 3.2 per 1,000 women surveyed reported a completed or attempted rape in the previous 12 months to being interviewed. Estimates for annual rate of physical assault were 44.2 per 1,000 women (Tjaden & Thoennes, 2000a). Caution should be exercised in comparing results of the NCVS and NVAWS due to methodological differences (e.g., age of participant, screening questions, time period) (Tjaden & Thoennes, 2000b).

Started in 2010, NISVS is aimed at assessing the incidence and prevalence rates for IPV, sexual violence (SV), and stalking victimization through ongoing collection of population-based surveillance data (Centers for Disease Control and Prevention, 2011b). Both English and/or Spanish-speaking male and female adults (i.e., 18 years or older) living in the United States are being surveyed in the NISVS. To address the lack of information in underserved and understudied populations, the NISVS was designed to over-sample American Indian and Alaska Native populations. Additionally, the first

year of NISVS includes data collection from active duty female U.S. military personnel (i.e., Army, Air Force, Marine Corps, and Navy) and female spouses of married male military personnel. The proposed release of data in the form of a national report from the NISVS is expected to be October 2011.

### *Gender*

While both men and women can be victims of IPV, available research literature indicates that women are more likely than men to suffer physical as well as psychological consequences from IPV (Brush, 1990; Gelles, 1997; Rand & Strom, 1997; Rennison & Welchans, 2000). Independent of time period (e.g., lifetime or annual) and type of IPV (e.g., rape, physical assault, stalking), women are significantly more likely than men to report victimization by a partner (Tjaden & Thoennes, 2000a). Annually, an estimated 4.8 million women experience IPV (i.e., physical assaults, rape) and 2.9 million men experience IPV related physical assaults (Tjaden & Thoennes, 2000a). Based on data from the NCVS, approximately 85% of IPV victimizations were against women in 2001 (Rennison, 2003). Females, between the ages of 20 and 24 years old, face the greatest risk of experiencing nonfatal IPV (Catalano, 2007). Additionally, women between the ages of 20 and 29 years old are at the greatest risk of being murdered by an intimate partner (Paulozzi, Saltzman, Thompson, & Holmgreen, 2001).

### *IPV in College Undergraduates*

Research findings have consistently indicated high rates of psychological and physical violence among college students. A cross-sectional study of 200 male and

female college students by Próspero and Vohra-Gupta (2007) examining the relationship between past victimization and perceptions of future dating situations found that 86% of all participants reported victimization in the form of psychological/verbal, physical, and/or sexual violence. The specific percentages for each type of violence, as measured by the Revised Conflict Scale (CTS2) included: 82% psychological/verbal aggression, 49% physical assault, and 46% sexual coercion.

The findings of Próspero and Vohra-Gupta's study were consistent with earlier research indicating the magnitude of IPV among couples on college campuses. White and Koss (1991) found that approximately 88% of college women reported involvement in relationships where verbal aggression occurred between partners. Rates of physical violence have been estimated to be at least one in five (Wasserman, 2003) with some studies finding that approximately one-third of college students report incidents of physical victimization (Fass, Benson, & Leggett, 2008; Sabina & Straus, 2008; White & Koss, 1991). Rates of psychological abuse in college samples have also been consistently reported at high levels ranging from 80-90% (Hines & Saudino, 2003; White & Koss, 1991). While most studies are cross-sectional in nature, longitudinal studies also support findings of high occurrence of IPV among college students. One such study revealed that 88% of women, from adolescence through their fourth year of college, reported at least one incident of physical or sexual violence by an intimate partner; 63.5% of these women reported experiencing both forms of violence (Smith, White, & Holland, 2003).

## Effects of Intimate Partner Violence

The effects of IPV can be both short- and long-term problems (Plichta, 2004), with repeated violence resulting in more serious consequences than single incidents (Johnson & Leone, 2005). IPV is related to a number of problems including physical injury and illness, economic costs, death, and psychological problems (National Research Council, 1996). Furthermore, IPV has been linked to harmful health behaviors (e.g., smoking, using drugs, risky sexual behavior, risky dieting) with more severe violence exposure related to increased negative health behaviors by victims (Plichta, 2004; Silverman, Raj, Mucci, & Hathaway, 2001).

### *Physical Health*

Data from the NVAWS revealed that IPV results in approximately 2.0 million injuries each year for women (National Center for Injury Prevention and Control, 2003). IPV has been identified as one of the most common causes of injury in women (Rand, 1997). Physical injuries from IPV can be minor (e.g., cuts, scratches, bruises) or more serious in nature (e.g., broken bones, internal bleeding, head trauma). It is estimated that as many as 42% of women who reported physical abuse as an adult (i.e., 18 years or older) indicated that their most recent victimization resulted in some form of physical injury. Of these injuries, the majority were minor and included scratches, bruises, and welts (Tjaden & Thoennes, 2000a).

The health consequences of IPV can follow a direct pathway as is seen with repeated physical violence or it may affect health in indirect ways through chronic

psychological abuse (Coker et al., 2000). The chronic stress and fear associated with IPV have been found to negatively affect the endocrine and immune systems (Crofford, 2007; Leserman & Drossman, 2007). A wide range of health conditions have been linked to IPV, including fibromyalgia, irritable bowel syndrome, gynecological disorders, pregnancy difficulties (e.g., low birth weight, perinatal death), sexually transmitted diseases (e.g., HIV/AIDS), gastrointestinal disorders, and cardiac or circulatory problems (Centers for Disease Control and Prevention, 2011a). It is estimated that women with a known history of IPV report approximately 60% higher rates of all health problems compared to women with no such history of abuse (Campbell et al., 2002). Plichta (2004) provides an extensive review of findings from a decade's worth of research (1993-2003).

### *Economic Costs*

Consistent with observed physical injury and health problems from IPV, victims of IPV also tend to have increased utilization of health services, which in turn leads to increased medical costs (Plichta, 2004). In one study examining health care costs of battered women compared to the general female population, victims of IPV cost health plans 92% more than the general population (Wisner, Gilmer, Saltzman & Zink, 1999). The cost of IPV, including medical care, mental health services, and lost productivity (e.g., days missed from work) was estimated to be \$5.8 billion in 1995. This figure, updated to the 2003 dollar value, reflects an alarming cost exceeding \$8.3 billion (National Center for Injury Prevention and Control, 2003; Max, Rice, Finkelstein,

Bardwell, & Leadbetter, 2004). This total cost includes \$460 million for rape, \$6.2 billion for physical assault, \$461 million for stalking, and \$1.2 billion for lost lives (Max et al., 2004). Of note, much of the increased costs for victims of IPV were associated with mental health services.

### *Psychological Health*

IPV has been found to result in excess of 18.5 million mental health care visits per year (National Center for Injury Prevention and Control, 2003). However, this staggering number may be an underestimate as more recent research with college students found that only 16% of the 86% that reported experiencing some form of IPV indicated that they sought services to address mental health problems (Próspero & Vohra-Gupta, 2008). The primary reasons cited for not seeking services within this sample were embarrassment, cost of services, uncertainty about effectiveness of treatment, and social stigma (i.e., having others think they're "crazy"). Other research has revealed that women report additional barriers to seeking IPV services including pressure not to talk about IPV (i.e., keep it a "secret"), failure to recognize events as IPV (e.g., thinking that verbal abuse is not a form of IPV), self-doubt and low self-esteem, fear of consequences or losses (e.g., custody of children, finances), fear of perpetrator and/or desire to protect the perpetrator (Petersen, Moracco, Goldstein, & Clark, 2005).

An epidemiological study found that 56% of women who experienced any form of IPV were diagnosed with a psychiatric disorder (Danielson, Moffit, Caspi, & Silva,

1998). The two most commonly reported mental health problems are depression and PTSD (Campbell & Kendall-Tackett, 2005; Golding, 1999). General anxiety, insomnia, and substance abuse have also been linked to IPV (Campbell, 2002). Additionally, a number of studies have shown a relationship between IPV and suicidality, resulting in estimates ranging between 4.6% and 77% with a weighted mean of 17.9% (Golding, 1999). The observed relationship between IPV, depression, and PTSD is consistent with more general findings that major depression is among the most common comorbid diagnoses for women with PTSD (Breslau, Davis, Peterson, & Schultz, 1997). A meta-analysis by Golding (1999) found a 48% weighted mean prevalence for depression in IPV survivors. Furthermore, PTSD and depression appear to have a chronic nature among IPV survivors and can persist for extended periods of time even after cessation of abuse (Campbell & Soeken, 1999; Zlotnick, Johnson, & Kohn, 2006). A detailed discussion of the relationship between IPV and PTSD follows in a later section.

### *Children's Psychological Health*

Consideration of the consequences of IPV must also take into account its effects on witnesses, particularly children. Within the United States, an estimated 3 to 17.8 million children will witness an act of domestic violence each year (Carlson, 1984; Holden, 1998; Straus, 1992). More recent research has found that this number is likely closer to the higher end of the estimate, with approximately 15.5 million American children living in families where there is at least one incident of domestic violence per year, and of this number, an approximated 7 million involving severe partner violence

(McDonald, Jouriles, Ramisetty-Mikler, Caetano, & Green, 2006). There has been a growing body of research documenting the deleterious effects of both direct abuse and witnessing IPV in childhood, however, there is still more to be investigated regarding the effects of these experiences into adulthood (Kulkarni, Graham-Bermann, Rauch, & Seng, 2011).

Exposure to IPV can be detrimental to children in that they are at increased risk for development of a variety of internalizing and externalizing disorders (Fantuzzo et al., 1991; Holden & Ritchie, 1991; Jaffe, Wolfe, Wilson, & Zak, 1986; Rossman, 1998; Sternberg et al., 1993). More specifically, children who have been exposed to domestic violence exhibit increased depressive symptoms, anxiety, and worry (e.g., Graham-Bermann, 1996; Sternberg et al., 1993). Children exposed to IPV also appear to be more likely to display physical aggression and behavioral problems, as reported by parents (e.g., Graham-Bermann & Levendosky, 1998; Jaffe et al., 1986; Jouriles & Norwood, 1995). Furthermore, it appears that the effects of exposure to IPV extend into adulthood. Long-term effects of exposure have been found to encompass a range of symptoms including depression, trauma, antisocial behaviors, substance use, general violence, and partner violence (Downs, Smyth, & Miller, 1996; Ehrensaft et al., 2003; Henning, Leitenberg, Coffey, Bennett, & Jankowski, 1997; Murrell, Christoff, & Henning, 2007; Widom 1989).

#### Intimate Partner Violence and Posttraumatic Stress Disorder

Research findings across a variety of samples (e.g., clinical, shelter, hospital)



estimate that 31% to 84% of women who have experienced IPV exhibit symptoms of PTSD (Golding, 1999; Jones et al., 2001). Considering that Golding (1999) found a weighted mean prevalence of 64%, rates of PTSD secondary to IPV are much higher than the observed 10.4% (lifetime) in the general population of women (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995) as well as the 25.8% prevalence rate for women with a history of crime victimization (Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993). Additionally, in one of the few studies to examine PTSD symptomatology in post-abused women (i.e., no longer in relationship for 2 or more years), between 44-66% of women (depending on assessment measure) reported persisting symptoms of PTSD (Woods, 2000).

The variability in rate of PTSD among abused women has been attributed to a number of factors including population sampled, method of assessment of PTSD symptoms, and time elapsed since last IPV incident (Basile, Arias, Desai, & Thompson, 2004). Additionally, conceptualization of psychological consequences of IPV based on diagnostic criteria of PTSD has been identified as a possible source of error in accurately estimating posttraumatic stress among abused women. Specifically, diagnostic criteria for PTSD is defined in relation to single traumatic events and thus may be limited in application to situations where an individual experiences repeated or chronic traumatization as is typically seen with IPV (Herman, 1992). Furthermore, a more dimensional approach to posttraumatic stress related to IPV may be more appropriate; it appears that victims of IPV may exhibit many, but not all, symptoms required for a full diagnosis of PTSD. In these situations, it would be prudent to identify partial or

sub-threshold PTSD as it is hypothesized that this level of symptomatology may result in as much impairment as full PTSD (Basile et al., 2004). In a telephone-based survey of 637 women, the most commonly reported PTSD symptoms among abused women were repeated, disturbing memories and thoughts of the abuse (58%), psychological distress when reminded about abuse (55%), hypervigilance (i.e., watchful, "on guard") (52%), and feeling jumpy or easily startled (41%) (Seedat, Stein, & Forde, 2005).

Increased awareness of PTSD as a consequence of IPV is important given that treatment approaches for abused women have historically focused primarily on depression and other psychological disorders than PTSD (Jones et al., 2001). Over the past two decades, the body of literature focused on PTSD in women experiencing IPV has grown considerably; however much of the early work was with women who sought assistance or were dwelling in a shelter (Jones et al., 2001). Thus, while findings from these studies have played a pivotal role in understanding PTSD among battered women, there is reasonable questioning as to the generalizability of these results to the larger population of women experiencing IPV. It has been speculated that women who seek psychological services and/or shelter may represent more extreme cases of violence in which symptomatology would be more severe than women who experienced less severe IPV. Alternately, some have speculated that women who seek assistance may actually represent a healthier sample in that they are able to recognize their distress and seek support. In this scenario, estimates of PTSD with women seeking assistance might underestimate the true prevalence of PTSD among battered women.

In their review of a decade's worth of research examining IPV and PTSD, Jones, Hughes, and Unterstaller (2001) report that the extent, severity, and type of abuse is associated with the intensity of PTSD symptoms. In other words, the more threat the abuse poses to one's well-being, the more severe the trauma symptoms. Evidence from multiple studies designed specifically to assess PTSD related to IPV supports the relationship between severity of abuse and severity of PTSD symptoms in both clinical and community samples (Astin, Lawrence, & Foy, 1993; Astin, Lawrence, Pincus, & Foy, 1990; Astin, Ogland-Hand, Coleman, & Foy, 1995; Houskamp & Foy, 1991; Kemp, Rawlings, & Green, 1991; Woods, 2000). While this relationship appears well supported and is consistent with the notion of a "dose-response" relationship, research findings also indicate that violence need not be severe to result in PTSD symptoms (Jones et al., 2001).

Physical, sexual, and psychological IPV have all been associated with PTSD symptoms in a number of studies (Babcock, Roseman, Green, & Ross, 2008; Jones et al., 2001). As the body of research investigating the abuse-trauma link expands, more focus is being directed toward examining the potential unique role of psychological abuse. Several studies have shown psychological abuse to be as strong or stronger predictor of PTSD and depression than physical abuse (e.g., Arias & Pape, 1999; Dutton, Goodman, & Bennett, 1999; Mechanic, Weaver, & Resick, 2008; Pico-Alfonso, 2005).

In perhaps one of the most widely cited early studies examining psychological abuse as a predictor of PTSD symptoms, Arias and Pape (1999) interviewed 68 women

residing in battered women's shelters. This study is most notable as one of the early studies to control for the potential confounding effects of physical violence while examining the negative psychological sequelae of psychological abuse. Results of Arias's and Pape's study showed that psychological abuse was indeed a strong and significant predictor of PTSD symptoms as well as of intention to leave the abusive relationship. Furthermore, the effects of psychological abuse were shown to be significant even after controlling for the effects of physical abuse. Unexpectedly, Arias and Pope found that physical abuse did not account significantly for variance in reported PTSD symptoms or intent to end abusive relationships.

In a more recent longitudinal study, Taft, Murphy, King, Dedeyn, and Musser (2005) examined PTSD symptoms in a non-shelter population of current and former female partners ( $N = 96$ ) of men participating in a group treatment program for perpetrators of IPV. The rates of "probable PTSD" (i.e., based on Diagnostic Interview Schedule and *DSM-III* diagnostic criteria) for this sample were 52% (pretreatment), 35% (posttreatment), and 29% (follow-up). The authors point out that these rates are comparable to those found in shelter samples (Astin et al., 1993; Saunders, 1994). Analyses of the contribution of type of abuse (physical, psychological) to PTSD symptoms was in line with previous research findings (e.g., Arias & Pape, 1999; Dutton et al., 1999; Street & Arias, 2001); psychological abuse demonstrated a stronger relationship with PTSD symptoms than physical abuse at baseline. Additional analyses revealed that psychological abuse remained a distinct predictor of PTSD symptoms even when entered with physical abuse. Furthermore, decreases in incidence of

psychological abuse were correlated with decreased PTSD symptoms over time (Taft et al., 2005).

### *Polyvictimization and PTSD*

As the research continues to support the relationship between incidence of IPV and PTSD, other questions arise regarding this link, including what factors contribute to the development of PTSD symptoms in abused women. One emerging factor in the abuse-trauma link for women experiencing PTSD is prior trauma history. Research on trauma exposure and PTSD within the general population has found that 75% of individuals reporting one type of trauma have experienced two or more traumas (Kessler et al., 1995). Despite the evidence of high rates of multiple traumatization in the general population, few studies within the IPV literature appear to take into account the potential role of polyvictimization (i.e., multiple types of victimization) in development of psychological problems secondary to IPV (Sabina & Straus, 2008). This is a critical issue as it is thought that exposure to multiple traumatic experiences affects an individual's ability to recover from future traumatic experiences (Follette, Polusny, Bechtle, & Naugle, 1996).

In one of the handful of studies examining the effects of multiple types of victimizations, Basile, Arias, Desai, and Thompson (2004) utilized data from the NVAWS to examine potential relationships between PTSD and co-occurring physical, sexual, psychological, and stalking violence. In this population-based sample, 93% of victimized women reported a history of at least one type of physical violence and 52%

indicated experiencing at least one type of psychological abuse. Results of this study revealed that all four types of IPV were individually predictive of PTSD symptoms. Additionally, dose-response model analysis results suggested that the more types of current partner violence women reported, the increased likelihood of reported PTSD symptoms. While this study provided valuable information regarding individual and combined effects of different types of IPV, it notably did not assess for other traumatic experiences (e.g., death of family member, natural disaster) which may contribute to PTSD symptomatology (Basile et al., 2004).

In an attempt to fill the gap in the literature regarding polyvictimization and PTSD, Sabina and Straus (2008), investigated the rate of physical, psychological, and sexual victimization and polyvictimization (i.e., combinations of IPV types) in a large ( $N = 4,533$ ) student sample of men and women from 19 U.S. colleges. The most frequent and severe form of victimization among women was psychological abuse. Over half (51.5%) of victimized women reported experiencing polyvictimization (i.e., two or more IPV types) within the prior year. Interestingly, both men (21.3%) and women (21.3%) were found to have the combination of psychological, physical, and sexual victimization as the most frequent polyvictimization combination. Further supporting the importance of consideration of psychological abuse, approximately half of the severe victimization for both men (50.5%) and women (49.7%) was psychological only in nature. Additional analyses revealed that polyvictimization was a stronger predictor of posttraumatic stress than any one individual IPV type. Consistent

with previous findings of a “dose” relationship (Basile et al., 2004), the strongest predictor of posttraumatic stress was three victimizations.

### *Lifetime Trauma, IPV, and PTSD*

Another important consideration among women experiencing IPV is the number of lifetime traumas experienced. Research on PTSD outside the context of IPV has provided evidence for a significant relationship between number of stressful life events and PTSD symptomatology. A study by Scott (2007) involving participants from both clinical and nonclinical samples found that the number and severity of traumatic experiences was associated with severity of PTSD symptoms. This phenomenon has been referred to as the dose-response theory (Green, 1994) where PTSD severity is directly related to severity of traumatic experiences.

As noted by Graham-Bermann, Sularz, and Howell (2011), the deleterious effects of additional adverse life events outside of IPV can potentially overshadow the effects of IPV by itself. Nationally representative data on lifetime exposure in the United States from the U.S. National Comorbidity Survey (NCS) showed that experiencing trauma is not a rare event; 61% of men and 51% of women interviewed reported exposure to at least one lifetime traumatic event (Kessler et al., 1995). Of these individuals, the majority reported experiencing more than one type of trauma with the most commonly occurring traumas of witnessing a traumatic event, personally experiencing a life-threatening accident, and exposure to a natural disaster. In one of the earliest studies to apply the *Diagnostic and Statistical Manual of Mental Disorders*, 4<sup>th</sup> edition (*DSM-IV*)

criteria for a traumatic event that could result in PTSD, lifetime prevalence of exposure to any trauma was 89.6% with a mean number of 4.3 distinct traumatic events for women in the sample (Breslau et al., 1998).

While women appear to experience a lower number of traumatic life events than men, women are more likely to develop PTSD than men (Tolin & Foa, 2006). Studies with community samples suggest that women are almost twice as likely to report PTSD symptoms than men. The National Comorbidity Survey Replication (NCS-R), conducted between February 2001 and April 2003, estimated lifetime PTSD prevalence for adults to be 6.8% (Kessler et al., 2005); lifetime prevalence estimates were 3.6% for men and 9.7% for women. Breslau and colleagues (1998) observed an even higher probability rate of PTSD after exposure: 13% in women and 6.2% in men. The gender differences in PTSD estimates seen across studies is thought to be related to the difference in trauma type experienced by men and women. Mainly, women are more likely to experience sexual assault (childhood and adulthood) which has been associated with a higher probability of PTSD (Breslau et al., 1998; Kessler et al., 1995).

Review of studies assessing potentially traumatic events in undergraduate students has estimated the prevalence of these events to range between 67 to 84 percent (Read, Ouimette, White, Colder, & Farrow, 2011). This estimate appears consistent with results of community sample studies that suggest the peak age of trauma exposure to be between 16 and 20 years old (Breslau et al., 1998). Among college students, results from studies utilizing screening measures to determine preliminary diagnoses of PTSD have estimated that between 10-15% of students report



symptoms sufficient for a diagnosis of full or partial PTSD (Borsari, Read, & Campbell, 2008). The most recent study available at the time of this study found that 9% of newly matriculated college students ( $N = 3,014$ ) reported trauma and met diagnostic criteria for PTSD (Read et al., 2011).

In a relatively recent study of traumatic events among male and female undergraduate students, Frazier and colleagues (2009) found that 85% of their participants ( $N = 1,528$ ) reported experiencing at least one traumatic event during their lifetime. Women who reported trauma exposure had higher probable PTSD rates (7.2%) than men exposed to trauma (3%). For the entire sample, the highest probable PTSD rate (13%) occurred in individuals who selected a sexual assault as their worst lifetime event (Frazier et al., 2009). Of note, events that were self-identified by participants as their “worst” events were not necessarily the events associated with the highest PTSD symptomatology. Those events that met Criterion A2 for PTSD (i.e., caused intense fear, helplessness, or horror) were related to increased PTSD and other distress symptoms. This finding is consistent with other research that integrates assessment of both Criteria A1 and A2 *DSM-IV-TR* (APA, 2000) for a traumatic event. In a study of undergraduates, Boals and Schuettler (2009) found that when Criterion A2 was taken into account, Criterion A1 had little to no effect on reported PTSD symptoms. In other words, it is the individual's emotional response (i.e., fear, helplessness, horror) that is associated with PTSD symptoms rather than whether or not the event was life-threatening (Boals & Schuettler, 2009). These results supported previous work by

Rubin, Boals, and Berntsen (2008) which also found that emotional response (Criterion A2) predicted PTSD symptom severity rather than nature of the event (Criterion A1).

There is an established body of literature indicating strong support for the relationship between childhood sexual abuse and increased risk of re-victimization (Follette et al., 1996). In a study by Dutton, Burghardt, Perrin, Chrestman, and Halle (1994), approximately half of the sample of battered women reported experiencing sexual abuse that occurred prior to age 17. A population based telephone survey of more than 3,500 adult women found that women who reported a childhood history of physical abuse or witnessing IPV had a 4- to 6-fold increased risk of physical IPV (Bensley, Van Eenwyk, & Wynkoop-Simmons, 2003).

Astin, Ogland-Hand, Coleman, and Foy (1995) found that comparisons between battered women and maritally distressed women with no history of battering revealed that battered women reported significantly higher rates of PTSD (58% versus 18.9%). The rates of trauma experiences were reportedly similar between the two groups of women, however, women in both groups with PTSD symptoms were significantly more likely to have a history of childhood abuse and overall higher number of previous traumatic experiences. Within this sample of 50 battered women and 37 non-battered women, 76% and 95% of women respectively reported experiencing at least one other traumatic stressor (not battering) during their life.

The hypothesized relationship between previous trauma, IPV, and PTSD appears complex in that studies have shown that women with histories of childhood physical and sexual abuse are at increased risk for IPV (West, Williams, & Siegel, 2000) and

women with exposure to IPV with history of childhood abuse have been found to exhibit increased risk for PTSD (Dutton, 2009). In a study of participants from a large health maintenance organization (HMO), Whitfield, Anda, Dube, and Felitti (2003) found that exposure to family aggression and violence was a significant risk factor for women to become victims of IPV. Results indicated a strong relationship between number of adverse childhood experiences and increased risk of IPV victimization for women; as number of violent experiences increased, there was 60-70% increased risk of victimization.

While much research exists examining the relationships between trauma exposure and PTSD and IPV and PTSD, less attention has been paid to the interaction between IPV, other adverse events, and traumatic stress (Graham-Bermann et al., 2011). Graham-Bermann and colleagues (2011) set out to expand the range of adverse life events beyond childhood sexual and physical abuse in their recent study involving a community sample of women exposed to IPV. Among the 104 participants, only 14% reported IPV as their sole adverse lifetime event. The two most highly reported additional adverse life events were physical (58%) and sexual (42%) assault by family members. A large percentage of women (79%) reported trauma symptoms that persisted for more than one month. Analyses revealed that woman exposed to IPV plus additional adverse life events reported approximately twice as many avoidance and arousal symptoms of PTSD than women with exposure to just IPV. Among types of additional adverse life events, history of sexual assault by family member or stranger, sexual misconduct with a minor, and past experience of torture were associated with

increased avoidance, physiological arousal, and total PTSD symptom scores (Graham-Bermann et al., 2011). Findings were also consistent with dose-response theory and other studies (e.g., Scott, 2007) in that there was an observed relationship between PTSD symptom severity and number of adverse life events. Research examining the effects of multiple life events is an important step forward and provides support for further investigation into theoretical models of PTSD, including a relational frame theory (RFT; Hayes, Barnes-Holmes, & Roche, 2001) based analysis of posttraumatic stress. RFT, which is discussed in detail in the following section, provides an explanation of how multiple life events, including traumas, can become related through relational responding.

### Relational Frame Theory

Relational frame theory (RFT) is a theory and research program about the nature of human language and cognition. One of the key components of RFT, relational responding, describes “the process of discriminating relationships *between stimuli*” (Blackledge, 2003). This discrimination is a behavior influenced by properties (e.g., size, color, shape, function) of the stimuli. When specific types of relational responding occur without being directly taught or reinforced, the process is referred to as derived relational responding. This ability to derive relations on verbal descriptions (indirect) versus direct contact is unique to verbal humans. The “hallmark of RFT” is the ability to derive relational responses between stimuli based on arbitrary (non-formal) properties of stimuli (Blackledge, 2003). Arbitrary properties are those that cannot be acquired

through the senses (e.g., taste, smell, touch) but rather are given arbitrary significance by the socio-verbal community.

As a result of creating relational responses, there is transformation of stimulus functions for the stimuli. Transformation of stimulus functions is defined as “when a given stimulus in a relational network has certain psychological functions, the functions of other events in that network may be modified in accordance with the underlying derived relation” (Hayes, Fox, et al., 2001). For example, if yelling, home, and the smell of cologne are all members of a relational frame and yelling elicits fear, home, and the smell of cologne may also (indirectly) come to provoke fear.

When discussing RFT and relational frames, it is important to keep in mind that the term “relational frame” is equivalent to “relational framing” or “framing relationally.” All terms refer to ways of describing human responses. More importantly, while “relational frame” is a noun, relational frames are in reality a process rather than static. In other words, “people *frame events relationally* in the moment as an active process that is a function of their extensive learning history and stimulation in the present environment” (Blackledge, 2003).

There are several different types of relations that might be formed, including frame of correspondence (e.g., the audible stimulus of “dog” is the same as the textual stimulus of d-o-g) or of difference (e.g., round is different than square). Of interest to this current study, are deictic frames. Deictic relations refer to relations that specify terms of the perspective of the speaker (e.g., I-you, here-there, now-then). Deictic frames are unique in that they are believed to play a critical role in perspective-taking.

Additionally, deictic frames differ from other relational frames in that they do not appear to have any formal or non-arbitrary counterparts (Hayes et al., 2001). The relational properties of I versus you, here versus there, and now versus then are constant regardless of physical context or environment. As the individual remains constant across changing environments – and, deictic frames are based on the constant variable of one’s perspective, then the relational properties of the frames (e.g., I-you, here-there, now-then) remain constant even in the face of changing environmental contexts. The formation of deictic frames is based on a history of learning to appropriately respond to and ask questions that require describing one’s perspective in relation to other perspectives (e.g., “what are you doing now?” and “what was I doing there?”). While components of these questions tend to remain similar in form across contexts, the actual physical environment is likely to be ever-changing (Hayes et al., 2001). Further discussion of deictic frames and their relation to other theories of perspective-taking (e.g., theory of mind) follows in subsequent sections.

## RFT and PTSD

The bi-directionality of language is of important consideration with regard to PTSD in that the words and images related to a trauma can share the same function of the actual trauma. Thus, the verbal description and evaluation of the trauma itself can become as aversive as the actual event (Hayes, Strosahl, & Wilson, 1999; Walser & Hayes, 2006). Take for example, a women exposed to IPV who exhibits symptoms of PTSD. Based on the principles of RFT, it is possible for the formation of a relationship

to occur between thoughts and descriptions of IPV they have been exposed to and the actual experience of being exposed to the violence. To build upon this, verbal behavior occurs across a variety of contexts so there is possibility that the stimulus functions of the trauma could be related to numerous situations (Walser & Hayes, 2006).

### *Experiential Avoidance*

According to Orsillo and Batten (2005), avoidance is thought to be one of the core psychological processes related to the development and maintenance of PTSD. Avoidance related to trauma can take many forms including thought suppression, physical avoidance, rumination and suppression of intrusions, and emotional numbing to name a few. Experiential avoidance refers to the unwillingness to make contact with private experiences (e.g., thoughts, feelings, sensations). The concept of experiential avoidance incorporates all of the previously mentioned forms of cognitive, emotional, and behavioral avoidance and is not specific to trauma-related sequelae. Of note, experiential avoidance is not limited to negative internal experiences; rather, it refers to avoidance of both positively- and negatively-evaluated experiences in addition to those with a neutral valence.

With regard to experiential avoidance, feelings, thoughts, and memories are not deemed pathological rather it is the avoidance or attempt at eliminations that can become pathological. For the victim of a trauma, experiential avoidance can take the form of unwillingness to experience traumatic memories, negative thoughts, or physiological sensations. In an effort to avoid trauma-related stimuli, an individual may

engage in substance abuse, somatization, compulsions, self-injurious behavior, and social isolation. In these ways, the individual attempts to change the form or frequency of these private events even in the face of significant costs (Walser & Hayes, 2006). Over time, these avoidance strategies may generalize to non-trauma stimuli; this process is thought to contribute to the maintenance of posttraumatic symptoms (Marx & Sloan, 2005; Polusny & Follette, 1995; Rosenthal, Rasmussen Hall, Palm, Batten, & Follette, 2005; Varra & Follette, 2005). For example, a woman with a history of IPV may avoid interacting with the perpetrator of this violence in an attempt to control their private experiences (e.g., thoughts, feelings related to abuse). In time, they may even avoid contact with other individuals associated with their abusive partner (e.g., friends), even though those individuals did not perpetrate the violence. It is also a possibility that the woman may begin to avoid close relationships in general out of avoidance of private experiences. Thus, this avoidance can in turn impact social and occupational functioning.

At first, avoidance strategies may be appealing in that they seem to work, and they do tend to work in the short-term. However, this initial reduction in distress is usually short-lived and can lead to excessive attempts to avoid or eliminate unwanted experiences, which has been associated with social isolation, depression, psychological distress, substance-abuse problems, and a variety of other psychopathology (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996; Polusny & Follette, 1995). For example, escaping an anxiety-provoking situation such as being in a car can provide immediate relief for the survivor of a car accident. However, the individual is likely to find that this



relief is only temporary and, over time, the act of physical avoidance of automobiles becomes less effective. This leaves the individual in an ongoing struggle to find “bigger and better” avoidant strategies no matter what the cost (e.g., relationships, job). Their avoidance may progress to all forms of transportation and perhaps eventually even thoughts about having to leave home as it would require a mode of transportation. It is as though the individual has become “stuck” in this intricate web of avoidance and at some point finds that the very thing that was meant to make them “better” (i.e., less anxiety) is in reality keeping them stuck.

While there is some overlap between the concept of experiential avoidance and the *DSM-IV* avoidance criteria for PTSD, experiential avoidance is distinct from this group of avoidance symptoms. More specifically, the avoidance symptoms required for PTSD diagnosis refer to behaviors that are triggered by exposure to trauma-related stimuli whereas experiential avoidance refers to “the repetition of unworkable patterns of behavior that prevent people from acting in ways that are congruent with their central values” (Kashdan & Kane, 2011). As a broad construct, experiential avoidance thus allows for an “all-inclusive explanation” of the role of avoidance in the development and maintenance of trauma-related symptoms (Walser & Hayes, 2006).

Related to experiential avoidance is the issue of control. Few may realize that attempts at controlling negative internal events through avoidance may actually intensify their experience of the trauma (Walser & Hayes, 2006). Research examining the paradoxical nature of avoidance (thought suppression) indicates that the greater the effort to suppress or avoid distressing experiences (e.g., thoughts, feelings, bodily

sensations) related to trauma, the more intense and frequent the actual experiences (for review, see Abramowitz, Tolin, & Street, 2001). Consider that in order to not think about something (e.g., chocolate), there first has to be the thought “don’t think about X [chocolate].” In this same way, attempts to avoid negative internal events related to trauma actually involve having to have the thought “don’t think about [trauma].” As individuals make desperate attempts to control their internal experiences by avoidance it is possible for them to lose touch with their identity. In other words, their life becomes less about themselves and what it is that they value and more about the trauma and avoidance of all trauma-related stimuli. From this can come the perspective that one cannot be “whole” with a history of negative experiences such as trauma (Walser & Westrup, 2007).

Studies have shown empirical support for the notion of experiential avoidance as prominent in the development and maintenance of trauma-related psychopathology. A study by Roemer, Litz, Orsillo, and Wagner (2001) found that in a sample of combat veterans ( $N = 61$ ), those veterans who met criteria for PTSD reported more inhibition of emotional responses (both positive and negative) compared to those veterans without PTSD symptomatology. Overall, the results of this study suggested that the degree to which veterans withheld emotional responses was associated with PTSD. In another study aimed at evaluating experiential avoidance and forgiveness as mediators between interpersonal trauma (e.g., assaults, robbery, childhood sexual and physical abuse, IPV, stalking) and PTSD symptomatology among undergraduates, experiential avoidance was found to be a significant partial mediator (Orcutt, Pickett, & Pope, 2005). These

results suggest that experiential avoidance, or a general unwillingness to remain in contact with distressing internal experiences, may be a pathway for the development of PTSD symptoms.

In a series of three studies, Plumb, Orsillo, and Luterek (2004) examined the role of experiential avoidance in post-event psychological functioning in three samples: undergraduates who experienced a stressful life event, undergraduate students with a history of a traumatic event, and veterans seeking inpatient PTSD treatment (i.e., clinical, treatment-seeking sample). Data from undergraduates with history of a stressful life event revealed that experiential avoidance predicted psychological distress post negative life event beyond previous psychological distress (i.e., premorbid distress). For the other two samples, experiential avoidance was found to predict PTSD symptoms over and above both trauma severity and combat exposure (Plumb et al., 2004).

A number of studies have examined the role of experiential avoidance as a mediator between sexual victimization and posttraumatic stress symptoms. This body of literature is particularly important to conceptualizing posttraumatic stress related to IPV considering the previously discussed relationship between sexual abuse (childhood and adult), re-victimization, and PTSD. In a study of female undergraduates ( $N = 153$ ), Rosenthal and colleagues (2005) sought to assess whether avoidance mediated the relationship between severity of CSA and psychological distress. Consistent with findings from previous studies examining sexual victimization and psychological distress (Marx & Sloan, 2002; Polusny, Rosenthal, Aban, & Follette, 2004), engagement in

chronic avoidance or escape of distressing internal experiences mediated the relationship between CSA severity and trauma-related psychological distress in adulthood (Rosenthal et al., 2005).

In a study meant to expand findings from previous work examining experiential avoidance as a mediator between sexual victimization and psychopathology, Merwin, Rosenthal, and Coffey (2008) applied this model to an ethnically diverse sample. Participants for their study were female undergraduates who were divided into a Caucasian sample ( $n = 473$ ) and an ethnic minority sample ( $n = 190$ ). Results revealed that experiential avoidance mediated the relationship between sexual victimization (lifetime) and symptoms of depression and PTSD, two of the most commonly co-occurring disorders related to sexual victimization; these results occurred in both samples of women (Merwin et al., 2008).

### *Cognitive Fusion*

With acceptance based treatment approaches to PTSD, the focus is not on changing what is experienced (e.g., thoughts, feelings, memories) but rather how these events are experienced. In a sense, the ultimate goal can be thought of as transcending or undermining the power of language (Follette & Pistorello, 2007). One strategy to accomplish this is to address the issue of cognitive fusion, or over-identification with the content of words, via defusion techniques. In the simplest of terms, fusion can be viewed as how “hooked” one is on words (e.g., thoughts) and the

act of defusion is getting some distance or unhooking from the literal meaning of these words (Hayes et al., 1999; Hayes & Smith, 2005).

Relating this back to PTSD and experiential avoidance, the extent to which one engages in experiential avoidance can relate to the degree to which they fuse with cognitive content (Blackledge, 2004). In other words, if one is negatively framing their experiences and these experiences are taken as literal truths and reflections of reality, it is likely then that one would avoid situations that may have any relation to these frames. Holding thoughts and interpretations as literal truths regardless of real-world contingencies can become problematic in that individuals "can hold the content of [their] mind to be literally true; literally as *who [they] are*" (Walser & Westrup, 2007). For instance, the woman who experiences IPV may have the thought "I'm worthless, no one else will love me." It is possible for this individual to get "hooked" on this thought and view it as truth which may then lead to the conclusion that they are "not lovable" or "broken." This phenomenon is referred to as "fusion." As detailed by Blackledge (2004), there are several factors which may serve to increase access to aversive stimuli in individuals with posttraumatic stress. Of interest to this current study are the negative consequences of excessive cognitive fusion with negative self- and global-evaluations and aversive recollections of the trauma(s).

### *Fusion, RFT, and PTSD*

From an RFT perspective, one can become rigidly fused with trauma recollections in the same manner that they might become fused with a negative self-evaluation (e.g.,

“I’m no good”). Empirical evidence suggests that a relationship exists between negative self-evaluations and posttraumatic stress (Blackledge, 2004). Negative self-evaluations with relation to trauma survivors might take the form of guilt or shame. Consider the notion of “survivor guilt” and how survivors can come to relive experiences in search of a “solution” to how they could have done things differently. In this way, survivors can begin to find fault within themselves and experience guilt over trauma. Findings across studies have found that this self-blaming behavior occurs commonly in those with PTSD (e.g., Frazier & Schauben, 1994). Fusion with the verbal content of negative self-evaluations becomes problematic as it influences behavior. Specifically, fusion with thoughts can lead to behaviors that shape one’s world in such a way that thoughts are reinforced. For example, fusion with the thought “I am worthless” might lead a trauma victim to avoid interactions with others. As the victim continues to isolate and avoid contact with others, it is likely that their number of interpersonal relationships will decrease and eventually they will no longer have a social support network in place. In a vicious negative feedback loop, lack of social support would in turn reinforce the idea of being “worthless.”

Just as one can become fused with negative self-evaluations, it is also possible to become fused with negative global evaluations. In this instance, it is stimuli from the external environment that are negatively interpreted. In the case of a trauma victim, benign environmental stimuli may be perceived as threatening. This notion can be seen in the *DSM-IV* PTSD criteria of increased arousal (e.g., hypervigilance). One who is

hypervigilant experiences enhanced sensory sensitivity to their environment, with the purpose of detecting danger or threats.

### Perspective-Taking Relational Frames

Review of PTSD literature highlights that individuals with PTSD frequently respond to reliving of past traumatic events as if they were occurring in the present (McFarlane & Girolamo, 1996). Considering this from an RFT perspective, these individuals would appear to be rigidly fusing with the content of relational responses describing their past traumatic experiences. In terms of deictic frames, these individuals demonstrate poor distinction between the relations of here-there and now-then. As the formation of these relational repertoires has been found to follow a developmental pattern, it is hypothesized that these individuals may have poor learning histories that have not shaped the distinction between the relations (Blackledge, 2004). Recall that these relations are based on the establishment of the individual as the constant across changing environments. Critical to this development is the ability “discriminate that [one’s] own discriminating [of other stimuli] is always occurring from the same locus of perspective” (Barnes-Holmes, Steward, Dymond, & Roche, 2000). In other words, “I” represents the same perspective now as it did yesterday (McHugh, Barnes-Holmes, Barnes-Holmes, 2004b).

As shown in research investigating the feasibility of an RFT approach to perspective-taking (e.g., McHugh, Barnes-Holmes, & Barnes-Holmes, 2004a; McHugh et al., 2004b), it is the relational frames of here-there and now-then; and, in particular

now-then, that are the most complex. The complexity of establishing these relational frames requires a learning environment that provides sufficient learning experiences for mastery of these complex relational repertoires. In the absence of the ability to make these clear distinctions, it can seem to the individual that rather than being a constant, the self is defined by the content of moment to moment experiences. Subsequently, moment to moment experiences appear to the individual to be the “whole world” as well as the “whole self” (Blackledge, 2004). In a twist of the unique language abilities of verbal humans, one can come to “live in a derived, verbally regulated reality rather than experiencing the world as it unfolds in the here and now” (Walser & Westrup, 2007)

This blurring of the lines between past and present is evident in individual’s descriptions of re-experience of trauma (e.g., recollections, flashbacks). Thus, if one’s definition of self is based upon the content of the present moment, and the present moment is indistinguishable from past moments, then one’s re-experience of trauma may actually be experienced as the trauma re-occurring and in turn, present a threat to well-being (Blackledge, 2004). It is hypothesized that individuals who are affected by posttraumatic stress believe, or fuse with, the content of aversive cognitions to a greater degree than those who are able to adapt to traumatic experiences (Blackledge, 2004).

From an RFT perspective, it is assumed that the extent to which one relies rigidly on thoughts and verbalizations as “truths” about the world and the extent to which this fusion influences behavior may be a function of learning histories (Blackledge, 2004).



Just as each individual's learning history is unique to their own experiences, the extent to which they hold their thoughts as literally true varies. It is hypothesized that those who exhibit the effects of posttraumatic stress may have a tendency to adhere to rules more rigidly than those less impacted by their traumatic experiences (Blackledge, 2004). Perhaps this is one of the factors behind the difference in the number of people who have experienced trauma versus the number of people who exhibit symptoms of posttraumatic stress.

### *Assessing Perspective-Taking Abilities*

As it is hypothesized that language processes play an important role in the development and maintenance of PTSD symptoms, it is integral to establish a method to empirically test this notion. Traditionally, the cognitive skills of perspective-taking, false belief understanding, and deception have been most commonly associated with theory of mind (ToM). ToM involves the ability to attribute mental states (e.g., beliefs, intents, desires, knowledge) to oneself and others with the understanding that others have beliefs, desires, and intentions that are distinct from one's own. In the simplest of terms, theory of mind refers to the ability to "reflect on the content of one's own and other's minds" (Baron-Cohen, Tager-Flusberg, & Cohen, 2000). ToM is perhaps best known in relation to research with individuals who have autism. The body of this literature has found those with autism spectrum disorders to show early occurring mindreading deficits. It is believed that these cognitive deficits contribute to the

commonly seen communication and social functioning deficits in those with autism spectrum disorders.

According to ToM research, there are five levels of understanding through which it is believed that individuals progress in their development of perspective-taking (Howlin, Baron-Cohen, & Hadwin, 1999). Progress through these levels is sequential in that earlier acquired skills serve as prerequisites for later, more complex skills. Levels 1 to 3 form what is referred to as first-order tasks as they only involve inferring one person's mental state. The later levels, Levels 4 and 5, require more complex perspective-taking abilities and are referred to as second-order tasks.

The first of the five levels is simple visual perspective-taking which involves an understanding that different people see different things. In other words, Level 1 requires that an individual be able to adopt the perspective of another, based on visual information. This ability can be assessed by presenting an individual with a card containing two pictures (one on either side) so that each person can only see one side and then asking the individual what the other person sees. Level 2 involves complex visual perspective-taking, or the ability to understand that different people can see the same thing differently. For example, two people seated at opposite sides of a table would view a picture placed in the middle of the table differently (e.g., one sees image right side up, the other upside down). From here, one can progress to Level 3 which involves understanding informational states. This involves understanding the principle that "seeing leads to knowing." In other words, seeing an object (e.g., box with

pencils) would mean that you know it exists. Likewise, you know that if someone has not seen the object, then they would not know about it.

The second-order tasks (Level 4 and Level 5) are more complex and involve understanding of the attributions of true and false belief. Ability at this level requires consideration of "embedded mental states" (i.e., one person's states about other mental states) (Baron-Cohen et al., 2000). Level 4 requires the ability to predict actions on the basis of true belief. This involves the knowledge that one can only know what has been seen and therefore this can serve as the basis for actions. Level 5 involves the ability to predict actions on the basis of false belief. This involves consideration that one's own mental perspective has a casual impact on actions even when that perspective is incorrect. For example, if one was presented with a box with a picture of blocks on it and then asked what the box contained, a likely response would be "blocks." However, in reality, the box contained pencils. Upon learning that the box contained pencils, the individual would recognize that the first, incorrect guess was based on a false belief. This same individual could then be asked to predict what another person with no knowledge of the contents of the box might guess if presented with the same scenario. The ability to predict actions on the basis of false belief is thought to take its most complex form in deception (Baron-Cohen et al., 2000).

While predominantly investigated by cognitive psychologists, behavioral research has started to focus on understanding the development of perspective-taking utilizing RFT. An RFT perspective proposes that the relational frames of "I-you," "here-there," "now-then," form the foundation for perspective-taking and false belief understanding

(McHugh et al., 2004b; Barnes-Holmes, Barnes-Holmes, & Cullinan, 2001; McHugh et al., 2004a). As previously detailed, the relational frames of “I-you,” “here-there,” and “now-then” are classified as deictic frames and “specify a relation in terms of the perspective of the speaker” (McHugh et al., 2004a). From an RFT approach, the specific words used to describe these frames (e.g., “I,” “you”) are not crucial to perspective-taking properties. Instead, phrases that substitute words to describe individuals, places or times may suffice. These substituted words are functionally equivalent to and serve the same contextual function as the actual words used to describe the frames. For example, “It is lunch time [now] and Bill [you] is still at work [there] while I am waiting at the restaurant [here and now].”

Several studies have investigated the utilization of an RFT approach to measuring perspective-taking abilities. In an unpublished doctoral thesis, Barnes-Holmes (2001) detailed the development of a protocol for assessing the perspective-taking frames of “I-you,” “here-there,” and “now-then” in young children. As the protocol was designed for training purposes, it involved 265 trials. This study ( $N = 2$ , ages 3.5- and 7-year-olds) involved exposure to the extended perspective-taking protocol with corrective feedback given at each trial. Overall, the data from this study was found to be in line with ToM literature that shows that perspective-taking abilities are not typically exhibited by children younger than age 4 and that even in older children, these relational repertoires may not be fully developed.

McHugh et al. (2004a) utilized a shortened version of Barnes-Holmes (2001) test protocol to assess perspective-taking abilities. This shortened perspective-taking

protocol contained 62 trials assessing the development of the relational frames I-you, here-there, and now-then. Additionally, the protocol incorporated three levels of relational complexity across the perspective-taking tasks including: (a) simple relations, (b) reversed relations, and (c) double reversed relations. From an RFT perspective, a higher level of relational responding is required to derive reversed deictic relations. The highest level of relational complexity, double reversed relations, involves the simultaneous reversal of two different types of deictic relations. Examples of perspective-taking trials utilized by McHugh et al. (2004a) include:

Simple I-YOU: "I have a red brick and you have a green brick. Which brick do you have? Which brick do I have?"

Simple HERE-THERE: "I am sitting here on the blue chair and you are sitting there on the black chair. Where are you sitting? Where am I sitting?"

Simple NOW-THEN: "Yesterday I was watching television, today I am reading. What am I doing now? What was I doing then?"

Reversed I-YOU: "I have a red brick and you have a green brick. If I was you and you were me. Which brick would I have? Which brick would you have?"

Simple I-YOU with reversed HERE-THERE: "I am sitting here on the blue chair and you are sitting there on the black chair. If here was there and there was here: where would you be sitting? Where would I be sitting?"

Simple YOU within Double HERE-THERE/NOW-THEN Reversed: "Yesterday you were sitting there on the blue chair, today you are sitting here on the black chair. If

here was there and there was here and if now was then and then was now. Where would you be sitting now? Where would you be sitting then?"

Three studies were conducted by McHugh et al. (2004a) with this shortened perspective-taking protocol in an effort to establish a developmental profile of relational perspective-taking across age groups. In the first study, the 62-trial protocol was presented twice (first exposure served as practice exposure) to participants ( $N = 40$ ) across five age groups ranging from early childhood to adulthood. The age groups were broken down as follows: 3- to 5-year-olds (early childhood), 6- to 8-year-olds (middle childhood), 9- to 11-year-olds (late childhood), 12- to 14-year-olds (adolescence), and 18- to 30-year-olds (adulthood). Results from this study demonstrated that accuracy on the perspective-taking tasks increased as a function of age (i.e., youngest had significantly more errors overall, middle and late childhood had significantly more errors than adolescents and adults). In particular, performance varied according to relation type in that there was a significant difference between now-then and here-there simple relations and a significant difference between here-there and I-you reversed relations. Participants also exhibited a significant difference between now-then and I-you reversed relations. Overall, the data suggested that responding that required use of the now-then frame was the most difficult for participants while the I-you frame resulted in the lowest number of errors. With regard to relational complexity, there was found to be a significant difference between simple and reversed trials for all three relation types (i.e., significantly better performance on I-you simple relations than I-you reversed). As with the first study by Barnes-Holmes

(2001), these results were consistent with existing ToM literature that suggest that simple ToM tasks develop between the ages of 4 and 5 years old and are typically established by age 6 (Taylor, 1988).

In the second study of the series, McHugh et al. (2004a) addressed the question of whether the low accuracy rate in the younger children from the first study was a function of the length of statements for some of the trials. To control for this potential confounding factor, investigators added reversed and double reversed "foil" trial with a new set of participants for the two younger age groups (3- to 5-year-olds, 6- to 8-year-olds). The additional statements were equivalent in number of words as the original trials but did not incorporate complex relational responding. For example: "I am sitting here on the blue chair and you are sitting on the black chair. If here was here and there was there; Where would I be sitting? Where would you be sitting?" Results from the second study demonstrated that all participants exhibited significantly lower levels of errors on both the reversed and double reversed relations with the largest difference on the reversed relations. Thus, the requirement that a deictic relation be derived to attain the correct trial response rather than just statement length appeared to have contributed to some degree to the performance of the two younger age groups in the first study.

In the third study by McHugh et al. (2004a), the focus was on whether low rates of error occurred with the adult group as a result of experimenter cueing. In order to control for this potential confounding factor, an automated (computer) version of the protocol was utilized with an adult group. Results of this study found there to be no

significant difference between the performance of adults who were presented with “table-top” versus automated procedures. Thus, experimenter cueing was an unlikely confounding factor for the results of the first study.

In a study by McHugh, Barnes-Holmes, O’Hora, and Barnes-Holmes (2004), undergraduates ( $N = 32$ ) were given the perspective-taking protocol under four different experimental conditions: (1) extended perspective-taking protocol incorporating experimenter and visual aids, (2) extended protocol presented in written format without visual aids, (3) extended protocol with experimenter reading but no visual aids, and (4) abbreviated protocol (62 trials). After administration, mean errors were grouped and analyzed according to condition, relation type, and relational complexity. Results of this study found no significant difference among conditions one, two, and three (i.e., no effect for reading or visual aids). However, participants did demonstrate significant differences on their performance across relational type and relational complexity with better performance (fewer errors) for I-you relations than here-there relations. As with previous studies, participants also demonstrated significantly better performance on simple relations compared to both reverse and double reversed relations. Within the reversed and double reversed trials, participants exhibited stronger performance on reversed trials. For the fourth trial involving the automated protocol, participants again demonstrated significantly better performance on I-you relations versus here-there, and now-then relations. With regard to relational complexity, there was a significant difference between simple and both reversed and double reversed trials. However, unlike any other study, there was no significant



difference between performance on reversed and double reversed trials. Overall, it appears that adults, like their younger counterparts, exhibit differential performance according to the type of deictic relation, with I-you better than here-there and here-there better than now-then relations. Additionally, adults also demonstrated differential performance according to level of relational complexity with better performance on simple relations versus reversed or double reversed relations.

McHugh, Barnes-Holmes, and Barnes-Holmes (2003) have applied the shortened perspective-taking protocol to a normally developing child (age 4-years-old) in an effort to assess and establish relational perspective-taking. Their first observations indicated the presence of simple I-you and simple here-there relational but no apparent now-then relations. Explicit (non-derived) training was required for reversed and double reversed I-you and here-there relations. Additionally, extensive training was required to establish now-then responding for just simple relations.

In sum, the research pertaining to an RFT approach to perspective-taking indicate that relational repertoires required for perspective-taking appear to follow a developmental pattern, much like that detailed in the ToM literature. Results also provide support for the pursuit of RFT based investigation of perspective-taking. Based on the series of studies by McHugh and colleagues, it appears that the McHugh protocol (extended and shortened) has shown to be a reliable protocol for investigating perspective-taking across a wide range of age groups.

## Rationale for Current Study

Continued research on IPV and the psychological sequelae of IPV is critical to gaining a clearer picture of the magnitude of this public health problem as well as being a step toward developing more effective interventions and treatments (Graham-Bermann, Gruber, Howell, & Girz, 2009). While extent, severity, and type of violence have been identified as contributors to PTSD symptom severity, not all women need experience severe abuse to exhibit PTSD symptoms (Jones et al., 2001). Furthermore, not all women who experience IPV develop PTSD symptoms. These findings suggest the existence of other factors behind the abuse-trauma link. This study proposes to further investigate the abuse-trauma link by examining the relationship between type of abuse (i.e., psychological, physical), experiential avoidance, lifetime trauma exposure, and perspective-taking abilities (i.e., here-there, now-then). Furthermore, the assessment of experiential avoidance as mediator between IPV and PTSD has direct implications for future consideration of the application of ACT with IPV survivors.

Below are the proposed research questions and corresponding hypotheses:

Research Question 1. What is the relationship between PTSD, lifetime trauma exposure, type of abuse, and perspective-taking abilities?

- Hypothesis 1: Psychological abuse (Multidimensional Measure of Emotional Abuse; MMEA score) would correlate positively with physical abuse (Conflict Tactics Scale 2; CTS2 score).
- Hypothesis 2: Lifetime exposure to potentially traumatic events (Life Events Checklist; LEC score) would predict PTSD symptoms

(Posttraumatic Stress Disorder Checklist, Specific; PCL score) such that higher number of traumatic events would predict greater PTSD symptoms.

- Hypothesis 3: Type of abuse would predict PTSD symptoms such that psychological abuse (MMEA score) would predict PTSD symptoms over and above the effects of physical abuse (CTS2 score).
- Hypothesis 4: Perspective-taking ability (performance on McHugh et al. here-there, now-then items) would predict PTSD symptoms (PCL score) such that higher scores (i.e., mean number of errors) on a measure of perspective-taking ability would predict greater PTSD symptoms.

Research Question 2. How does experiential avoidance relate to PTSD, and does the presence of experiential avoidance affect the relationship between IPV and PTSD symptoms?

- Hypothesis 5: Experiential avoidance (Avoidance and Fusion Questionnaire for Youth; AFQ-Y score) would predict PTSD symptoms (PCL score) such that higher levels of experiential avoidance would predict higher levels of PTSD symptoms.
- Hypothesis 6: Experiential avoidance (AFQ-Y score) would mediate the relationship between IPV (CTS2 and MMEA scores) and PTSD symptoms (PCL score) such that higher levels of experiential avoidance would predict higher levels of PTSD symptoms than would lower levels

of experiential avoidance with the relationship between IPV and PTSD symptoms held constant.

## CHAPTER 2

### A STUDY OF IPV IN FEMALE UNDERGRADUATES

#### Method

#### *Participants*

Participants were recruited from a pool of undergraduate students taking courses at the University of North Texas. The inclusion criteria for the study included: (a) female, (b) English-speaking, (c) 18 years or older, and (d) report of at least one episode of physical violence and/or psychological abuse by a current or former intimate partner within the previous 12 months (Criterion D for Part II of study only). Of the total participants, 14 completed Part I only while 103 completed both Parts I and II. After initial data analysis, data from 97 participants was retained for analyses. As Part I was a screener for participation in Part II of the study, only data from participants who completed both parts of the study was utilized for data analyses. The average age for the sample ( $n = 97$ ) was 21.8 years ( $SD = 5.07$ ).

The projected sample size was determined by procedures outlined in Tabachnick and Fidell (2007). For most regression models, it is recommended that the sample size should be equal to or greater than  $50 + 8m$  (where  $m$  is the number of independent variables). Based on this equation and the five hypothesized predictors (e.g., physical abuse, psychological abuse, experiential avoidance, lifetime trauma, and perspective-taking ability), the current study required approximately 90 participants ( $50 + 8(5)$ ). More participants were recruited than needed to account for those who signed up but did not show for their scheduled time. Additionally, the oversampling accounted for the

fact that not everyone who completed Part I of the study would screen positive or for those who did, not everyone would consent to complete the second part of the study.

### *Measures*

Part I of the study involved completion of the Women Abuse Screening Tool (WAST) which served as a screener for participation for Part II. Participants who screened positive for partner violence and consented to Part II of the study completed the demographics questionnaire, Life Events Checklist (LEC), Conflict Tactics Scale 2 (CTS2), Multidimensional Measure of Emotional Abuse (MMEA), Posttraumatic Stress Disorder Checklist, Specific (PCL), Shipley 2 (Vocabulary), Avoidance and Fusion Questionnaire for Youth (AFQ-Y), and the McHugh et al. (2004) perspective-taking protocol.

Woman Abuse Screening Tool (WAST; Brown, Lent, Brett, Sas, & Pederson, 1996)

The Woman Abuse Screening Tool (WAST), originally created for use by family physicians, is an 8-item self-report abuse screening tool used to identify women experiencing intimate partner abuse. The first two questions of the WAST ("In general, how would you describe your relationship: a lot of tension, some tension, no tension?" and "Do you and your partner work out arguments: with great difficulty, some difficulty, no difficulty?") provide an initial assessment of the presence of abuse and constitute the WAST-Short. Use of these two questions as a short form has been found to correctly identify 91.7% of abused women and 100% of non-abused women (Brown et

al., 1996). The remaining questions on the full form WAST are meant to gain additional information regarding suspected abuse (e.g., hitting, emotional abuse, sexual abuse). While the original version of the WAST contains 7 items, the version utilized in this study included an eighth item ("Has your partner ever abused you sexually?") which was used by Brown, Lent, Schmidt, and Sas (2000) in their validation study of the WAST in a family practice setting. The first two items of the WAST are scored based on a criterion cutoff score of 1, where a score of 1 is given to the most extreme positive responses for each item (i.e., *a lot of tension, great difficulty*) and a score of 0 for the other responses. The other six WAST items are scored based on a scale of 1 (*often*) to 3 (*never*) and all 8 items are summed for a total score. Total scores on the WAST can range from 0 to 17, with lower scores indicative of possible abuse. For the purposes of this study, women who indicated some tension or a lot of tension on Item 1 or answered some difficulty or great difficulty in response to Question 2 about ease of solving arguments were asked to participate in the second part of this study. The rationale for this decision was based on the documented underreporting of intimate partner violence (IPV) (e.g., Tjaden & Thoennes, 2000a) as well as the speculation that due to its nature, some women may not consider psychological abuse to be as severe as physical abuse (e.g., Follingstad & DeHart, 2000). In the current study, WAST total scores ranged from 11 to 18.

Results from the initial validation study of the 7-item WAST found high internal consistency ( $\alpha = 0.95$ ). Additionally, the WAST demonstrated construct validity when total scores were compared to scores on the Abuse Risk Inventory (ARI;  $r = 0.96$ ). As

previously mentioned, there was also evidence of discriminant validity in that there were significant differences on overall and item scores between abused and non-abused women (Brown et al., 1996). In a follow-up validation of the 8-item WAST among the general population presenting for treatment in family physician offices, the WAST was found to have good internal consistency ( $\alpha = 0.75$ ) and construct validity when compared to the ARI ( $r = 0.69$ ). As in the original validation study, the 8-item WAST was found to successfully discriminate between abused and non-abused women based on total WAST scores in family practice settings (Brown et al., 2000). In the current sample, the 8-item WAST demonstrated low internal consistency ( $\alpha = 0.48$ ) on all items. However, when just the first two items which constitute the WAST-Short were analyzed, the internal consistency increased to an alpha of 0.61, which is considered acceptable. At the time of this study, no other research had yet documented the use of the WAST as screener for partner violence among an undergraduate sample. Thus, it is possible that the additional items beyond the WAST-Short (i.e., Items 1 and 2), may be endorsed differently by an undergraduate sample which may in turn affect internal consistency for the total WAST as compared to women presenting in a family practice setting.

### Demographics Questionnaire

Participants who qualified for and consented to Part II of the study were asked to complete a demographics questionnaire. Questions assessed participants' age, ethnicity, relationship status, education level, income, employment, and number of



children. Additionally, participants were asked to identify whether they have experienced one or more types of intimate partner violence (e.g., physical, emotional/verbal, sexual). Lastly, participants indicated whether they were still involved in a relationship with the perpetrator of the abuse.

Life Events Checklist (LEC; Gray, Litz, Hsu, & Lombardo, 2004)

The Life Events Checklist (LEC) is a 17-item screening measure of potentially traumatic events (PTEs). It was developed at the National Center for Posttraumatic Stress Disorder (PTSD) concurrently with the Clinician Administered PTSD Scale (CAPS); the intent was for the LEC to assess exposure to PTEs which are then further assessed with the CAPS (Gray et al., 2004). In comparison to other measures of PTE, the LEC is unique in its assessment of multiple types of exposure (e.g., happened to me, learned about it) for each specific PTE. The 17 items assess exposure to a wide array of PTEs including: natural disaster, fire/explosion, transportation accident, serious accidents, exposure to toxic substances, physical assault, assault with a weapon, sexual assault, other unwanted sexual experiences, combat or exposure to war-zone, captivity, life threatening illness, severe human suffering, violent death (e.g., homicide), unexpected death (e.g., family, friend), serious injury/harm/death caused to another person, and "other" stressful events or experiences. Respondents are instructed to consider their entire life when responding. For each item, the degree of exposure is reported on a 5-point nominal scale (1 = *happened to me*, 2 = *witnessed it*, 3 = *learned about it*, 4 = *not sure*, and 5 = *does not apply*). Of note, respondents can endorse more than one

level or magnitude of exposure to a PTE. For each item on the LEC, a score of one is assigned only if the respondent reported directly experiencing the event and a score of 0 is given if any of the other four responses was endorsed. Items are then summed to create a total LEC score. Based on previous research findings that PTSD symptom severity is strongly correlated with the number of traumatic experiences (King, Vogt, & King, 2004), this study utilized a total LEC score (i.e., total number of directly experienced traumas). Total scores on the LEC with a dichotomous scoring approach (i.e., 1 for direct exposure, 0 for all other forms of exposure) can range from 0 to 17. LEC total scores ranged from 0 to 9 in the current sample.

While the CAPS is considered the “gold standard” of PTSD measures and has well-documented psychometric properties, Gray and colleagues (2004) were the first to formally assess the psychometric properties of the LEC. Prior to their study, the LEC had primarily been used in clinical settings in conjunction with the CAPS. In a study of non-treatment seeking undergraduates ( $n = 108$ ), Gray et al. (2004) found that the test-retest reliability for the LEC was “reasonably stable” over approximately 7 days, both at the item and total score level. As a measure of direct trauma exposure (i.e., dichotomized items), only one of the LEC items was found to have an unacceptable kappa (i.e., less than 0.40); seven items had kappa coefficients above 0.60 and the mean kappa for all items was 0.61 with a retest correlation of  $r = 0.82$  ( $p < .001$ ). Reliability coefficients of some items which were later identified as having low base rates were not acceptable (e.g., exposure to severe human suffering). When compared to scores on the Traumatic Life Events Questionnaire (TLEQ; Kubany et al., 2000), the

total score correlation was  $r = -.55$ ,  $p < .001$  (lower scores on the LEC indicate more direct exposure). On an item-level, only one item failed to exhibit adequate convergent validity with the TLEQ ("sudden, unexpected death of a loved one"). When compared against measures of PTSD, both the LEC and TLEQ were similarly correlated to symptom severity ( $r = .34$  to  $.48$ ). For the current sample, the LEC demonstrated convergent validity with a measure of PTSD symptoms ( $r = .40$ ,  $p < .01$ ).

Conflict Tactics Scale 2 (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996)

The Conflict Tactics Scale 2 (CTS2; Straus et al., 1996) was used to assess the nature and extent of IPV. The CTS2 is a self-report measure that assesses occurrence and frequency of specific behaviors during interpersonal conflicts. It is widely used within IPV research to assess psychological, physical, and sexual abuse between partners over the course of the previous year. The measure consists of five subscales: Negotiation (e.g., "suggested a compromise to a disagreement"), Psychological Aggression (e.g., "insulted or swore at my partner"), Physical Assault (e.g., "pushed or shoved my partner"), Sexual Coercion (e.g., "used threats to make my partner have sex"), and Injury (e.g., "went to a doctor because of a fight with my partner").

Questions measure the behavior of the respondent as well as their partner (e.g., "I insulted or swore at my partner," followed by "my partner did this to me"). For the purposes of the current study, only responses about partner (and not self) behavior were analyzed. Further, because other measures of psychological aggression were utilized and other CTS2 scales (e.g., sexual coercion, injury) are not within the focus of

the current study, only responses on the Physical Assault scale were utilized in data analyses.

Responses on the CTS2 are based on experiences within the past year and are reported on a 6-point scale of response categories ranging from 1 = *once* to 6 = *more than 20 times*. There is also an option to report whether the event has occurred in the past (i.e., over 12 months ago) or never occurred. Each point on the scale indicates the number of times a particular act occurred with some categories containing a range (e.g., *3-5 times*, *6-10 times*, *11-20 times*). For this study, prevalence rates (i.e., percent of sample that reports one or more instances of each behavior) were calculated. Additionally, chronicity rates were calculated; chronicity refers to “how often, on average, a given behavior has occurred among those who report engaging at least once in the behavior or at least once in any behavior on the same scale” (Straus et al., 2003). These scores were determined by adding the midpoints for chosen response categories (midpoints are the same as the response category numbers for categories 0, 1, and 2). For example, choosing number 3 on the scale indicates that the behavior occurred 3-5 times over the past year; this would be recoded as a 4. Total scores can range from 0 to 975 based on recoded responses. Chronicity rates were compared to previously published means and standard deviations for the college reference sample provided by Straus et al. (2003). For the current sample, chronicity rates ranged from 0 to 29 on the Physical Assault scale. Within college undergraduate samples, the CTS2 has shown good internal consistency with alphas ranging from 0.79 for the psychological aggression subscale to 0.95 for the injury subscale (Straus et al., 1996).

For the current sample, the CTS2 Physical Assault subscale exhibited high internal consistency ( $\alpha = .73$ ).

#### Multidimensional Measure of Emotional Abuse (MMEA; Murphy & Hoover, 1999)

The Multidimensional Measure of Emotional Abuse (MMEA; Murphy & Hoover, 1999) is a 28-item self-report measure of psychological abuse. The MMEA was created with the intention of building upon the Psychological Aggression subscale of the CTS2; thus it assesses a broader range of behaviors with a similar response format to the CTS2. Of note, the MMEA represents a shift in conceptualization of psychological abuse from a unidimensional construct to a multidimensional construct (Ro & Lawrence, 2007). The four subscales that comprise the MMEA assess four distinct forms of emotional abuse, including: restrictive engulfment (e.g., “tried to stop the other person from seeing certain friends or family members”), hostile withdrawal (e.g., “acted cold or distant when angry”), denigration (e.g., “called the other person a loser, failure, or similar term”), and dominance/intimidation (e.g., “threw, smashed, or kicked something in front of the other person”). For each item, respondents report the number of times their partner as well as themselves have engaged in the behavior over the past 6 months.

Response choices are similar to the CTS2 and consist of a six-point scale of response categories ranging from 1 = *once* to 6 = *more than 20 times*. There is also an option to indicate if the behavior did not occur in the past 6 months but happened before or if the behavior has never happened. As with the CTS2, only responses about

partners' behavior were utilized in data analyses. Total scores for the MMEA were derived to assess the overall perpetration of psychological abuse by summing the midpoints for each response category. For example, an item endorsed as "4" (6-10 times) was recoded as an eight and responses of *more than 20 times* were recoded as twenty-five. This recoding was conducted because the MMEA has the same response categories as the CTS2 and is typically recoded in this fashion for comparison purposes with CTS2 scales (e.g., Ro & Lawrence, 2007). Based on this recoding, total MMEA scores can range from 0 to 700. Total measure scores ranged from 0 to 383 with the current sample. Within college samples, the MMEA has demonstrated high internal consistency for total score ( $\alpha = 0.92$  to  $0.93$ ) and satisfactory to high internal consistency for subscales ( $\alpha = 0.71$  to  $0.91$ ; Taft et al., 2005). Results of the current sample indicated good internal consistency for the total score of partner items on the MMEA ( $\alpha = 0.93$ ).

Posttraumatic Stress Disorder Checklist, Specific (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993)

The severity of posttraumatic stress symptoms among participants was assessed with the Posttraumatic Stress Disorder Checklist (PCL; Weathers et al., 1993). The PCL has a variety of purposes including screening for PTSD, diagnosing PTSD, and monitoring symptoms change during and after treatment. There are three versions of the PCL: (1) military (PCL-M), which assesses symptoms in response to "stressful military experiences," (2) civilian (PCL-C), which asks about symptoms in relation to

“stressful experiences” and (3) specific (PCL-S), which assesses symptoms related to an identified “stressful experience.” For this study, participants were administered the PCL-S and asked to think about their experiences of being in an abusive relationship as the identified stressful experience.

The PCL is a 17-item self-report measure based on the *Diagnostic and Statistical Manual of Mental Disorders*, 4<sup>th</sup> edition (*DSM-IV*) criteria for PTSD. Questions correspond to the key *DSM-IV* symptoms of re-experiencing (5), avoidance and numbing (7), and hyperarousal (5). For example, one item on the PCL asks “In the past month, how much have you been bothered by: repeated, disturbing memories, thoughts, or images of the stressful experience?” All responses are based on the past month and are recorded with a 5-point Likert-like scale (1 = *not at all* to 5 = *extremely*). For the purposes of this study, a total symptom severity score was obtained by summing the scores from each of the 17 items. Total PCL-S scores can range from 0 to 85 with an accepted cutoff score of 50 or greater for probable PTSD (Weathers et al., 1993). Scores from the current sample ranged from 17 to 75 on the PCL-S.

The PCL has demonstrated excellent psychometric properties with war veterans (Weathers et al., 1993) and the general population (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996). In a more recent study examining self-report measures of PTSD among college students, the PCL was found to have very good internal consistency ( $\alpha = 0.91$ ; Adkins, Weathers, McDevitt-Murphy, & Daniels, 2008). For the

current sample of college undergraduates, the PCL exhibited excellent internal consistency ( $\alpha = 0.93$ ).

ShIPLEY-2 (ShIPLEY, Gruber, Martin, & Klein, 2009)

The ShIPLEY-2 (ShIPLEY et al., 2009) is a brief measure of cognitive functioning and impairment. For the purposes of this study, only the Vocabulary subtest was administered. The Vocabulary subtest was intended as a measure of general verbal abilities as the ability to form deictic frames is related to verbal abilities (i.e., to ensure the investigation of deictic frame formation and not just merely more global verbal ability). Assessment of global verbal abilities allowed for examination of whether verbal abilities may have inflated mean number errors (e.g., due to poor comprehension). Further, it was expected that scores on the ShIPLEY-2 Vocabulary scale would exhibit an inverse relationship with mean number of errors on the perspective-taking protocol given that the formation of deictic frames is directly related to the development of general language skills. As with the original ShIPLEY, the ShIPLEY-2 scales exhibit moderate to high correlations with scales on the Wechsler Adult Intelligence Scale, Third Edition (WAIS-III; Wechsler, 1997). This includes high correlations between the ShIPLEY-2 Vocabulary scale and the WAIS-III Vocabulary ( $r = .82$ ) and Similarities ( $r = .71$ ) subtests. The ShIPLEY-2 Vocabulary score also exhibits a high correlation ( $r = .76$ ) with the WAIS-III Verbal Comprehension Index (ShIPLEY et al., 2009).

The ShIPLEY-2 Vocabulary subtest consists of 40 items; for each item, a target word is presented in all capital letters and four other words are presented next to the



target word (e.g., LARGE...red...big...silent...wet). Respondents are instructed to circle the word that has the same meaning as the one written in capital letters. This subtest is scored by summing all correct responses to create a raw score which is converted to a standard score based on age. Standard scores on the Shipley-2 Vocabulary can range from less than 25 to greater than 145. The current sample's Shipley-2 Vocabulary standard scores ranged from 76 to 127. Findings from adult samples revealed that the Shipley-2 Vocabulary scale has good internal consistency (ranging from 0.85 to 0.92), with a median alpha of 0.90 across all adult age groups (Shipley et al., 2009).

Avoidance and Fusion Questionnaire for Youth (AFQ-Y; Greco, Murrell, & Coyne, 2005)

Psychological inflexibility due to experiential avoidance and cognitive fusion was assessed with the Avoidance and Fusion Questionnaire for Youth (AFQ-Y; Greco et al., 2005). The AFQ-Y consists of 17 items that assess psychological inflexibility by measuring the extent to which examinees over-identify with their thoughts, feelings, bodily sensations, and related experiences. Though originally created and validated for use with children and adolescents, recent research has found the AFQ-Y to exhibit adequate psychometric properties with a college sample. In comparison to the current "gold standard" measure of experiential avoidance, the Acceptance and Action Questionnaire – II (AAQ-II; Bond et al., in press), the wording used in AFQ-Y items contains less technical language (Schmalz & Murrell, 2010). While the AFQ-Y was designed with a goal of creating a developmentally appropriate measure for young

children and adolescents, its items do not appear to be age specific and thus there is no indication that it would be inappropriate for use with adults (Schmalz & Murrell, 2010).

Sample items from the AFQ-Y include: "my life won't be good until I feel happy" (cognitive fusion), "I push away thoughts and feelings that I don't like" (experiential avoidance), "I don't try out new things if I'm afraid of messing up" (inaction in presence of unwanted internal experiences). Response choices are made on a 5-point scale from 0 (*not at all true*) to 4 (*very true*). A total AFQ-Y score is computed by summing the responses to all items; total scores can range from 0 to 68. With the current sample, the total AFQ-Y scores ranged from 2 to 51. Preliminary findings indicate that the AFQ-Y correlates positively with somatic complaints, anxiety, problem behavior, and thought suppression. Additionally, it has been found to correlate negatively with overall quality of life, mindfulness and acceptance (Greco, Lambert, & Baer, 2008). For children and adolescents, internal consistency within medical and community settings is good with alphas that range from 0.89 to 0.93. A recent study with a college undergraduate sample found that the AFQ-Y exhibited good internal consistency reliability ( $\alpha = 0.92$ ; Schmalz & Murrell, 2010). For the current undergraduate sample, AFQ-Y items were found to also have good internal consistency ( $\alpha = 0.88$ ).

#### McHugh et al. (2004a) Perspective-Taking Protocol

Relational perspective-taking (e.g., "I-you," "here-there," "now-then") was measured with the McHugh et al. (2004a) perspective-taking protocol. This protocol consists of 62 trials designed to assess three perspective-taking frames (I-you, here-

there, and now-then) as well as three levels of relational complexity (simple, reversed, and double reversed). Combinations of frames and relational complexity were presented via a paper-and-pencil measure across eight trial types. As implemented by McHugh et al. (2004a), there were three trial-types to assess simple relations across eight trials (i.e., two trials each for I-you and here-there, and four trials for now-then). Reversed relations were assessed across three trial-types over 36 trials (i.e., 8 I-you trials, 12 here-there trials, and 16 now-then trials). Two trial-types assessed double reversed relations across 18 trials (i.e., 6 I-you/here-there trials and 12 here-there/now-then trials). Examples of perspective-taking trials utilized by McHugh et al. (2004a) include: "I have a red brick and you have a green brick. Which brick do you have? Which brick do I have?" (simple I-you), "I have a red brick and you have a green brick. If I was you and you were me. Which brick would I have? Which brick would you have?" (reversed I-you). For the purposes of this study, items were typed out for self-report. The format included the trial (e.g., "Yesterday I was reading, today I am watching television. If now was then and then was now") followed by two questions (e.g., "what was I doing THEN?" "what would I be doing NOW?") with a choice of two responses under each (e.g., "television," "reading").

In order for a trial to be considered correct, both questions within the trial needed to be answered correctly. If one of the questions was incorrect or if both questions were incorrect, the overall trial was considered incorrect. For each trial, a one was scored for correct response to both questions and a 0 was scored for incorrect trials (i.e., one or more questions incorrect in trial). Possible total scores for mean

errors on each trial type included: 0 to 2 for I-you simple, 0 to 2 for here-there simple, 0 to 4 for now-then simple, 0 to 8 for I-you reversed, 0 to 12 for here-there reversed, 0 to 16 for now-then reversed, 0 to 6 for I-you/here-there double reversed, and 0 to 12 for here-there/now-then double reversed. Data from the current sample resulted in the following ranges for mean number of errors by trial type: 0 to 1 for I-you simple, 0 to 2 for here-there simple, 0 to 1 for now-then simple, 0 to 8 for I-you reversed, 0 to 12 for here-there reversed, 0 to 16 for now-then reversed, 0 to 6 for I-you/here-there double reversed, and 0 to 12 for here-there/now-then double reversed. As the use of this measure as a predictor for PTSD was novel, a combined variable of all here-there and now-then trial types (i.e., simple, reversed, double reversed) was created for the purposes of data analyses. The range of mean number of errors for this variable was 0 to 39 out of a possible range of 0 to 46.

#### Data Collection Procedure

The study was advertised via SONA, an online system utilized to recruit research participation, as a two-part study focused on “examining conflict in intimate relationships.” The first part of the study consisted of a brief screener to determine presence of conflict within a recent relationship (i.e., within past 12 months). Those participants whose responses to the screener indicated the presence of some conflict were asked to complete the second portion of the study (in the same session). The second part involved completion of a packet of measures including the demographics

questionnaire, LEC, CTS2, MMEA, PCL-S, Shipley-2 Vocabulary, AFQ-Y, and McHugh et al. (2004) perspective-taking protocol.

Before participation in the study, the procedure was explained and participants were asked to read and sign a copy of the Consent Form (Appendix). Upon agreement to participate, each participant was assigned an identification number to label all data relating to that particular participant. A master list linking participant identification numbers with participant names was destroyed after all data had been collected and analyzed and all participants received proper credit for participation. All data with any identifying information, including copies of signed informed consent forms were stored in a cabinet in a locked room in Dr. Amy Murrell's research lab (328) in Terrill Hall at the University of North Texas. All research assistants who have access to this research lab have been thoroughly trained in procedures necessary to protect participant confidentiality.

After completion of the Informed Consent form, each participant was administered the WAST to screen for the presence of at least some conflict within a recent relationship (i.e., past 12 months). Participants with negative screener results were thanked for their participation and informed that the study was complete. They were given SONA credit for a ½ hour of their time. Participants with positive screener results were asked to participate in Part II of the study which took place during the same session as Part I, eliminating the need for re-scheduling. A positive screen was a condition for participation in Part II but invited participants were free to decline participation in Part II. Consenting participants for Part II of the study were instructed

to complete the questionnaire packet in full, and not to skip any questions. The principal investigator and/or a research assistant were available to assist participants in understanding or defining any unknown terms. Participants were given approximately one hour to complete the questionnaire packet. Upon completion of the study, research assistants debriefed all participants and assigned credit through the UNT Psychology Department's SONA system. These participants were given 1 ½ hours worth of SONA credits. Additionally, all participants, for both Part I and II, were provided with a brochure detailing information about IPV and a list of local resources.

## CHAPTER 3

### TESTING INTIMATE PARTNER VIOLENCE IN FEMALE UNDERGRADUATES

#### Data Analysis

##### *Sample Demographics*

Descriptive statistics were gathered for data regarding age, relationship status, and ethnicity as reported on the demographic questionnaire. Additionally, percentages of self-report of intimate partner violence (IPV) type were calculated. In the sample for Part II, all participants were female as indicated in the inclusion criteria ( $n = 97$ ) and several ethnic groups were represented (see Table 1). Ethnic groups represented by participants included: Caucasian ( $n = 45$ ), African American/Black ( $n = 22$ ), Native American ( $n = 1$ ), Asian ( $n = 5$ ), Hispanic or Latino ( $n = 22$ ), and biracial/multiracial ( $n = 2$ ). Age of participants ranged from 18 to 43, with a mean age of 21.8 years old ( $SD = 5.07$ ).

With regard to self-report of IPV type, emotional/verbal abuse (only) was the most commonly reported (78.5%). This finding was similar to previous studies of intimate partner violence which found high rates of psychological abuse among college undergraduates (e.g., Hines & Saudino, 2003; White & Koss, 1991). Several individuals reported poly-traumatization, including physical and emotional/verbal abuse (12.7%), emotional/verbal and sexual abuse (3.8%), and physical, emotional/verbal, and sexual abuse (3.8%). The cumulative percent of each trauma type (i.e., summation of singular and poly-trauma) can be found in Table 2. Of the 86 individuals who responded to the relationship status question, a total of 35 participants (40.7%)

Table 1

*Descriptive Statistics for Sample*

	Frequency	Percent
Ethnicity ( $n = 97$ )		
Caucasian (White)	45	46.4%
African American (Black)	22	22.7%
Native American (Indian)	1	1.0%
Asian	5	5.2%
Hispanic (Latino, Latina, Mexican)	22	22.7%
Biracial/Multiracial	2	2.1%
Type of IPV ( $n = 79$ )		
Physical (only)	1	1.3%
Emotional/Verbal (only)	62	78.5%
Sexual (only)	0	0%
Physical & Emotional/Verbal	10	12.7%
Physical & Sexual	0	0%
Emotional/Verbal & Sexual	3	3.8%
Physical, Emotional/Verbal, & Sexual	3	3.8%
Relationship Status with Perpetrator ( $n = 86$ )		
Currently involved	35	40.7%

*Note.* IPV = Intimate partner violence



Table 2

*Descriptive Statistics for Self-Report IPV Type*

Type of IPV ( <i>n</i> = 79)	Cumulative Percent
Physical	17.8%
Emotional/Verbal	98.8%
Sexual	7.6%

*Note.* Cumulative percent derived from summation of singular and poly-trauma as reported on demographics questionnaire.

reported being currently involved with the perpetrator of the abuse. Of note, the demographic questionnaire questions regarding type of IPV experienced and relationship status with perpetrator of abuse were the two questions with the highest non-response rate (*n* = 79 and 86, respectively).

*Measures*

Internal consistency reliability coefficients for the current sample were calculated for the following measures: Woman Abuse Screening Tool (WAST), Conflict Tactics Scale 2 (CTS2; physical assault), Multidimensional Measure of Emotional Abuse (MMEA), Posttraumatic Stress Disorder Checklist, Specific (PCL-S), and Avoidance and Fusion Questionnaire for Youth (AFQ-Y). Means and standard deviations were calculated for the entire sample for each scale. Results of these analyses can be found in Table 3.

## Preliminary Data Analysis

Distribution and pattern of missing data was evaluated based on procedures outlined in Tabachnick and Fidell (2007). One case was immediately removed due to incompleteness of half of the measures of interest, including the preliminary abuse screener, and pattern of responses for completed measures (e.g., almost all zeros). Next, the pattern of missing data was analyzed, including examination of absolute number of missing data points and their percentages. With the exception of seven cases, the missing data appeared to be random in nature. The seven cases identified as the exception each failed to complete one of the outcome measures (e.g., PCL-S, CTS2). When compared to the rest of the sample, these seven cases did not differ significantly on other completed measures of interest (e.g., MMEA). As the missing data for these participants was limited to only one outcome measure for each, they were retained in the overall sample and their data was utilized in analyses, where appropriate (i.e., completed outcome measure utilized in analysis).

While there were a few cases of individuals not completing an entire measure, all of the remaining missing data points accounted for less than 10% on any individual variable. As recommended by the Center for Disease Control (2010), 10% is considered an acceptable level of missing data. For those measures with total scores based on the sum of all items (e.g., PCL-S, MMEA), mean substitution based on the individual's mean response of other items for the measure was implemented for missing data points.

Table 3

*Descriptive Statistics and Correlations among Key Variables*

Variables	M	SD	Possible Range	Observed Range	1.	2.	3.	4.	5.	6.	7.
1. McHugh	16.68	8.59	0-46	0-39	----	-.18*	-.05	-.04	-.08	-.00	-.08
2. Shipley-2	101.34	10.88	25-145 <sup>+</sup>	76-127		----	-.01	.01	-.09	.06	.01
3. LEC	2.85	2.04	0-17	0-9			----	.40**	.25**	.40**	.29**
4. CTS2	4.46	8.21	0-975	0-29				(.73)	.40**	.32**	.31**
5. MMEA	100.41	104.68	0-700	0-383					(.93)	.45**	.43**
6. PCL-S	34.83	13.58	0-85	17-75						(.93)	.72**
7. AFQ-Y	22.39	11.77	0-68	2-51							(.88)

*Note.* McHugh = McHugh et al. (2004a) Protocol (Here-There/Now-Then combined); Shipley-2 = Shipley 2 Vocabulary; LEC = Life Events Checklist; CTS2 = Conflict Tactics Scale 2 (Physical Assault); MMEA = Multidimensional Measure of Emotional Abuse; PCL-S = Posttraumatic Stress Disorder Checklist (Specific); AFQ-Y = Avoidance and Fusion Questionnaire for Youth. Values enclosed in parentheses represent Cronbach's Alpha for the measure.

\*  $p < .05$ , \*\*  $p < .01$  (one-tailed)

Following screening procedures outlined by Tabachnick and Fidell (1996), standardized scores and frequency histograms were examined for univariate outliers on variables relevant to hypothesis testing including: lifetime trauma exposure (total Life Events Checklist score), physical abuse (CTS2 Physical Assault score), psychological abuse (total MMEA score), combined IPV (CTS2 Physical Assault and MMEA scores), experiential avoidance (total AFQ-Y score), posttraumatic stress (total PCL-S score), verbal ability (Shipley-2 Vocabulary score), and perspective-taking (total here-there/now-then errors). A total of five cases were identified as outliers, with all cases reporting the highest score for either the CTS2 or MMEA. The impact of these univariate outliers was resolved through transformation of variables to create a more normal distribution. Specifically, the scores of the outliers were changed to one unit higher than the next highest non-outlier (Tabachnick & Fidell, 2007). For example, if the outlier's score was 95 and the next highest non-outlier score was 80, the outlier's score was transformed to 81. Computation of Mahalanobis distance values revealed five multivariate outliers ( $p < .001$ ). Examination of the data did not indicate a clear pattern of why these individuals were outliers, however, due to their nature of being outliers on multiple variables, these cases were removed from the data set.

Skewness and kurtosis data were examined to determine distributions of variables that deviated significantly from the normal distribution for variables measuring lifetime trauma exposure, physical abuse, psychological abuse, combined IPV, experiential avoidance, posttraumatic stress, verbal ability, and perspective-taking ability. Excessive skewness and kurtosis was determined by calculating ratios for both

skewness and kurtosis (e.g., skewness/standard error of skewness, kurtosis/standard error of kurtosis) for each measure. Skewness and kurtosis coefficients were considered to be significant if the absolute value of the ratio was greater than three. Three variables were identified as requiring data transformation due to high levels of skew and kurtosis. The first variable transformed was the Life Events Checklist (LEC) total score, which was normalized through use of a square root transformation due to its moderate positive skew. Because the CTS2 Physical Assault (partner) score exhibited a severe positive skew, it was normalized with an inverse transformation. The third variable that required transformation was the total partner score for the MMEA. This variable exhibited a moderate positive skew and was normalized with a square root transformation.

A correlation matrix was constructed to examine the relationship among lifetime trauma exposure, physical abuse, psychological abuse, combined IPV, experiential avoidance, posttraumatic stress, verbal ability, and perspective-taking ability. The results of this correlation matrix are presented in Table 3. Notably, 11 out of 21 correlations were statistically significant ( $p < .05$ ). As theorized, perspective-taking ability was significantly correlated with verbal ability (Shipley-2) with higher number of errors inversely related to verbal ability. Exposure to lifetime traumas (LEC) was significantly correlated with physical (CTS2 Physical Assault) and psychological (MMEA) abuse as well as posttraumatic stress symptomatology (PCL-S). Consistent with previous research, physical (CTS2 Physical Assault) and psychological (MMEA) abuse were related to each other and significantly correlated with posttraumatic stress

disorder (PTSD) symptoms (PCL-S). Experiential avoidance (AFQ-Y) was significantly correlated with lifetime trauma exposure (LEC), physical abuse (CTS2 Physical Assault), psychological abuse (MMEA), and posttraumatic stress (PCL-S).

## Results

### *Descriptive Statistics for IPV*

Preliminary descriptive statistics were gathered for data regarding physical and psychological IPV. Based on responses to the CTS2 Physical Assault scale (partner), over half (54.3%) reported no incidence of physical violence in their relationship over the past year. This means that the prevalence rate for at least one act of physical violence within the past year was 45.7%, which is consistent with previous research findings (e.g., Próspero & Vohra-Gupta, 2007). The mean chronicity value for physical assault based on the CTS2 was 4.46 ( $SD = 8.21$ ), which is lower than the college student reference sample ( $M = 9.3$ ,  $SD = 18.0$ ) provided by Straus, Hamby, and (2003). Of note, this percentage was significantly higher than was reported when participants were asked directly to specify their perceived IPV experience on the demographics questionnaire. With regard to psychological abuse, results from the MMEA (partner total score) indicate that 94.8% of participants reported experiencing at least one act of psychological abuse within the past year. Of note, this value is close to the cumulative percent self-report on the demographics questionnaire (98.8%). However, both of these high values are generally consistent with the observed 80-90%

range in previous research assessing psychological abuse among college students (Hines & Saudino, 2003; White & Koss, 1991).

### *Descriptive Statistics for Lifetime Trauma*

Table 4 provides information on the percentage of lifetime exposure to each potentially traumatic event (PTE) as listed on the LEC. The majority of the current sample (87.6%) reported directly experiencing at least one PTE during their lifetime. This finding is very close to results from Frazier and colleagues (2009) who found that 85% of their sample reported experiencing at least one traumatic event during their lifetime. For this current study, the three most commonly reported events included: transportation accident (52.6%), "other" stressful event or experience (47.4%), and "other" unwanted or uncomfortable sexual experience (41.2%). Captivity (3.1%), exposure to toxic substance (3.1%), serious injury/harm/death caused to someone else (2.1%), and combat or exposure to war zone (1.0%) were the least common events. On average, participants reported experiencing three PTEs ( $M = 2.85$ ,  $SD = 2.04$ ) over the course of their lifetime.

### *Descriptive Statistics for Posttraumatic Stress*

Descriptive statistics were gathered for data regarding posttraumatic stress symptomatology based on responses to the PCL-S with the abusive relationship specified as the stressful experience. The mean total score for the PCL-S was 34.83 ( $SD = 13.58$ ).

Table 4

*Potentially Traumatic Events (PTEs) (n = 97)*

Rank No.	Event	Frequency	Percent
1.	Transportation accident	51	52.6%
2.	Any other stressful event or experience	46	47.4%
3.	Other unwanted or uncomfortable sexual experience	40	41.2%
4.	Physical assault	31	32.0%
5.	Natural disaster	25	25.8%
6.	Serious accident at work, home, or during recreational activity	23	23.7%
7.	Sexual assault	16	16.5%
8.	Life-threatening illness or injury	13	13.4%
9.	Assault with a weapon	8	8.2%
10.	Severe human suffering	4	4.1%
10.	Fire or explosion	4	4.1%
11.	Captivity	3	3.1%
11.	Exposure to toxic substance	3	3.1%
12.	Serious injury, harm, or death you caused to someone else	2	2.1%
13.	Combat or exposure to a war-zone	1	1.0%

*Note.* PTEs based on items endorsed as *happened to me* on Life Events Checklist (LEC).



Based on a cutoff score of 50, approximately 15% of participants met criteria for probable PTSD. While specific to the experience of IPV, this finding is consistent with previous results from PTSD screening measures indicating that 10-15% of college students report symptoms that would meet full or partial PTSD criteria (Borsari et al., 2008). The three most highly endorsed items (i.e., “moderately” or above) were (1) feeling very upset when reminded of the stressful experience, (2) avoiding thinking about or talking about the stressful experience or avoiding having feelings related to it, and (3) repeated, disturbing memories, thoughts, or images of the stressful experience.

### *Perspective-Taking Ability*

In order to ensure that participants' performance on relational perspective-taking is not due to impaired verbal abilities (e.g., reading or comprehension difficulties), a series of bivariate correlations were conducted examining the correlations of Vocabulary scale scores on the Shipley-2 and mean number of errors for the perspective-taking protocol. Results indicated that verbal abilities as measured by the Shipley-2 were significantly correlated with combined simple and reversed performance for now-then ( $r = -0.04, p < .05$ ) and total here-there/now-then performance across simple, reversed, and double reversed trial types ( $r = -0.18, p < .05$ ). As deictic frames follow a developmental trajectory and require verbal abilities, a relationship between verbal ability and perspective-taking performance was anticipated. While significant, both of these relationships suggest weak negative correlation between verbal ability and mean number of errors on deictic frames; with higher verbal abilities inversely related to

number of errors. Thus, it does not appear that performance on the McHugh et al. (2004a) perspective-taking protocol was merely measuring verbal ability.

Based on previous research and the developmental trajectory of deictic frames, it was theorized that performance would vary across frame type and complexity level. The mean number of errors for each trial type is depicted in Figure 1. As expected, the fewest number of mean errors occurred on the simple trials: I-you ( $M = 0.07$ ,  $SD = 0.26$ ), here-there ( $M = 0.06$ ,  $SD = 0.28$ ), and now-then ( $M = 0.03$ ,  $SD = 0.17$ ).

Performance on the next level of relational complexity, reversed, indicated higher number of mean errors as would be expected. Additionally, mean errors were higher for the more complex here-there and now-then frames than I-you. However, participants exhibited the highest number of mean errors on the here-there reversed frames ( $M = 6.69$ ,  $SD = 4.73$ ) which is considered to be higher in complexity than I-you frames ( $M = 0.94$ ,  $SD = 1.80$ ) but not as complex as now-then frames ( $M = 2.37$ ,  $SD = 4.17$ ). Performance on the here-there reversed items also revealed a higher number of mean errors than was observed for the I-you/here-there double reversed frames ( $M = 3.78$ ,  $SD = 2.45$ ). Again, this was an unexpected finding as double reversed relationships are considered to be the highest level of relational complexity. With the highest number of mean errors across trial types, results from the here-there/now-then double reversed items ( $M = 7.53$ ,  $SD = 4.53$ ) supported the notion that double reversed and now-then and here-there frames represent the highest level of complexity. Based on the theory that PTSD symptomatology is related to poor abilities on both here-there and now-then deictic frames (i.e., one is not considered to impact

more than the other), a new variable was constructed that consisted of performance on here-there and now-then frames across all three levels of relational complexity (i.e., simple, reversed, double-reversed). The mean number of errors for overall performance across all here-there and now-then items was 16.68 ( $SD = 8.59$ ).

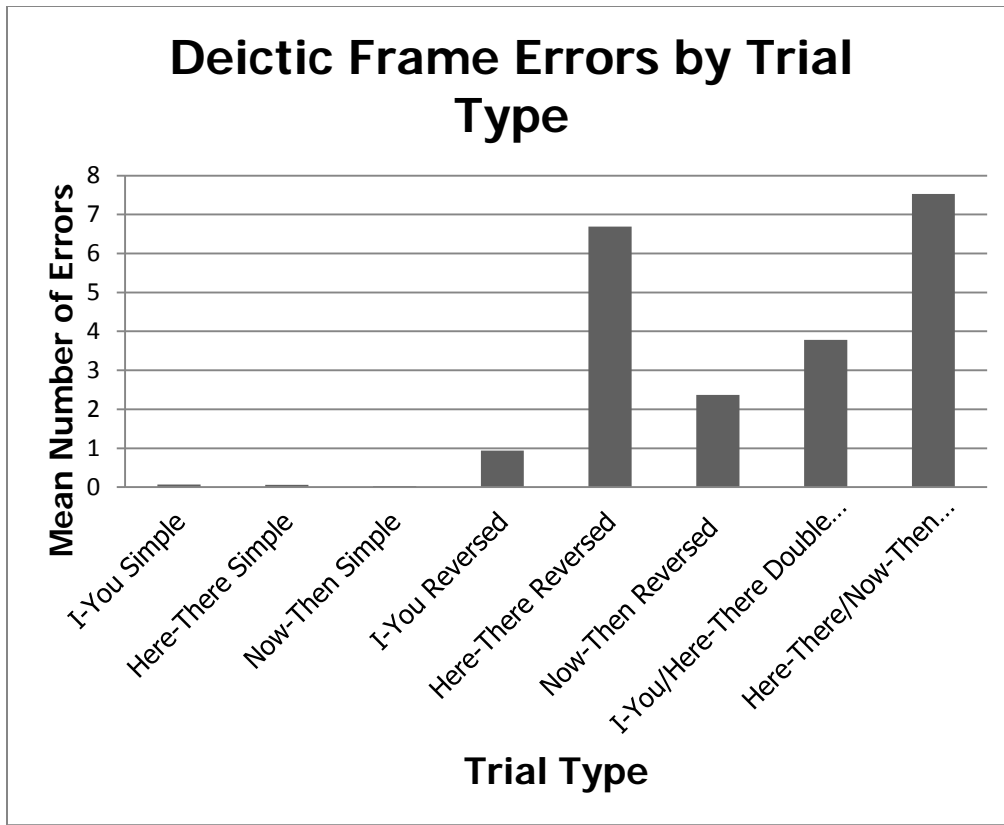


Figure 1. Mean number of errors on McHugh et al. (2004) perspective-taking protocol by trial type ( $n = 97$ ).

### Hypothesis Testing

Prior to conducting further statistical analyses, assumptions regarding each statistical test were evaluated through examination of graphs of data and/or statistical analysis. Assumptions for multiple regression were tested including multicollinearity

among the predictors. This assumption was met as correlations among LEC scores, CTS2 Physical Assault (partner) scores, MMEA (partner) scores, and here-there/now-then combined performance scores did not exceed  $r = 0.90$  (see Table 3). Collinearity coefficients of Tolerance and Variance Inflation Factor (VIF) were also examined. Results of collinearity statistics revealed that all Tolerance coefficients were greater than 0.10 and all VIF coefficients were less than 10, indicating that the multicollinearity assumption was not violated (Tabachnick & Fidell, 1996).

Additional preliminary analyses were conducted to assess for any violations of the assumptions of normality, linearity, and homoscedasticity. As previously noted, univariate and multivariate outliers were identified and addressed by transformation (univariate) or deletion of cases (multivariate). Assumptions of linearity, homoscedasticity, and homogeneity of error variance were examined by visual inspection of a series of scatterplots. The majority of plots were distributed as expected, however, the perspective-taking ability (i.e., mean number of here-there/now-then errors) appeared heteroscedastic. According to Tabachnick and Fidell (2001) heteroscedasticity is not necessarily fatal to an analysis (i.e., not invalidated); rather, the analysis is weakened. Therefore, the decision was made to move forward with the analyses as planned.

### *Hypothesis 1*

Related to the research question regarding the relationship between PTSD symptomatology, lifetime trauma exposure, IPV type, and perspective-taking abilities, it

was hypothesized that psychological abuse would correlate positively with physical abuse. Bivariate correlation analyses indicated that psychological abuse, as measured by the MMEA (partner), was significantly positively correlated with physical abuse, as measured by the CTS2 Physical Assault scale (partner) ( $r = 0.40, p < .01$ ). These results supported Hypothesis 1.

#### *Hypotheses 2, 3, and 4*

Hypotheses 2, 3, and 4 stated that lifetime exposure to potentially traumatic events, type of abuse, and perspective-taking ability would predict PTSD symptoms. These hypotheses were tested with a multiple hierarchical regression analysis. The criterion for this analysis was the total PTSD symptomatology as measured by the PCL-S, with the abusive relationship specified as the stressful life experience. The predictors consisted of the LEC total score, CTS2 Physical Assault (partner) total score, MMEA (partner) total score, and perspective-taking ability (here-there and now-then combined performance). The analysis was run with five blocks; the first block consisted of demographic variables (e.g., age, ethnicity) in order to control for any potential effects these variables may have on the criteria or predictor variables. Next, LEC total score was entered because of the strong empirical support for the relationship between number of stressful life events (i.e., PTEs) and PTSD symptomatology. Furthermore, it has been hypothesized that the negative effects of multiple adverse life events outside of IPV can potentially overshadow the effects of IPV alone (Graham-Bermann, Sularz, & Howell, 2011). CTS2 Physical Assault (partner) scores were entered next in the third

block ahead of psychological abuse because of the extensive body of research linking physical abuse to PTSD symptoms. As a growing number of studies have found psychological abuse to be as strong or sometimes even stronger predictor of PTSD than physical abuse, psychological abuse determined by the MMEA (partner) total score was entered in the fourth block. The final predictor entered into the model was the combined errors for here-there/now-then on the McHugh et al. (2004) perspective-taking protocol. This variable was entered last as there is no current empirical support to indicate the relationship with PTSD symptomatology. A total of 95 participants were included in the hierarchical multiple regression. The means, standard deviations, and ranges for the predictor and criteria variables for the current sample can be found in Table 5. The *B*, Standard Error of *B*, and  $\beta$  for each step are presented in Table 6.

Table 5

*Descriptive Statistics for Sample used in Hypothesis Testing (n = 95)*

Variable	<i>M</i>	<i>SD</i>	Range
PCL-S Total Score	34.37	13.36	17-75
LEC Total Score	2.85	2.04	0-9
CTS2 Physical Assault (partner)	4.46	8.21	0-29
MMEA (partner)	100.41	104.68	0-383
Total Perspective-taking	16.83	8.70	0-39

*Note.* PCL-S = Posttraumatic Stress Disorder Checklist (Specific); LEC = Life Events Checklist; CTS2 = Conflict Tactics Scale 2 (Physical Assault); MMEA = Multidimensional Measure of Emotional Abuse; McHugh = McHugh et al. (2004) perspective-taking protocol (Here-There/Now-Then combined).

Table 6

Summary of Hierarchical Regression Analysis for Variables Predicting PTSD ( $n = 95$ )

	Variable	<i>B</i>	<i>SE B</i>	$\beta$
Step 1	Constant	33.81	7.10	
	Age (years)	.11	.30	.04
	Ethnicity	-.75	.82	-.10
Step 2	Constant	18.96	7.62	
	Age (years)	-.16	.29	-.06
	Ethnicity	-.20	.77	-.03
	Lifetime Trauma (LEC)	10.31	2.65	.40***
Step 3	Constant	25.95	8.55	
	Age (years)	-.15	.28	-.06
	Ethnicity	-.09	.77	-.01
	Lifetime Trauma (LEC)	8.40	2.84	.33**
	Physical Abuse (CTS2)	6.00	3.46	.19
Step 4	Constant	13.94	8.88	
	Age (years)	-.08	.27	-.03
	Ethnicity	.49	.75	.06
	Lifetime Trauma (LEC)	7.96	2.70	.31**
	Physical Abuse (CTS2)	2.15	3.48	.07
	Psychological Abuse (MMEA)	.86	.26	.34**
Step 5	Constant	13.23	9.02	
	Age (years)	-.10	.27	-.04
	Ethnicity	.42	.76	.05
	Lifetime Trauma (LEC)	8.00	2.71	.31**
	Physical Abuse (CTS2)	2.17	3.50	.07
	Psychological Abuse (MMEA)	.86	.26	.34**
	Perspective-taking (McHugh)	.08	.15	.05

Note.  $R^2 = .01$  for Step 1;  $\Delta R^2 = .15$  for Step 2 ( $ps < .001$ );  $\Delta R^2 = .03$  for Step 3;  $\Delta R^2 = .09$  for Step 4 ( $ps < .01$ );  $\Delta R^2 = .00$  for Step 5. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

## Hypothesis 2

Hypothesis 2 stated that lifetime exposure to potentially traumatic events (LEC score) would predict PTSD symptoms (PCL score) such that higher number of traumatic events would predict greater PTSD symptoms. Following control for possible confounding demographic variables (e.g., age, ethnicity), the total LEC score was

entered into Step 2 of the regression. Lifetime exposure to PTEs explained 16% of the variance in PTSD symptoms ( $R^2 = .16$ ,  $b = 10.31$ ,  $p < .001$ ). Thus, data supported Hypothesis 2.

### Hypothesis 3

Hypothesis 3 stated that type of abuse would predict PTSD symptoms such that psychological abuse would predict PTSD symptoms over and above the effects of physical abuse. As noted previously, physical abuse was entered into the hierarchical multiple regression prior to psychological abuse based on empirical support. Entry of physical abuse (CTS2) into the model increased variance accounted for to only 19% ( $R^2$  change = .03,  $b = 6.0$ ). However, once psychological abuse (MMEA) was entered into the fourth block, the model as a whole accounted for 28% of the variance in PTSD symptoms ( $R^2$  change = .09,  $b = .86$ ,  $p < .01$ ). These results indicate that physical abuse alone did not account for a significant proportion of the variance in PTSD symptoms over and above lifetime trauma exposure scores. While this fails to support part of the hypothesis for physical abuse as a predictor of PTSD symptoms, the addition of psychological abuse to the model suggests that psychological abuse is a significant predictor. Specifically, it appears that psychological abuse was a stronger predictor of PTSD symptomatology than physical abuse in the current sample. Thus, the overall hypothesis that psychological abuse predicts PTSD over and above physical abuse was supported.



#### Hypothesis 4

Hypothesis 4 stated that perspective-taking ability (i.e., performance on here-there/now-then deictic frames) would predict PTSD symptoms such that higher mean errors on perspective-taking would predict greater PTSD symptoms. In the final step of the regression analysis, perspective-taking ability (here-there/now-then) was entered into the model, resulting in no increase in variance accounted for by the model ( $R^2$  change = .00,  $R^2 = .28$ ,  $b = .08$ ). Therefore, the hypothesis that perspective-taking ability would predict PTSD symptomatology was not supported.

#### *Hypotheses 5 and 6*

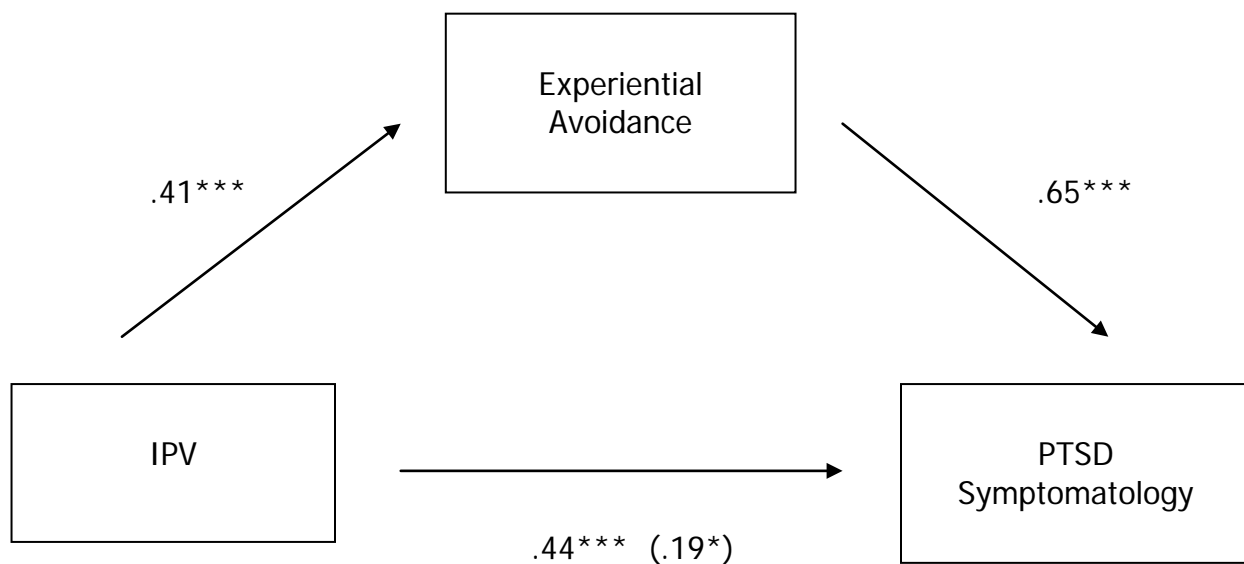
Hypotheses 5 and 6 were proposed in relation to the research question “how does experiential avoidance relate to PTSD, and does the presence of experiential avoidance affect the relationship between IPV and PTSD symptoms?” To create a total IPV score to utilize in analysis, the CTS2 Physical Assault (partner) and MMEA (partner) variables were standardized and z-scores were calculated. The total IPV score used in mediator analysis was calculated by summing these z-scores.

A mediator analysis was conducted as outlined by Baron and Kenny (1986) and supplemented with testing to assess the significance of the mediated effect as recommended by Frazier, Tix, and Barron (2004). Following this method, the first step was to establish the existence of a significant relationship between IPV (predictor) and PTSD symptoms (outcome). Results of this regression were significant ( $R^2 = .19$ ,  $F(1, 93) = 22.16$ ,  $p < .001$ ). Specifically, chronicity of IPV (i.e., number of occurrences)

significantly predicted PTSD symptomatology ( $\beta = .44$ ). Thus, the criterion for mediation as defined by Baron and Kenny (1986) was met.

The second step of the analysis required establishing that IPV (predictor) is correlated with experiential avoidance (mediator). This model was significant, indicating that IPV was significantly correlated with experiential avoidance ( $R^2 = .17$ ,  $F(1, 95) = 19.26$ ,  $\beta = .41$ ,  $p < .001$ ). Therefore, the second criterion for mediation was met. For the third and fourth steps of the mediational test, the relationship between experiential avoidance (mediator) and PTSD symptoms (outcome) was examined. This was accomplished with a regression in which PTSD symptoms (PCL-S scores) was identified as the criterion variable and IPV scores (CTS2 and MMEA) and experiential avoidance (AFQ-Y) were selected as predictors. Results of step one of this regression were significant, indicating that IPV significantly predicted PTSD symptoms ( $R^2 = .19$ ,  $F(1, 93) = 22.16$ ,  $\beta = .44$ ,  $p < .001$ ). Once the effects of IPV were accounted for, experiential avoidance was added to the model with significant results ( $R^2 = .55$ ,  $F(2, 92) = 55.82$ ,  $p < .001$ ). While IPV accounted for 20% of the variance for PTSD symptoms, the addition of experiential avoidance increased the variance accounted for by the whole model to 55% ( $R^2$  change =  $.36$ ,  $R^2 = .55$ ,  $\beta = .65$ ,  $p < .001$ ). Furthermore, the standardized beta coefficient for IPV was reduced to  $.19$ . Results supported Hypothesis 5 in that experiential avoidance significantly predicted PTSD symptoms, with higher levels of experiential avoidance related to higher levels of PTSD symptoms.

The approach based on Baron and Kenny (1986) was supplemented with Sobel's test. The test statistic for the Sobel test was 3.90 ( $p < .001$ ), indicating that the inclusion of experiential avoidance (mediator) in the model significantly reduced the association between IPV (predictor) and PTSD symptoms (outcome). As the relation between IPV and PTSD symptoms is significantly smaller with experiential avoidance in the equation but still greater than zero, the data suggests partial mediation. Overall, results of the mediation analysis support Hypthesis 6 in that experiential avoidance was found to partially mediate the relationship between IPV and PTSD symptoms. Figure 2 represents a path diagram of the regression analyses.



*Figure 2.* Path diagram of regression analyses (standardized Beta weights) showing avoidance as a mediator of the relationship between IPV and PTSD symptoms. The standardized regression coefficient between IPV and PTSD symptomatology controlling for experiential avoidance is shown in parentheses.  $*p < .05$ ,  $**p < .01$ ,  $***p < .001$

## CHAPTER 4

### DISCUSSION OF RESULTS

#### A Study of Intimate Partner Violence in Female Undergraduates

The purpose of the current study was to investigate the prevalence of intimate partner violence (IPV) and related posttraumatic stress symptoms among female undergraduate students. IPV, a well-documented public health problem, has disproportionately been examined among clinical samples (e.g., women residing in shelters). This issue has caused some to question the generalizability of well-established research findings to non-clinical samples. In an effort to expand upon the growing body of research examining IPV in non-clinical samples, this study investigated the relationship between posttraumatic stress disorder (PTSD) symptomatology, lifetime exposure to potentially traumatic events (PTEs), type of IPV, and perspective-taking abilities. Additionally, the relationship between IPV, experiential avoidance, and PTSD symptomatology was examined. The majority of hypothesized relationships with variables of interest were supported in the current study. However, findings did not support the theorized role of perspective-taking ability (e.g., here-there, now-then) in the development of PTSD symptoms. The results of hypothesis testing, general implications, limitations, and future directions for research are explored in the following sections.

#### Prevalence of Physical and Psychological IPV

While there has been a recent shift in IPV research toward the inclusion of non-

clinical samples, the reported prevalence rates have been inconsistent among college students (Próspero & Vohra-Gupta, 2008). One potential reason for these discrepancies may involve varying operational definitions of IPV as some studies define IPV based on the presence of physical abuse while others consider broader definitions (e.g., physical, psychological, and sexual abuse). Furthermore, findings may be complicated by different definitions of "intimate partner." This study adopted the definition recommended by the National Center for Injury Prevention and Control which identifies IPV as abuse (e.g., physical, psychological, or sexual) that occurs between two people in a close relationship (e.g., current or former spouse, partner, girlfriend/boyfriend). As another prominent problem in assessing the true occurrence of IPV is related to victims' tendency to not report acts of violence (Tjaden & Thoennes, 2000a), participants in this study were asked to self-identify IPV experienced as well as complete a screener designed to assess IPV.

With regard to physical abuse, approximately half (45.7%) of women in the study reported experiencing at least one act of physical violence perpetrated by an intimate partner within the past year. This estimate was based on responses to the Conflict Tactics Scale 2 (CTS2; Physical Assault Scale) and is higher than reported on the preliminary question included on the demographics questionnaire. In response to the general question of type of IPV experienced on the demographics questionnaire, a total of 18% of respondents indicated experiencing physical assault (alone or in combination with other forms of IPV). The prevalence rate from the CTS2 results was consistent with prior research with undergraduates (e.g., Próspero & Vohra-Gupta,

2007). Additionally, these results are in agreement with findings from community samples which have shown that approximately one-quarter to one-half of dating, cohabiting, and married couples report incidents of physical aggression (Lawrence, Yoon, Langer, & Ro, 2009). The chronicity value for physical assault in the current sample revealed that on average, participants reported experiencing acts of physical abuse three to five times during the past year. This value is less than the mean found in the college reference sample for the CTS2.

Based on participants' self-report of type of IPV experienced, the majority of the sample reported experiencing emotional, or psychological, abuse (78.5%) without incidence of other forms of IPV (i.e., physical, sexual). This percentage increased to 98.8% when reports of polytrauma (e.g., physical and emotional or physical, emotional, and sexual) were included in the overall estimate of psychological abuse. On a validated measure of emotional abuse (Multidimensional Measure of Emotional Abuse; MMEA), results indicated that an overwhelming number of participants (94.8%) reported experiencing at least one act of psychological abuse by a partner over the past year. Overall, self-report on both measures indicated a high level of psychological abuse occurring among undergraduates. This is consistent with previous findings that have found high rates of psychological abuse in college samples, ranging from 80-90% (e.g., Hines & Saudino, 2003; Próspero & Vohra-Gupta, 2007; White & Koss, 1991). Furthermore, these rates suggest that the yearly incidence rate found in this study was similar to previously documented lifetime prevalence rates of psychological victimization (Marshall, 1996). As with previous research (e.g., Capaldi & Crosby, 1997; Frye &

Karney, 2006), physical and psychological abuse were found to be significantly correlated in the current sample, thus supporting Hypothesis 1 (i.e., psychological abuse as measured by the MMEA would correlate positively with physical abuse as measured by the CTS2).

### *IPV in College*

Descriptive statistics from the current study indicated that IPV is a major problem among undergraduates. Thus, it is imperative for increased awareness of IPV across college campuses. The high prevalence of psychological abuse among this sample and previous research is particularly troubling in light of evidence that psychological abuse may be an antecedent to other forms of abuse. Additionally, IPV has been related to other issues prominent on college campuses including problematic drinking. One study identified IPV as a risk factor for excessive drinking and a consequence from drug use for both male and female college students (Simons, Gwin, Brown, & Gross, 2008). Perhaps equally as troubling as the high rate of IPV among college students, research suggests that a minority of male and female students who reported IPV victimization would seek mental health services (Próspero & Vohra-Gupta, 2007).

The observed high prevalence of IPV among college students and its negative consequences emphasizes the importance of incorporation of IPV into collegiate prevention programs. As recommended by Próspero and Vohra-Gupta (2008), college students may best benefit from campus wide outreach programs which can serve to decrease barriers to treatment (e.g., stigma, expense). Integration of education about



IPV and services into college freshman orientation may be beneficial based on previous findings that increased knowledge about IPV services serve as a motivator for help-seeking (Petersen et al., 2005). If available, free or discounted mental health services should be advertised in general to further help reduce the stigma of seeking services. College campuses may also consider adopting IPV screeners for use in both health centers and mental health/counseling clinics.

Related to campus-wide outreach, practitioners involved in the treatment of college students should receive education about identification of IPV and its consequences. It is also imperative that awareness is increased about the high rates of exposure to PTEs and how this may relate to IPV. As suggested by Frazier and colleagues (2009), this issue may be addressed by adoption of a trauma exposure assessment into intakes at campus counseling centers. Practitioners themselves should be especially attentive to a client's full history of PTEs and type of IPV experienced in order to tailor treatment to the individual.

#### Prevalence of PTSD

Descriptive statistics regarding PTSD for the current sample revealed that approximately 15% of participants met criteria for probable PTSD based on a cutoff score of 50 on the Posttraumatic Stress Disorder Checklist, Specific (PCL-S). This prevalence rate falls within the observed estimate of 10-15% by Borsari and colleagues (2008) and only slightly higher than an early estimate of 12% for students exposed to traumatic events (Bernat, Ronfeldt, Calhoun, & Arias, 1998). Compared to results of

Golding's meta-analysis which found a weighted mean prevalence of 64% for PTSD secondary to IPV, the current sample's PTSD prevalence rate is much closer to the lifetime prevalence of 10.4% in the general population of women (Kessler et al., 1995). However, despite the lower prevalence rate, statistical analyses resulted in significant correlations between both physical and psychological abuse and total PTSD symptoms in the current sample. This finding is consistent with previous research indicating that PTSD is among the most prevalent mental health consequences of IPV (Campbell, 2002).

#### Lifetime Trauma Exposure, IPV, and PTSD

This study sought to address the gap in the literature regarding the effects of additional adverse life events or PTEs on individuals who have experienced IPV (Graham-Bermann et al., 2011). The Life Events Checklist (LEC) was chosen as a measure of exposure to PTEs as it allows for an assessment of a broad range of events that might meet Criterion A of the *Diagnostic and Statistical Manual of Mental Disorders*, 4<sup>th</sup> edition (*DSM-IV*) PTSD criteria. Additionally, the response categories allowed for determination of direct exposure to PTEs. This is important given that research suggests that directly experienced events tend to result in increased distress (e.g., Bernat et al., 1998).

Descriptive statistics for the current sample revealed that the majority of participants (87.6%) had experienced at least one PTE during their lifetime. This finding was consistent with previously reported high lifetime rates of PTEs among

college undergraduates (Frazier et al., 2009; Vrana & Lauterbach, 1994; Watson & Haynes, 2007). Participants in this current study reported transportation accidents (e.g., car accident, boat accident, train wreck, plane crash), "other" stressful event or experience, and "other" unwanted or uncomfortable sexual experience as the most common types of PTEs. The average number of lifetime PTEs for the sample was three, which is close to the mean number of traumatic events found in one of the earliest studies to look at *DSM-IV* PTSD criteria and traumatic event exposure (Breslau et al., 1998).

In the current study, initial analyses revealed that lifetime exposure to PTEs as measured by the LEC was significantly correlated with PTSD symptoms as measured by the PCL-S. Total lifetime PTEs was also found to significantly correlate with scores on measures of physical and psychological abuse. This supports past research findings which have shown that women with a history of adverse life events are at risk for future victimization as adults, including IPV (Whitfield et al., 2003). Further examination of the relationships between trauma exposure, IPV, and PTSD indicated that exposure to PTEs was a significant predictor of PTSD symptoms. These results support Hypothesis 2 of the study (i.e., lifetime trauma exposure as measured by the LEC predicts PTSD symptoms as measured by the PCL-S) and replicate findings from previous research which has observed a relationship between PTSD symptoms and number of adverse life events (e.g., Frazier et al., 2009; Graham-Bermann et al., 2011; Scott, 2007). Number of PTEs was a significant predictor of total PTSD symptoms over and above physical abuse but not psychological abuse. Results of hierarchical multiple regression indicated

that both lifetime exposure to PTEs and psychological abuse were similarly significant predictors of PTSD symptomatology based on standardized beta coefficients.

### IPV Type and PTSD

While the existing body of literature indicates strong evidence for the relationship between physical abuse, especially severe physical abuse, and PTSD symptomatology, there has been an ongoing shift toward viewing psychological abuse as a unique contributor to the development of PTSD. As a result, this study sought to examine whether psychological abuse would predict PTSD symptoms over and above physical abuse. As previously noted, initial bivariate correlations revealed significant positive relationships between physical abuse (CTS2 Physical Assault) and PTSD symptoms (PCL-S) as well as between psychological abuse (MMEA) and PTSD symptoms (PCL-S). Results of further analyses with a hierarchical multiple regression demonstrated that after controlling for the effects of lifetime exposure to PTEs, physical abuse was not a significant predictor of PTSD symptoms. However, with the addition of psychological abuse to the model, there was a significant increase in the percentage of variance explained for PTSD symptoms. Thus, as set forth in Hypothesis 3 (i.e., psychological abuse as measured by the MMEA would predict PTSD symptoms on the PCL-S over and above physical abuse as measured by the CTS2), psychological abuse was indeed identified as a distinct predictor of PTSD symptoms and accounted for significantly more variance than physical abuse in the model. This finding is consistent with previous research which found psychological abuse to be a stronger unique predictor of PTSD

symptoms than physical abuse (Arias & Pape, 1999; Dutton et al., 1999; Street & Arias, 2001; Taft et al., 2005).

As pointed out by Arias and Pape (1999) and Outlaw (2009), there is a longstanding history of research findings that women report that the experience of psychological abuse and its effects leave deeper scars than any physical injury (e.g., Follingstad et al., 1990; Herbert, Silver, & Ellard, 1991; O'Leary & Curley, 1986; Walker, 1984). Yet, research has continued to focus primarily on physical abuse and its consequences over the decades. One reason why psychological abuse has failed to be consistently integrated into IPV research as a distinct factor from physical abuse is the difficulty related to conceptualizing and operationalizing psychological abuse (Marshall, 1996; Ro & Lawrence, 2007). Physical abuse involves overt behaviors that can be easily measured while psychological abuse can be both overt (e.g., name-calling) or more covert (e.g., intimidation, unpredictability). Additionally, while there are numerous forms of physical abuse (e.g., hitting, kicking, slapping, biting), there appear to be even more forms of psychological abuse. Marshall (1994), an early pioneer in emphasizing the importance of psychological abuse, identified 42 different types of psychological abuse. Findings like this may make the task of measuring psychological abuse to many researchers a daunting task and one for which there is no clear "gold standard" of measurement. Further, the high co-morbidity between physical and psychological abuse makes more simplistic solutions, such as comparing groups of survivors of physical-only or psychological-only abuse extremely difficult.

The mounting evidence, including results put forth in this current study, clearly

indicate that simply overlooking or placing psychological abuse secondary to physical abuse is a disservice to the victims of IPV for whom research is meant to directly benefit. Rather than view the complexity of psychological abuse as a roadblock to further assessment and research, future researchers may best benefit from viewing it as a “bump in road.” One initial step to addressing the issue of psychological abuse in research is the adoption of a uniform definition of psychological abuse. Saltzman and colleagues (2002) offer the following uniform definition: “...trauma to the victim caused by acts, threats of acts, or coercive tactics...Other behaviors may be considered emotionally abusive if they are perceived as such by the victim...Operationalization of data elements related to psychological/emotional abuse will need to incorporate victim perception or a proxy for it” (p. 61). This definition highlights the need to assess specific behaviors as well as victim’s perception of the behaviors. Even if this definition does not account for all aspects of psychological abuse, it could serve as a starting point for future research. With a more unified approach to the conceptualization and operationalization of psychological abuse, research findings can be compared across samples and settings. This in turn would allow for refinement of the uniform definition and improvement in measurement. Improvement in how researchers approach psychological abuse is a key element to improving treatment for both victims and perpetrators of IPV. Unlike physical abuse, psychological abuse may not be immediately perceived by individuals as abuse or may be explained away as it does not leave lasting visible injuries. In these situations, psychological abuse may then persist and/or increase in severity over time, further adding to the “dose” of IPV which may

leave victims at risk for more severe psychological distress (e.g., depression, anxiety).

Adoption of a more uniform definition of psychological abuse should also be coupled with utilization of validated measures of psychological abuse. Ro and Lawrence (2007) offer a comparison of three measures of psychological aggression, one of which, the MMEA, was utilized in the current study. Their findings indicated that the overall MMEA scale appears to be a comprehensive measure of psychological aggression. However, the poor psychometric properties of the individual subscales limits its application as a tool to understanding the presence and effects of specific forms of psychological abuse. While not a “perfect” measure of psychological abuse, the MMEA would serve as a good initial assessment of a range of behaviors that are subsumed under psychological abuse. Furthermore, the response scale on the MMEA is modeled after the response scale of the commonly used CTS2, which would allow for direct comparison between frequency scores of psychological and physical abuse. A more in-depth discussion of the results of the MMEA in the current sample are detailed later in the discussion.

Specific assessment of both physical and psychological IPV subsequently allows for the statistical control of physical abuse in examining the effects of psychological abuse. Additionally, incorporation of assessment for victim’s perception of endorsed behaviors (e.g., follow-up questions, semi-structured interview) would allow for examination of which particular behaviors are most distressing. This parallels recommendations for assessing PTSD in that it is important to assess both the occurrence of the traumatic event (Criterion A1) and the emotional response to the

event (Criterion A2) to gather a comprehensive picture. In sum, the bottom line remains that in order to adequately address what so many women have consistently indicated as a significantly distressing form of IPV, research needs to choose a uniform starting point (i.e., definition, assessment).

### *MMEA as a Measure of Psychological Abuse*

As more attention is drawn to psychological abuse as a distinct form of IPV, there is an increased need for adequate measurement. As pointed out by Marshall (1996) and Ro and Lawrence (2007), research focused on psychological aggression has been hindered by issues related to both operational definition of psychological abuse and construct measurement. One of the earliest attempts at measuring psychological abuse, the CTS2 Psychological Aggression Scale, has been found to have poor psychometric properties in comparison to other CTS2 scales and has inconsistent reliability, validity, and generalizability across samples (Ro & Lawrence, 2007). The MMEA was created by Murphy and Hoover (1999) to build upon the early efforts of the CTS2 Psychological Aggression Scale. While similar with regard to response format, the MMEA offers a unique, multidimensional conceptualization of psychological abuse. By expanding the range of behaviors evaluated, different patterns or dimensions of psychological abuse can be assessed (e.g., intimidation, hostile withdrawal). Results from the current study found the MMEA to exhibit strong psychometric properties based on scores pertaining to partner behavior. Exploratory analyses revealed that the MMEA partner total score exhibited a significant correlation with partner scores on the CTS2



Psychological Aggression Scale. The presence of convergent validity suggests that the two measures reflect similar, but not necessarily identical, constructs of psychological aggression. Additionally, the MMEA was found to correlate significantly with physical abuse (CTS2 Physical Assault) as well as PTSD symptoms (PCL-S). Overall, the total MMEA scale exhibited good psychometric properties and appears to offer a comprehensive assessment of multiple types of psychological aggression.

### Perspective-Taking Ability and PTSD

From a relational frame theory (RFT) perspective, it has been theorized that individuals with PTSD who report reliving past traumatic events as if they were occurring in the present (e.g., flashbacks) exhibit decreased ability to differentiate the relations of here-there and now-then. At the time of this study, no research had empirically tested this theory. Therefore, a measure designed to assess the deictic frames of "I-you," "here-there," and "now-then" (McHugh et al., 2004a) was utilized in the current study to examine the relationship between perspective-taking ability and PTSD symptomatology. It was hypothesized that higher number of errors on the here-there and now-then trials across varying levels of complexity (e.g., simple, reversed, double reversed) would correspond to greater PTSD symptoms.

While the highest number of errors was reported for the here-there/now-then double reversed items, the combined performance of all here-there and now-then items did not exhibit a significant relationship with PTSD symptoms. When entered into a model as a predictor of total PTSD symptoms, perspective-taking ability did not account

for any change in variance explained by the overall model. Therefore, results failed to find support for Hypothesis 4 (i.e., perspective-taking ability as measured by the McHugh et al. (2004a) protocol would predict PTSD symptoms on the PCL-S). Additionally, exploratory post-hoc analyses of correlations between overall here-there/now-then performance and individual items of the PCL-S (e.g., suddenly acting or feeling as if the stressful experience were happening again) did not result in any significant findings. Thus, the hypothesized relationship between perspective-taking ability and PTSD symptoms was not supported.

Several reasons may account for the failure to observe a significant relationship between perspective-taking and PTSD symptoms, including the fact that previous research has demonstrated that accuracy on perspective-taking tasks increases as a function of age. Considering the current sample consisted of all adults, the difference in performance across I-you, here-there, and now-then relations may not be as well defined as in samples of younger children. Additionally, all participants in the current study were attending college and can be assumed to be well-educated; it is possible that number of errors across trial types decreases with higher educational level. Another possible explanation for failure to support the hypothesized relationship may be related to measurement. This was the first study to apply the McHugh et al. (2004a) perspective-taking protocol with college students for the purposes of examining the relationship with PTSD symptoms. Examination of mean number of errors across frame type and relational complexity revealed an unexpected high number of errors for the here-there reversed trial type. The mean number of errors for this trial was much

higher than for the now-then reversed condition, which is considered to be more complex. This finding suggests that in general, errors exhibited by college students may not reflect the developmental trajectory of relational frames observed in younger children.

An alternate explanation for the failure to observe a relationship between performance on the here-there and now-then relations and PTSD symptoms may be related to the fact that the McHugh et al. (2004a) protocol contains items that assess for deictic frames in a general context (e.g., sitting in a chair, watching television). In comparison, the failure to differentiate here-there and now-then within the context of PTSD (e.g., flashbacks) often involves contact with stimuli (e.g., “triggers”) which are directly or indirectly (i.e., by transformation of stimulus functions) related to the original traumatic experience. In other words, if the stimuli presented in the items was not in some way related to the participant’s traumatic event, there may not have been a disruption in the ability to differentiate here-there and now-then.

Based on the mean total PCL-S in the current sample, the majority of participants did not report high levels of PTSD symptoms. Thus, it is also possible that the hypothesized relationship between perspective-taking and PTSD symptomatology was not observed due to low rates of PTSD. Examination of individual PCL-S items revealed that those directly related to re-experiencing symptoms were typically reported as bothering participants “not at all” or “a little bit.” Therefore, this sample did not appear to be struggling with PTSD symptoms that would be directly related to the deictic frames of here-there and now-then.

While one of this study's strengths was the focus on the impact of lifetime trauma exposure in combination with IPV, the inclusion of multiple types of trauma may have affected the results of perspective-taking analyses. More specifically, participants were not asked to identify their worst or most problematic traumatic event. In other words, it is possible that a PTE was more traumatic than the experience of IPV. Depending on the type of trauma, symptoms (e.g., avoidance) may easily be addressed by direct exposure in the environment. For example, someone traumatized by a car accident, which was the highest reported PTE on the LEC, would likely have many opportunities to travel in a car without being involved in a serious accident. Thus, they would have more direct experiences of safety than trauma within the context of transportation and may not exhibit difficulties with perspective taking due to this repeated exposure. In sum, future research into perspective-taking ability and PTSD symptoms may be better performed in clinical samples with higher rates of PTSD in order to establish the existence of this theorized relationship. Additionally, assessment of an individual's most distressing trauma might offer clarity in the relationship between types of traumatic events and perspective-taking ability. Given the novel application of the McHugh et al. (2004a) protocol in this study, future research may also benefit from more detailed investigation into the psychometric properties of this measure.

### IPV, Experiential Avoidance, and PTSD

The second research question of this study focused on exploring the relationship between experiential avoidance and PTSD and whether the presence of experiential

avoidance affected the relationship between IPV and PTSD symptoms. For the purposes of this study, a total IPV variable was created from physical (CTS2 Physical Assault) and psychological (MMEA) abuse scores. Following steps for mediation analysis set forth by Baron and Kenny (1986), IPV was first established as a significant predictor of PTSD symptomatology. IPV was then observed to correlate significantly with experiential avoidance (Avoidance and Fusion Questionnaire for Youth; AFQ-Y). The final steps of mediation analysis indicated that experiential avoidance (mediator) was a significant predictor of total PTSD symptoms. Furthermore, when entered into the model with IPV, experiential avoidance significantly reduced the association between IPV and PTSD symptoms. As the relationship between IPV and PTSD symptoms remained greater than zero, it appears that experiential avoidance was a partial mediator of the relationship between IPV and PTSD symptomatology. These findings support both Hypotheses 5 (i.e., experiential avoidance as measured by the AFQ-Y would predict PTSD symptoms as measured by the PCL-S) and 6 (i.e., experiential avoidance as measured by the AFQ-Y would mediate the relationship between IPV and PTSD symptoms on the PCL-S) in the current study. Additionally, results from the current study lend further support to a growing body of literature highlighting the prominent role of experiential avoidance as a mediator of PTSD symptoms across a variety of samples including combat veterans (Roemer et al., 2001), undergraduates with history of stressful life events or trauma (Plumb et al., 2004), and childhood sexual abuse survivors (e.g., Rosenthal et al., 2005).

Assessing for experiential avoidance in PTSD allows for a broader understanding

of avoidance behaviors in that experiential avoidance accounts for multiple forms of avoidance including, but not limited to, thought suppression, physical avoidance, and rumination. Additionally, experiential avoidance is distinct from avoidance symptoms as defined by the *DSM-IV* in that it includes avoidance of experiences that are evaluated as negative, positive, or neutral. For many individuals struggling with PTSD, avoidance can be related to negative (e.g., guilt, shame) as well as positive (e.g., happiness, love) internal experiences. The finding that experiential avoidance was a mediator in the relationship between IPV and PTSD symptoms is significant in that experiential avoidance is theorized to be one of the central processes related to the development and maintenance of PTSD (Orsillo & Batten, 2005). As previously detailed, experiential avoidance involves a process by which an individual engages in repeated patterns of behavior aimed at controlling or eliminating unwanted internal experiences. With regard to PTSD, these strategies often initially begin in relation to trauma-specific stimuli and then may generalize to non-trauma stimuli, which eventually leads to greater constriction in behavior. In the current sample, rates of PTSD were lower than clinical samples but experiential avoidance still played a significant role as a mediator of IPV and PTSD symptoms. As this was not a particularly distressed sample, this is an important “snapshot” regarding what may be the initial stages of development of PTSD symptoms in women experiencing IPV.

Longitudinal studies of experiential avoidance and PTSD symptoms would allow for more detailed assessment of their relationship, including whether or not PTSD symptoms develop in the absence of experiential avoidance or whether there is a

minimal level of experiential avoidance at which PTSD symptoms develop. Related to this, longitudinal research could shed light on whether these relationships are dependent on type of PTSD symptom (e.g., hyperarousal develops in absence of experiential avoidance). Longitudinal treatment studies with mindfulness and acceptance based psychotherapies, which focus on experiential avoidance, could also offer information about whether changes in experiential avoidance relate to PTSD symptoms over time.

#### *AFQ-Y as a Measure of Experiential Avoidance in Adults*

While previously designed as a measure to assess experiential avoidance and cognitive fusion in children and adolescents, recent work has indicated that the AFQ-Y may be a promising adult measure. It has been theorized that the use of simple language with a focus on specific setting events and general response behaviors in the AFQ-Y make it an easily comprehended general measure of experiential avoidance (Schmalz & Murrell, 2010). Based on the current sample, the AFQ-Y exhibited strong internal consistency. It also demonstrated a significant positive correlation with total PTSD symptoms, further supporting it as an indicator of experiential avoidance.

#### Additional Implications

Results from this study have several implications for both research and treatment of IPV. Many implications have been cited throughout the discussion thus far; the following section offers additional implications of results from the current study.

### *Screening*

This study utilized an initial, brief screener to assess for the presence of possible IPV. This was the first reported application of the Woman Abuse Screening Tool (WAST) among college students. Previously, the WAST has been evaluated with community samples in medical settings. While some psychometric properties (i.e., internal consistency) of the WAST total score were lower in the current sample, exploratory analyses revealed that the overall score on the WAST was significantly correlated with both the CTS2 (Physical Assault) and MMEA. Of note, the WAST-Short (i.e., Items 1 and 2) exhibited adequate internal consistency with the current sample. Total scores on the WAST-Short demonstrated a small yet significant relationship with scores of physical and psychological abuse. On an item level, the specific items on the WAST that identify physical abuse were significantly correlated with CTS2 Physical Assault scores and items related to psychological abuse were significantly correlated with MMEA scores.

The observed decreased internal consistency on the 8-item WAST may have been attributed to differences between the norming sample and the current sample. Specifically, the original validation of the 8-item WAST (Brown et al., 2000) was conducted in a family practice setting with older women (mean age 46.2 years old) than the current sample (mean age 21.8 years old). It is possible that women presenting in a clinical setting endorse different specific abuse symptoms than undergraduate females volunteering for a research study. Furthermore, older women may have a longer history of IPV and thus report higher levels of specific forms of IPV.



Overall, results from this current sample suggest that the WAST was a successful initial screener within a college sample. Given the stronger psychometric properties for the WAST-Short items versus the 8-item WAST, the WAST-Short may be an especially appropriate tool to utilize in screening college students. The brevity of this screener allows for its adaption into multiple settings, including university health clinics and counseling centers. Therefore, it may serve as valuable tool in increased detection of IPV among college students which may in turn lead to earlier detection and treatment of IPV.

### *Psychological Abuse and IPV Treatment*

Results from this study support the growing body of literature indicating a high rate of psychological abuse among female undergraduates. Furthermore, in comparison to the estimate of physical abuse within the current sample, results support previous findings that psychological abuse is more prevalent than physical abuse. These findings are important in that they highlight the need for psychological abuse to be viewed as independent from physical abuse. As argued by Marshall (1996), it appears inappropriate to view psychological abuse from a violence perspective. Rather, psychological aggression may be the context in which physical and/or sexual abuse is more likely to occur (Marshall, 1996; Frye & Karney, 2006).

Psychological abuse can be especially problematic in that it tends to persist after treatment (Hamberger & Hastings, 1988; Tolman & Bennett, 1990; Gondolf, 1997). Findings from this study, which identify psychological abuse as a unique predictor of

PTSD, over and above physical abuse, underscore the importance of addressing this form of IPV in treatment of both victims and perpetrators of abuse. For perpetrators of violence, this may include education about what constitutes psychological abuse as well as exploration of how power and control are exerted via acts of psychological abuse. Victims of psychological abuse would also likely benefit from education about what is considered psychological abuse as they might not recognize some behaviors as abusive when compared to the experience of physical abuse. Furthermore, treatment could focus on specific feelings and thoughts that have become associated with their experience of psychological abuse.

#### *Treatment of IPV Victims*

With increased dissemination of research findings, the face of treatment for women experiencing IPV is changing. Historically, treatment has focused on prevention and treatment of male perpetrators of IPV; although, literature review of these efforts suggests limited success in IPV reduction (Babcock, Green, & Robie, 2004; Cornelius & Resseguie, 2007; Smith-Stover, Meadows, & Kaufman, 2009). As suggested by Cattaneo and Goodman (2005), this pattern of focusing on the perpetrator of violence may have resulted from historical issues of blaming the victim in IPV. While the concerns associated with examining victim characteristics are not unwarranted, the considerable attention paid to perpetrators of IPV, has resulted in a dearth of information on victim-related variables and treatment programs designed to address increasing women's safety and sense of empowerment.

Iverson, Lester, and Resick (2011), argue that the documented link between IPV and subsequent PTSD and depression coupled with research findings that PTSD and depression symptoms may increase risk of re-victimization form a strong case for more focused interventions aimed at reducing these psychological symptoms. The finding from the current study that experiential avoidance mediated the relationship between IPV and PTSD symptoms suggests that acceptance-based approaches such as acceptance and commitment therapy (ACT; Hayes et al., 1999) and dialectical behavior therapy (DBT; Linehan, 1993) as well as mindfulness-based approaches such as mindfulness-based stress reduction (MBSR: Kabat-Zinn, 1990) may be effective interventions for victims of IPV. These approaches place an emphasis on development of acceptance of trauma-related stimuli which should lead to reduction in experiential avoidance. The development of a nonjudgmental and accepting stance toward internal experiences may set the stage for trauma survivors to maintain contact with distressing experiences without engaging in avoidance behavior, and thus allowing for more productive ways of relating to these experiences (Batten, Orsillo, & Walser, 2006; Follette, Palm, & Pearson, 2006).

### Limitations

In interpreting results from this current study, several limitations should be noted. First, the cross-sectional nature of the current study does not allow for observation of the developmental course of IPV and its consequences. Longitudinal studies are important to observe the overall trend of IPV over time, especially with

regard to psychological abuse as it appears to be an antecedent to physical abuse (Babcock, Costa, Green, & Eckhardt, 2004; Murphy & O'Leary, 1989). Additionally, as pointed out by previous research (Orcutt et al., 2005), both experiential avoidance and PTSD contain elements of avoidance and thus overlap (e.g., numbing of feelings, avoidance of feelings). Therefore, longitudinal research is needed to further elucidate the role of experiential avoidance as a risk factor for PTSD over time.

This study is also limited by its reliance on a convenience sample of predominantly White undergraduates attending a university in the southern region of the United States. Thus, results may not generalize to students of ethnic minority or to students attending college in other regions of the country or world. It should be noted that students also self-selected to participate in a study that was advertised as examining conflict in relationships. Additionally, all participants with a positive screen on the WAST chose to complete the more involved second part of the study. As a result, it is possible that these students may differ from other peers experiencing IPV who did not volunteer for the study. This limitation mirrors that of results from clinical samples in that it is unclear if participants may reflect a healthier sample as they are willing to acknowledge the occurrence of IPV and/or seek help.

Results of this study may have also been impacted by the nature of questionnaires. Specifically, participants were asked to provide retrospective report of events that occurred in the past 12 months. Asking participants to recall events over a prolonged period of time may have resulted in inadequate recall of events due to forgetting. Lastly, interpretation and generalization of results from this study may be

limited by the fact that the focus was on report of partner behavior. This may result in oversight of potential interaction between both partners' behaviors.

### Future Directions

While women are typically the victims of IPV, future research should include both men and women in samples. This is especially important among college samples as more recent research failed to find significant differences between male and female students' report of physical, psychological, and sexual abuse (Próspero & Vohra-Gupta, 2008). These findings contradict reported incidence rates among the general population which find that women report significantly more victimization by a partner (Tjaden & Thoennes, 2000a). However, they support other recent work with married couples which found that psychological abuse was strongly associated with both husbands' and wives' report of depression and anxiety symptoms (Lawrence et al., 2009). Therefore, inclusion of men into research on IPV among college samples would allow for the evaluation of a potential new facet of IPV among non-clinical samples.

Given the important role of lifetime exposure to PTEs as reported in this study and previous work, future research would benefit from utilization of more comprehensive assessment of prior trauma histories. While the LEC offered the advantage of screening for a broad array of traumatic events, its original design is as a screener and as such only provides information about level of exposure (i.e., direct experience, witnessed). More in depth assessment of prior trauma histories, including age of trauma and frequency of traumatic events would allow for a more thorough

understanding of the role previous trauma plays with regard to both IPV and PTSD symptoms. Of particular interest to future IPV research would be the possible differential impact of various types of childhood trauma versus adult trauma.

Future researchers should also consider the use of a more comprehensive assessment of PTSD symptoms. The PCL-S offers several advantages to assessment including direct mapping on to *DSM-IV* criteria and established cut-off for probable PTSD. However, a self-report measure for any psychological problem is not a replacement for a structured clinical interview. A screener or initial assessment of PTSD symptoms followed by a more in-depth interview would also allow for the assessment of Criterion A2 for PTSD. An increasing number of studies offer support for the important role of emotional response (i.e., fear, helplessness, horror) in predicting PTSD symptom severity (e.g., Boals & Schuettler, 2009; Frazier et al., 2009). Further assessment of PTSD symptoms could also provide information regarding age of onset of PTSD symptoms which could lead to improved understanding of the relationship to IPV. Additionally, thorough assessment of all three symptom clusters of PTSD would allow future research to statistically control for the possible overlap between experiential avoidance and the avoidance/numbing symptoms of PTSD (e.g., Orcutt et al., 2005).

### Conclusion

In this study, female undergraduates were found to report high incidence of psychological aggression. Overall, rates of both physical and psychological aggression were consistent with previous research involving college samples. These results

consistently highlight the problem of IPV among college students. Data from this study also indicated the significant role of lifetime exposure to potentially traumatic events in the development of PTSD symptoms within the context of co-occurring history of IPV. Differential effects of type of abuse were found, with psychological abuse serving as a significant predictor of PTSD symptoms. However, the theorized role of perspective-taking ability in development of PTSD symptoms was not supported. Analysis of the relationship between experiential avoidance, IPV, and PTSD symptoms demonstrated the role of experiential avoidance as a partial mediator for the relationship between IPV and PTSD symptomatology.

Investigation of psychological abuse as a distinct form of IPV allows for better understanding of the differential effects of physical and psychological abuse. Given the nature of psychological abuse, it does not produce visible wounds to the victim, the perpetrator, or others. This increases the risk that psychological abuse is overlooked or minimized when compared to the undeniable effects of physical abuse. However, victims consistently report that it is psychological abuse that leaves some of the deepest and longest lasting scars. The essence of psychological abuse is that it undermines an individual's sense of self – it is a direct attack at the core of how one views themselves. As a result, it can give rise to distortions of identity and over-identification with thoughts related to abuse (e.g., "I'm no good," "I'm broken," "I don't deserve better"). This, in turn, can lead to pain and suffering that lasts long after the healing of any physical wounds.

Examination of mediators in the abuse-trauma link provides vital information for

future treatment of survivors of IPV. In particular, the finding of experiential avoidance as a partial mediator of the abuse-trauma link suggests that acceptance and mindfulness based treatments may be especially beneficial for victims of IPV. When coupled with the findings regarding the unique role of psychological abuse and distress, there seems to be an even greater justification to explore acceptance and mindfulness based treatments with IPV victims. These approaches (e.g., Acceptance and Commitment Therapy) can directly focus on issues related to sense of self as well as increase awareness of internal experiences (i.e., thoughts, feelings) and maladaptive ways of responding to unwanted or distressing internal experiences. Most importantly, these approaches can help victims, especially those of psychological abuse, see that they are not “broken” by their experiences; they remain whole and complete.



APPENDIX  
EXAMPLE INFORMED CONSENT

# University of North Texas Institutional Review Board

## Informed Consent Form

Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the purpose, benefits and risks of the study and how it will be conducted.

**Title of Study:** Examining Conflict in Intimate Relationships

**Principal Investigator:** Amy R. Murrell, University of North Texas (UNT) Department of Psychology.

### **Purpose of the Study:**

You are being asked to participate in a research study that consists of two parts. In the first part, you will be asked to complete a brief questionnaire about the nature of conflict within a relationship with an intimate partner. The term “intimate partner” includes current and former spouses, partners, boyfriends, and/or girlfriends. Based on your responses to the first questionnaire, you may be asked to participate in the second part of the study. Completing the first part of the study does NOT commit you to participating in the second part. If you are asked to complete the second part of the study, you will complete additional questionnaires about past experiences of conflict with your partner and your feelings and behaviors.

This study focuses on intimate partner violence (IPV), which is abuse that takes place between two people in a close relationship. IPV can take many forms including physical abuse (e.g., hitting, kicking), sexual abuse, threats, and emotional abuse (e.g., name calling.). Of particular interest in this study is the relationship between type (i.e., psychological, physical) and severity of abuse and psychological symptoms (e.g., depression, anxiety). We are also interested in assessing whether the development of Posttraumatic Stress Disorder (PTSD) symptoms in women with histories of IPV is related to specific language abilities.

### **Study Procedures:**

If you consent to participate, you will be asked to complete several self-report measures. These measures ask about specific behaviors that have occurred during conflicts between you and your partner, your feelings and behaviors related to past experiences of conflict, and your thoughts, feelings, and behaviors in general. You will also be asked to complete tasks that measure both general and specific verbal abilities. The questionnaire for the first part of the study will take approximately 10-15 minutes to complete. If you are asked to complete the second part of the study, those questionnaires will take approximately 1 ½ to 2 hours to complete.

### **Foreseeable Risks:**

The potential risks involved in this study are minimal and include possibly feeling uncomfortable while answering questions about your thoughts, feelings, and behaviors. There is the potential for emotional distress as the questionnaires ask about potentially traumatic events. At the conclusion of the study, you will receive a brochure including information about intimate partner violence and local mental health services. You may stop doing the study at any time without negative consequence.

### **Benefits to the Subjects or Others:**

There will not be any direct benefits of this research to you other than the experience of being involved in a study. There is a potential benefit to psychology, in that this research may advance our understanding of how intimate partner violence affects women's thoughts, feelings, and behaviors.

### **Compensation for Participants:**

If you are enrolled in an undergraduate psychology course at UNT, you will receive one research credit for completion of part one of the study. If you are asked to complete the second part of the study, you will receive an additional three research credits (four total research credits for parts one and two).

### **Procedures for Maintaining Confidentiality of Research Records:**

You will be assigned a subject number at the beginning of the study. All of your questionnaires will be coded with this number. This number will be placed on a master list that connects the number to your name. The master list will be kept separately from all other information. After the study is complete, we will shred the master list and there will be no way to connect your name to the questionnaires. All materials completed by you will be attached to your respective number and not your name. Your informed consent and the data from this study will be kept in a locked file cabinet in a locked room in Dr. Amy Murrell's lab in Terrill Hall. Only Dr. Murrell's research assistants who have been trained to maintain your confidentiality will have access to your information. Your name will not be used in any research reports or publications that result from this study, nor will your participation be disclosed to any unauthorized person. The confidentiality of your individual information will be maintained in any publications or presentations regarding this study.

There are conditions under which confidentiality may be breached. The law requires that we make a report to the Department of Family and Protective Services if we believe that a child, disabled person, or elderly person is being abused, neglected, or exploited. Also, confidentiality may be breached if you indicate that you intend to harm yourself or someone else.

### **Questions about the Study:**

If you have any questions about the study, you may contact Dr. Amy Murrell, UNT Department of Psychology, at 940-565-2967.

**Review for the Protection of Participants:**

This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at (940) 565-3940 with any questions regarding the rights of research subjects.

**Research Participants' Rights:**

Your signature below indicates that you have read or have had read to you all of the above and that you confirm all of the following:

- The Principal Investigator or a research assistant has explained the study to you and answered all of your questions. You have been told the possible benefits and the potential risks and/or discomforts of the study.
- You understand that you do not have to take part in this study, and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits. The study personnel may choose to stop your participation at any time.
- You understand why the study is being conducted and how it will be performed.
- You understand your rights as a research participant and you voluntarily consent to participate in this study.
- You have been told you will receive a copy of this form.

\_\_\_\_\_  
Printed Name of Participant

\_\_\_\_\_  
Signature of Participant

\_\_\_\_\_  
Date

**For the Principal Investigator or Designee:**

I certify that I have reviewed the contents of this form with the subject signing above. I have explained the possible benefits and the potential risks and/or discomforts of the study. It is my opinion that the participant understood the explanation.

\_\_\_\_\_  
Signature of Principal Investigator or

\_\_\_\_\_  
Date

Research Assistant

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