An examination of how individuals experience a traumatic bond: A latent profile analysis expanding traumatic bonding theory.

by

Megan Palmer

B.S., University of Central Missouri, 2019
M.S., University of Central Missouri, 2021

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

Department of Applied Human Sciences
College of Health and Human Sciences

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2024

Abstract

This study examines the facets of trauma bonding as initially outlined by Dutton and Painter (1981) to deepen our understanding of this phenomenon. These facets include intermittent reinforcement/punishment, love dependence, self-blame, low self-esteem, power imbalance, anxious attachment, and avoidant attachment. Data were collected from 510 individuals currently in romantic relationships via the online platform Prolific. Utilizing latent profile analysis (LPA), a four-class model emerged as the best fit, delineating the following classes: (a) high anxious attachment (b) probable trauma bond, (c) no trauma bond, and (d) high intermittency. I also utilized path analysis to identify if there were significant relationships between facets of trauma bonding and various types of IPV (e.g., physical, psychological, sexual, severe). Importantly, high self-esteem and anxious attachment did not have a significant relationship with any types of IPV, while love dependence, intermittent reinforcement and punishment, self-blame, and power had a relationship with at least one form of IPV. As well These findings highlight diverse experiences of traumatic bonding within our sample, suggesting the necessity for further exploration of these facets in future research.

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Approved by:

Co-Major Professor
Dr. Jared Durtschi

Approved by:

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Dr. Chelsea Spencer

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Dedication

I believe it is most important to dedicate this project to those who have previously been in or are currently in violent relationships. These experiences and these individuals have taught me more than I could ever put into words. This is dedicated to my mom, for being a strong woman to raise a strong woman. My passion started in a place of self-exploration, and I can only hope my passion aids in intervention and prevention efforts for those who face these relationships.

Chapter 1 - Introduction

Traumatic bonding, observed in victims of intimate partner violence (IPV), involves perpetrators instilling fear that transforms into gratitude for survival (Reid et al., 2013). Despite recognition, research on the formation, persistence, and outcomes of trauma bonding remains scarce (Reid et al., 2013). Casassa and colleagues (2021) studied trauma bonding in sex trafficking survivors, revealing a power imbalance, mixed positive and negative interactions with the perpetrator, and victim internalization of the perpetrator's view, consistent with findings by Dutton and Painter (1981). However, research on trauma bonding in the context of IPV is lacking (Reid et al., 2013). Dutton and Painter (1993) found that post-separation attachment to abusive partners was predicted by the intermittency of abuse and changes in power, illustrating the challenge of breaking this dependency. Further research is crucial to enhance our understanding of trauma bonding complexities, especially in intimate relationships.

Studies on women, comparing those who experienced IPV to those who did not, revealed higher levels of insecure attachment bonds to mothers and romantic partners among IPV victims (Ponti & Tani, 2019). Dutton and White (2012) argued that predictors of IPV often stem from insecure parent-child attachments, with insecure attachments possibly leading to survivors picking and staying with partners who perpetrate IPV in adulthood. Vera (2015) found a correlation between higher relationship violence scores and higher scores on Graham’s Stockholm Syndrome scale, moderated by insecure attachments. These studies consistently highlight the significant correlation between insecure attachment bonds, traumatic bonding, and IPV victimization among women, emphasizing the link between early attachment experiences and later relationship dynamics being exacerbated by insecure attachments.

Diagnostic criteria for traumatic bonding, terror bonding, or Stockholm syndrome are absent in the DSM-V, contributing to the lack of consensus on its definition and scarcity of empirical studies (Reid et al., 2013). Few empirical studies exist on traumatic bonding and IPV, and there's no exclusive measure for it. Only one measure for Stockholm Syndrome, briefly validated since 1995, exists (Graham, 1995). Despite efforts to explore correlations between IPV, trauma bonding, and other variables, research has not expanded significantly on Dutton and Painter (1981) or Graham's (1995) conceptualizations. Given the absence of diagnostic criteria and the scarcity of empirical studies and measures, further research is essential to advance understanding of trauma bonding within IPV contexts.

Case Vignette: Courtney's Trauma Bond

Courtney is a 33-year-old woman who presents to therapy with symptoms of depression and anxiety. She describes feeling trapped in a tumultuous relationship with her partner, Alex, for the past five years. Courtney recounts a pattern of emotional manipulation, verbal abuse, and occasional physical violence in the relationship.

Despite recognizing the toxicity of her relationship with Alex, Courtney struggles to break free. She often finds herself making excuses for his behavior, believing that he loves her deeply and that his actions are a result of his own unresolved trauma. Courtney recounts the cycle of abuse they experience, moments of intense conflict and cruelty followed by periods of remorse and affection from Alex.

Courtney expresses deep emotional dependency on Alex, fearing the thought of being alone or abandoned. She describes feeling worthless and undeserving of love, a sentiment reinforced by Alex's constant belittling and demeaning comments. Courtney admits to isolating

herself from friends and family, as Alex frequently accuses them of trying to interfere in their relationship.

Despite the turmoil, Courtney remains hopeful that Alex will change and that their relationship will improve. She recalls instances where Alex apologized profusely, promising to seek help and make amends. These moments of reconciliation provide Courtney with a fleeting sense of relief and validation, fueling her desire to stay in the relationship. Courtney's physical health has also been affected by the stress of her relationship. She reports frequent headaches, insomnia, and stomachaches, which she attributes to the constant tension and anxiety she experiences around Alex.

In therapy, Courtney struggles with conflicting emotions and thoughts about her relationship with Alex. She acknowledges the abuse but struggles to reconcile it with her deep love and attachment to him. Courtney expresses fear of leaving Alex, fearing retaliation or further abuse if she attempts to break free.

Chapter 2 - Literature Review

Intimate partner violence (IPV) encompasses physical violence, sexual violence, stalking, and/or psychological aggression, including coercive behaviors, perpetrated by a current or former romantic partner (Breiding et al., 2015). It is both prevalent and costly (Breiding et al., 2015; Corso et al., 2011; Max et al., 2004; WHO, 2013), and is associated with various adverse health outcomes such as depressive symptoms, substance use, chronic diseases, mental illness, injury, and mortality (Campbell, 2002; Coker et al., 2002; Devries et al., 2013; Ellsberg et al., 2008). Approximately one in four women (27.4%) and one in nine men (11.1%) experience IPV victimization, often leading to fear, safety concerns, and the need for support services (Smith et al., 2017). IPV affects individuals irrespective of race, ethnicity, socioeconomic status, education, or sexual orientation (Breiding et al., 2015; Black et al., 2011; Catalano, 2012; Truman & Morgan, 2014), making it a significant public health concern.

Distinctive features of IPV include its repetitive and escalating nature over time (Cochran et al., 2011). The psychological trauma inflicted by IPV can create strong emotional bonds that entrap victims in abusive relationships (Dokkedahl et al., 2019). Traumatic bonding, characterized by a powerful emotional attachment formed with a partner that frequently vacillates between acting both loving and abusive in intermittent unpredictable patterns, often keeps victims tethered to their abusers as well (Dutton, 1981). This study aims to explore potential profiles of traumatic bonding experiences among victims using latent profile analysis (LPA) and path analysis.

Theory of Traumatic Bonding

Dutton and Painter (1981) expanded on attachment theory in their conceptualization of traumatic bonding, which is also referred to as a trauma bond. They identify trauma bonding as

an aspect that can make it increasingly difficult for women to leave their violent romantic relationships and therefore is often a factor in them staying in increasingly violent relationships. Dutton and Painter (1981)'s theory of traumatic bonding expands on attachment theory and identified two unique aspects of a trauma bond, namely (a) a power imbalance within the relationship, and (b) an intermittency of abuse within the relationship. Regarding the power imbalance, a foundational argument of the theory is that the perpetrator of the trauma bond holds more relational power than the victim. The power imbalance within the relationship explains how the trauma bond cycle starts and is maintained for the duration of the relationship, and potentially following the cessation of the relationship (Dutton & Painter, 1981). The second key component of a trauma bond is the intermittency of abuse, which postulates that the perpetrator is intermittent in their rewards (e.g., love and hope) and punishments (e.g., physical, verbal, or emotional abuse) toward the victim. The intermittent reinforcement/punishment makes it difficult for the victim to extinguish behaviors, which also has been found to form the strongest produced emotional bonds (Amsel, 1958; Harlow & Harlow, 1971; Scott, 1963, Seay et al., 1964; Rajecki et al., 1978).

Dutton and Painter (1981) posit that intermittent reinforcement/punishment and an inherent power differential influence the presence of a trauma bond within abusive relationships by causing a "paradoxical attachment" (Dutton & Painter, 1981, p.106). When individuals experience the first abuse scenario, it is at a time of novelty and optimism in the relationship, and as the abuse continues, individuals eventually reach a point where their emotional attachment to their partner overrides sound logic to cease the relationship (Dutton & Painter, 1981). These two key concepts based in the foundation of attachment theory provide theoretical underpinnings that

develop and maintain trauma bonding as a phenomenon that is known and understood in abusive relationships.

Facets of Trauma Bonding

Intermittent reinforcement/punishment

Intermittent reinforcement/punishment involves abuse occurring intermittently with alternating phases of abuse and positive behavior from the perpetrator (Dutton & Painter, 1981, p. 148). These patterns are challenging to break and often result in victims forming strong emotional bonds with their abusers (Dutton & Painter, 1993). Research confirms that the intermittent nature of violence makes it difficult for individuals to leave such relationships and avoid subsequent abusive ones (Anderson & Saunders, 2003; Copp et al., 2016; Dutton & Painter, 1993; Goncalves, 1994; Henderson et al., 1997; McClellan et al., 1995; Saunders, 2020). Clinically, individuals may experience a cycle of abuse consisting of a 'honeymoon period' and an 'abusive period.' (Walker, 1977). The honeymoon period involves apologies, affection, and promises of change from the abuser, leading to hope for improvement. Walker (1977) continues to discuss the abusive period sees a return to control, manipulation, and violence, perpetuating the cycle. Intermittent reinforcement/punishment is a central aspect of traumatic bonding and may foster hope for relationship improvement, thereby perpetuating the cycle of violence.

Power

Power dynamics in violent relationships often favor perpetrators, contributing to a significant power imbalance (Dutton & Painter, 1993). This imbalance is particularly pronounced in relationships characterized by traumatic bonding. Social psychologists note that such unequal power dynamics can escalate and lead to pathological outcomes (Dutton & Painter, 1993). Perpetrators' power levels are closely linked to IPV perpetration and can serve as a

motivation for their actions (Spencer et al., 2022; Langhinrichsen-Rohling et al., 2012). Feelings of powerlessness, influencing relational decision-making, contribute to victims' self-doubt and dependency (Washburn-Busk et al., 2020). Additionally, higher levels of dependence are associated with victims having less power in the relationship (Dutton & Painter, 1993). In summary, a core aspect of traumatic bonding is the power imbalance, profoundly shaping relationship dynamics and often resulting in negative consequences for the victim.

Love Dependence

Dutton and Painter (1981) describe how, in relationships characterized by traumatic bonding, victims experience intense and illogical love for their abusers, leading them to feel trapped and unable to leave. This distorted love hinders victims' ability to escape, even during periods of extreme violence. Women who leave abusive relationships often maintain contact with their ex-partners due to this intense emotional bond. This high level of attachment and dependence on the perpetrator makes it extremely difficult for victims to perceive resolution or escape. Separation from the abuser results in significant psychological distress due to the loss of this psychologically dependent relationship (Dutton & Painter, 1981).

Low Self-Esteem & Self Blame

Dutton and Painter (1981) identify that low self-esteem and self-blame work together in tandem to create a strong sense of helplessness and depression. Low self-esteem and self-blame are integral pieces that help form a sense of learned helplessness, where it is believed that women felt as though they had no control or influence in their environment or relationship (Dutton & Painter, 1981). Due to the perpetual level of violence an individual may come to expect, continued violence may signal that they have no control over any sphere of influence in their life (Dutton & Painter, 1981) This cycle is continually “validated” as subsequent violence

persists in an intermittent fashion, and no matter how the victim's behavior changes, the violence continues (Dutton & Painter, 1981). With lower levels of self-esteem and self-blame working to make the individual feel as though they have no control and are seemingly trapped in the relationship, this aspect works as a maintenance piece that allows the trauma bond to persist.

Attachment and Trauma Bonding

Attachment theory, originating with Bowlby (1978), explores the formation of bonds between children and caregivers, later extended to examine adult romantic attachments (Bartholomew & Horowitz, 1991). Hazan and Shaver (1994) proposed that early life experiences between infants and caregivers shape adult romantic relationships. Bowlby emphasized that adult relationships function as reciprocal attachment bonds (Bowlby, 1979). Thus, trauma bonding, viewed as an extension of attachment theory, emphasizes the enduring influence of early caregiver relationships on adult romantic bonds, as noted by Bartholomew and Horowitz (1991).

Hazan and Shaver (1994) further hypothesized that early experiences between infants and caregivers influence adult romantic relationships. Zeifman and Hazan (2008) identified parallels between parent-infant and adult pair-bond relationships, highlighting similar physical contact and the release of oxytocin to promote bonding. Adult-pair bonds fulfill key functions of attachment bonds, such as proximity maintenance and providing a secure base for exploration (Zeifman & Hazan, 2008).

Examining adult attachment, research in the 1980s focused on its impact on adult relationships. It revealed that adults with insecure attachments experienced fewer friendships and greater fear of closeness and more emotional extremes (Hazan & Shaver, 1994). Bartholomew and Horowitz (1991) expanded understanding by incorporating perceptions of self and others in relationships, categorizing attachment into secure, preoccupied, fearful, and dismissive types.

Henderson, Bartholomew, and Dutton (1997) extended attachment research to IPV contexts, finding associations between attachment styles and relationship outcomes. Women with preoccupied attachments experienced more separations and displayed dependency on partners for self-regard (Henderson et al., 1997). They suggested that the volatile nature of preoccupied style might prompt women to leave abusive relationships but predispose them to reconciliations (Henderson et al., 1997).

Subsequent research linked preoccupied attachment with traumatic bonding in IPV contexts, highlighting the interplay between perceived attachment, self-esteem, and trauma (Gilbert & Gordon, 2017; Godbout et al., 2017; Park, 2017). Traumatic bonding theory emphasizes the strong attachment from victim to abuser despite various forms of violence (Godbout et al., 2017). It underscores the need for refined definitions and measures to capture subjective coercion elements in IPV relationships (Park, 2017).

Trauma Bonding and Stockholm Syndrome

It is important to recognize that Stockholm syndrome and trauma bonding have often been used interchangeably in various disciplines. Stockholm Syndrome has been defined as an automatic survival response that impacts emotions, often helping victims cope with traumatic and violent experiences (Adorjan et al., 2012; Harnischmacher & Muther,1987; Logan, 2018). This term was initially coined in 1973 to describe the psychological response of victims in situations like kidnappings, sex trafficking, or hostage-taking, with the first documented case occurring at a bank in Stockholm (Adorjan et al., 2012). It has also been applied to describe victim experiences within abusive relationships (Harnishmacher & Muther, 1987).

Graham and colleagues (1995) found similarities between hostage situations and IPV domination strategies as a means for survival. Their model illustrated that extreme levels of

power held by the abuser over the victim can often lead to a strong emotional bond (Graham et al., 1988). They have found that the strong emotional bond is often the result of a life-threatening situation, not necessarily a cause (Graham et al., 1995). Graham and colleagues (1995) model posit that there are four necessary components that must be present for the development of Stockholm Syndrome; (1) a person threatening another's life; (2) the threatened person has an inability to escape; (3) the threatened person is isolated from others; (4) the person threatening the other shows some level of kindness to the threatened person (Graham et al., 1995). These components are consistent with what is expected to be in a traumatic bond and there are aspects of nuance that contribute to differentiating the phenomena.

It is worth noting that while Stockholm Syndrome explains how victims cope and find meaning to promote their survival, it does not fully capture the complex attachment dynamics that develop within an intimate relationship when one partner becomes abusive. Additionally, it does not account for the influence of pre-existing interpersonal attachments on the cognitive distortions that occur due to Stockholm Syndrome often starting in a relationship where individuals do not have a romantic connection. What sets trauma bonding apart is its ability to encompass the varying levels of symptom severity that can result from different individuals experiencing trauma within the same context (Casassa et al., 2021). Intimate relationships often lack the physical barriers to escape seen in hostage situations characteristic of Stockholm Syndrome. Instead, trauma bonding victims are trapped by psychological, social, economic, and legal oppression that fosters coercive control (Herman, 1992). This highlights the need to examine trauma bonding as a separate entity from Stockholm Syndrome.

Recent Explorations

Gottman and Jacobson (1998) further explored Dutton and Painter's trauma bonding in an eight-year study focused on women in violent relationships and described it as "a bizarre phenomenon that happens when love and violence are combined" (p. 167). The authors postulated that combining love and violence will continue to reinforce the fantasy of love in the relationship, that until the rationalization ends, will prevent a shift from fear to contempt (p.166-167). Reid (2013) expanded on the cognitive distortions experienced by victims and proposed that they are misinterpretations of emotional arousal that are experienced during traumatic events. Reid (2013) identifies that this misinterpretation of terror as love leads to a cognitive distortion that perpetuates trauma bonds. In conclusion, the intertwining of love and violence as described by Gottman and Jacobson, along with the cognitive distortions highlighted by Reid, underscores the complex and damaging nature of trauma bonding.

Sanderson (2008) wrote a book titled *Counseling Survivors of Domestic Abuse,* where they drew on the works of Dutton and Painter to include information needed by clinicians to work with victims of trauma bonds. Sanderson identified it is necessary for clinicians to assess factors such as "severity, cyclical nature and duration of the abuse, and denial" (p.87). Sanderson discussed that trauma bonding created a complementary relationship with self-loathing that in turn further binds the individual to the bond (2008). Sanderson provides clinical understanding and highlights a need for clinicians to be aware of aspects of the traumatic bond to best address this phenomenon and further provides usefulness of exploring trauma bonds and their impacts on individuals in IPV relationships.

Rachel (2020), an advocate at the National Domestic Violence Hotline, wrote an article "Identifying & Overcoming Trauma Bonds", discussed how victims who call the hotline often identify mixed feelings regarding a partner abusing them (para. 1). Rachel expands with,

“Survivors also often tell us that their abusive partners exhibit ‘good’ behaviors too. Many survivors’ comment that their partners are ‘perfect’ or ‘wonderful’ 90% of the time, And this it’s just 10% of the time that’s the problem” (para. 2). Good behavior is often an aspect that fosters attachment and makes it more difficult for individuals to leave the relationship. The cycle of good and bad behaviors perpetuates the traumatic bond based on a biological need to bond with someone for survival (para. 4). Due to means for survival being an integral aspect of one’s life, when there is a threat individuals turn to their attachment figure, but if the attachment figure provides a source of trauma, one might rationalize or experience a form of cognitive dissonance in this relationship (para. 5).

The Present Study

There is a dearth of research on trauma bonding within gender diverse samples, with existing studies limited to correlations and brief predictive models focusing on female victims of IPV. We aim to fill this gap by investigating trauma bonding, an increasingly recognized phenomenon in media and clinical settings, yet lacking empirical support. Drawing on Dutton and Painter's (1981) conceptualization, I tested a latent profile analysis (LPA), a person-centered approach, to better understand how individuals who have experienced IPV in their relationship experience the different facets of a trauma bond. LPA allows for the identification of hidden groups in data and offers insights into the nuanced ways in which individuals may experience the components that make up a trauma bond. I also will run a path analysis to explore if there are significant relationships between the facets of trauma bonding and various forms for IPV (physical, psychological, sexual, and severe). This pioneering study aims to provide insight on how IPV victims experience the various facets of trauma bonding, contributing to a deeper understanding of this phenomenon and informing potential intervention strategies through further research. Specifically, I seek to understand:

RQ1: Are there unique profiles on how victims of IPV experience the different facets of a traumatic bond?

RQ2: Is there a significant relationship between the facets that make up a trauma bond and different types of IPV (e.g., physical, emotional, sexual, severe)?

Chapter 3 - Method

Procedures

Participants were recruited to fill out an anonymous survey via the online platform, Prolific. Participants were compensated approximately $12 USD an hour for completing the survey. The study was approved by Kansas State University's Institutional Review Board (IRB) in March 2022. Cross-sectional data were collected for the study in two rounds (June 2022 and October 2022). The inclusion criteria included being at least 18 years old, the ability to read English, and living in the United States (US). The total sample consisted of 1,259 participants, which was reflective of the 2010 US Census data. The current study used a subsample of participants who identified currently being in a relationship. Participants were required to complete quality control questions such as "Answer this question with cat" or "What color is the sky?". Participants who did not accurately respond to these questions were excluded from the study. In this sample, 527 participants were removed from this study as they did not identify as being in a relationship (including monogamous, open, and polyamorous relationships), we also removed 222 participants as they did not identify that they experienced IPV victimization from the Revised Conflict Tactics Scale (CTS2). We used a dichotomous victimization CTS-2 to decide inclusion for violence. This left a total of 510 participants for the final sample.

Participants

See Table 1 for demographic information on the 510 participants in this study. Most of the participants identified as White (78.6%,*n* = 401), followed by Black (11.6%, *n* = 59), Asian (7.6%, *n* = 39), Hispanic or Latino (6.9%, *n* = 35), American Indian (2.0%, *n* = 10), and Southwest Asian (<1%, *n* = 1). Participants had the opportunity to select more than one ethnic identity and therefore the total may be more than 100% of the sample. Most of the participants identified being heterosexual (83.7%; *n* = 427), followed by identifying as bisexual (9.8%; *n* = 50). Most of the sample had a bachelor's degree (41.6%; *n* = 212) or a high school diploma or GED (37.5%; *n* = 191). Most of the participants were either in a committed monogamous relationship (54.7%; *n* = 279) or married (41.2%; n = 210). See Table 1 for more sample demographics.

Table 1: Sample Demographics

Sample Demographics (*n*=510)		
	n	%
Gender		
Male	232	45.5%
Female	272	53.3%
Non-binary	6	1.2%
Ethnicity		
White	401	78.6%
Black or African American	59	11.6%
Asian	39	7.6%
Hispanic or Latino	35	6.9%
American Indian	10	2.0%
Southwest Asian	1	<1%
Sexual Orientation		
Heterosexual	427	83.7%
Bisexual	50	9.8%
Lesbian/Gay	19	3.7%
Queer	2	<1%
Pansexual	8	1.6%
Other	4	<1%
Relationship Type		

	In a committed, monogamous relationship	279	54.7%
	In a committed, open relationship	15	2.9%
	In a committed, polyamorous relationship	6	1.2%
	Married	210	41.2%
Household Income			
	Less $25,000	61	11.9%
	$25,000 - $50,000	139	27.3%
	$50,000 - $100,000	181	35.5%
	$100,000 - $200,000	101	19.8%
	More than $200,000	25	4.9%
	Prefer not to say	3	<1%
Age			
	18-29	101	19.8%
	30-39	122	23.9%
	40-49	87	17.1%
	50-59	96	18.8%
	60-69	82	16.1%
	70-80	22	4.3%
Education			
	Some High School	10	2.0%
	High School Diploma or GED	191	37.5%
	Bachelor's Degree	212	41.6%
	Master's Degree	65	12.7%
	Ph.D. or higher	11	2.2%
	Trade School	21	4.0%

Measures

Violence Victimization

Violence victimization was measured using the Revised Conflict Tactics Scale (CTS-2; Straus et al., 1996). This scale consisted of 78 items assessing perpetration and victimization across five subscales: physical IPV, sexual IPV, psychological IPV, injury, and negotiation. Participants rated the scale ranging from psychological to physical from 0 (*this has never*

happened) to 6 (*more than 20 times in the past year*) or 7 (*not in the past year, but it has happened before*). For the purpose of this study, I utilized a dichotomous victimization variable to identify individuals in the data set who were victims of IPV. Scores were dichotomized if an individual scored over five they received a one and all else received a zero for this variable. I also utilized victimization subscales of severe IPV (a = .80), psychological IPV (a = .76), physical IPV (a = .89), and sexual violence subscales (a = .81). Individuals who score above 25 on a particular subscale are experiencing that form of violence at a clinically significant level.

Measures of Trauma Bonding

Intermittent reinforcement/punishment

To examine intermittent reinforcement/punishment, a researcher-constructed measure was utilized. An EFA was completed for this subscale. The intermittent good/bad behavior scale started with 17 items and continued with 13 items after screening out four items based on the EFA results. Participants rated statements such as "I both love and fear my partner," "The way my partner treats me often changes between caring and hurtful," and "I continue to trust my partner, even though they hurt me." The score of one item was reverse coded for the purpose of this subscale; "My partner's actions toward me are consistently positive." This scale consisted of 13 statements where the participants rated their level of agreement with each statement on a Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The Cronbach's α for this subscale was .94.

Power Imbalance

Power differentials within the relationship was measured by the Male Privilege subscale from the Checklist of Controlling Behaviors (CCB; Lehmann et al., 2012), which assessed coercive behaviors intended to gain compliance from a victim. Participants rated statements such

as “Demanded obedience,” “Expected me to meet his sexual needs regardless of my needs,” and “Treated me like I was helpless or incapable”. This scale consisted of eight statements where the participants rated their level of agreement with each statement on a Likert scale from 1 (*never*) to 5 (*very frequently*). The Cronbach’s α for this subscale was .92.

Love Dependence

Graham (1995) developed a scale to assess levels of Stockholm Syndrome for individuals in violent or hostile situations. The love dependence subscale aims to assess the individual’s sense of feeling as though one cannot live without one’s partner (Graham et al., 1995). Participants rated items such as “My partner’s love and protection are more important than any hurt they may cause me,” “I need my partner’s protection and nurturance to survive,” and “In my eyes my partner is like a God”. This measure consisted of ten items where participants rated the frequency of feeling this experience with their partner with each statement on a Likert scale from 1 (*never*) to 5 (*always*). No items were reverse coded within this subscale. The Cronbach’s α for this subscale is .89.

Self-Esteem

Rosenberg (1965) created and validated the Rosenberg’s self-esteem scale to assess both positive and negative feelings about the self in this unidimensional measure. Participants rated statements such as “On the whole, I am satisfied with myself.,” “I feel that I have a number of good qualities,” and “I am able to do things as well as most other people”. This measure consisted of ten items where the participants rated their level of agreement with each statement on a Likert scale from 1 (*strongly agree*) to 4 (*strongly disagree*). Where a higher score indicated higher levels of self-esteem. The score of five items were reverse coded for the purpose of this

subscale including items such as “At times I think I am no good at all,” “I feel I do not have much to be proud of,” and, “I certainly feel useless at times”. The Cronbach’s α was .82.

Self-Blame

For this variable we used the Blaming subscale that is part of the Checklist of Controlling Behaviors (CCB; Lehmann et al., 2012) and assesses coercive behaviors intended to gain compliance from the victim. We will utilize this subscale to assess levels of self-blame in participants. Participants rated statements such as “It was my fault,” “I deserved it,” and “I provoked him”. This scale consisted of seven statements where the participants rated their level of agreement with each statement on a Likert scale from 1 (*never*) to 5 (*very frequently*). The Cronbach’s α for this subscale was .93.

Attachment

To assess adult attachment, we used the Experiences in Close Relationships scale (ECR; Fraley et al., 2000). This is a 36-item scale that measures individuals on two subscales of attachment: avoidance and anxiety. For the purpose of this study, I utilized the anxiety subscale of the ECR. Participants answered questions such as: “I 'm afraid that I will lose my partner's love,” “I often wish that my partner's feelings for me were as strong as my feelings for him or her,” and “It helps to turn to my romantic partner in times of need”. Participants rated items on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). The Cronbach’s *a* for this subscale was .91.

Data Preparation

All variables were checked for normality, with skewness and kurtosis within appropriate ranges. Multivariate normality was also confirmed. No multivariate outliers were identified. One missing data pattern was detected, and Full Information Maximum Likelihood was used to address missing data (Muthen & Muthen, 2007). Data was not transformed, and sample

characteristics were calculated using IBM SPSS Statistics Version 28. Descriptive statistics and correlations of subscales were assessed utilizing IBM SPSS v.28 (IBM Corp, 2022).

Analysis Plan

First, Pearson's correlations were calculated using IBM SPSS Statistics Version 28 (IBM Corp, 2022) to assess the bivariate associations among the violence victimization and profile scales; anxious/avoidant attachment, intermittent reinforcement/punishment, power, love dependence, self-esteem, and self-blame. Next, a latent profile analysis (LPA) was specified to assess profiles for individuals who were in a relationship. The purpose of selecting an LPA over Latent Class Analysis (LCA) was due to LPA's ability to account for continuous measurement of included variables. LPA is a person-centered statistical approach that identifies latent cases from continuous data (Lanza & Cooper, 2016). The purpose of this analysis was to understand how individuals experience a traumatic bond by investigating profiles of how individuals experience the various facets of a traumatic bond based on Dutton and Painter's (1981) theory of traumatic bonding.

The LPA analysis was performed using Mplus version 8.0 (Muthen & Muthen, 2007). An LPA is conceptually understood to be a model-based, probabilistic clustering approach, which aims to classify individuals form a heterogenous population into homogenous subgroups (DiStefano & Kamphaus, 2006, Lubke & Muthen, 2005, Pastor et al., 2007). With LPA, there is a latent categorical variable identified with a number of profiles specified that model's heterogeneity among the individuals in the sample. Maximum likelihood estimation was used to estimate the model parameters.

The number of classes is not known a priori when conducting an LPA, therefore different models with varying numbers of profiles must be examined and compared to one another to

assess model fit and identify the best model. This examination of model fit includes sample size of the profiles, theoretical assumptions, and uniqueness of the classes themselves (Marsh et al., 2009, Pastor et al., 2007). For the model fit indices, we explored convergence, log likelihood, and entropy. For convergence, we are looking for a model to converge with no errors. Log-likelihood is the ability for the model to be replicated, in general a lower log-likelihood indicates more adequate model fit. Entropy assesses the degree of separation among classes and within class variation. In general, entropy ≥ .8 indicates adequate model fit (Celeux & Soromenho, 1996).

Two additional model fit indices are used to help determine the best model fit, including Bayesian information criterion (BIC) and Lo-Mindell-Rubin log-likelihood ratio test (LMR). Each of these indices are based on the log-likelihood of a fitted model and a penalty term for the number of model parameters and sample size. For BIC, a lower number indicates a better the model fit. The LMR compares the improvement of fit between the nested models to identify if the current model is fitting significantly better than the model prior to it. When this statistic is significant this identifies that the current model is significantly better than the previous model with one less profile category.

Lastly, I completed a path analysis to examine the relationships between facets of trauma bonding and IPV. Through a path model, the researcher specified the model, evaluated the model identification, selected the measures, estimated the model, respecified the model, and reported the results; the researcher completed these steps iteratively (Kline, 2023. The purpose of path analysis provides researchers with the ability to better understand the relationship between different variables (Kline, 2023). To assess model fit of a path analysis, researchers utilize different fit statistics: chi-square goodness of fit, which assesses fitness against a null hypothesis

model; comparative fit index (CFI) which assess the relative improvement of fit from a baseline model; and root mean square error of approximation (RMSEA), which assesses the discrepancy due to approximation per degree of freedom (Bentler, 1990). Generally, there are fluid cut-offs in terms of assessing goodness of fit in path modeling. For this study I utilized chi-square in terms of a non-significant fit indicates rejection of null hypothesis and therefore better fit, CFI where values exceeding .90 indicate reasonable fit, and RMSEA < .05 indicating good model fit (Kline, 2015).

Chapter 4 - Results

Pearson's correlation identified highly correlated variables (See Table 2). All variables were correlated with IPV victimization at $p < .01$. High self-esteem was negatively correlated with all study variables at either $p < .05$ or $p < .01$. Love dependence, intermittent reinforcement/punishment, blame, and power were positively correlated with anxious attachment at $p < .01$. Intermittent reinforcement/punishment was positively correlated with love dependence at $p < .01$. Self-blame and power were positively correlated with intermittent reinforcement/punishment at $p < .01$. Power and self-blame were positively correlated with each other at $p < .01$.

Table 2: Scale Correlations

	M	*SD*	1	2	3	4	5	6
1. IPV Victimization	6.56	12.17						
2. Anxious Attachment	2.83	1.14	.31**					
3. Love Dependence	2.18	0.93	.14**	.18**				
4. Int. Rein./Punish.	2.06	0.95	.52**	.51**	.16**			
5. High Self- Esteem	3.52	0.66	-.16**	-.17**	-.09*	-.29**		
6. Blame	1.17	0.53	.63**	.32**	0.09	.44**	-.13**	
7. Power	1.29	0.60	.58**	.38**	0.03	.57**	-0.17	.68**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
Note: Int. Rein./Punish. Is Intermittent Reinforcement/ Punishment.

In reviewing the fit indices, the three-profile model and the four-profile model provided the best model fit (see Table 3). In exploring model fit of an LPA it is important to explore if the model fit is improved with the inclusion of more profiles. The four-class model was selected for further analysis due to good model fit and theoretically sound classes. Specifically, the three-class model was removed due to the lack of variability amongst facets within the profiles, as well as an insignificant LMR statistic. A four-class model provides a class that is high and low on

scores for love dependence which shows an important variability in how individuals may experience trauma bonding, which is important for empirical development. The four-profile model contained nuance, clear high and low scoring facets, a significant p-value on LMR and BLRT fit statistics, and still provided multiple profiles with expected sample inclusion that made it the better fit theoretically.

Table 3: Model Fit

Model Fit Statistics for the Latent Profile Analysis

Classes	LL	BIC	Entropy	LMR	BLRT	1	2	3	4	5
1	-4052.32	8179.51				100%				
2	-3681.22	7480.97	0.96	-4052.32	**-4052.32**	93%	7%			
3	-3473.12	7108.43	0.95	-3681.22	**-3681.22**	7%	89%	4%		
4	-3316.71	6839.28	0.91	**-3473.12**	**-3473.18**	70%	20%	7%	3%	
5	-3324.26	6698.04	0.92	-3316.71	**-3316.71**	1%	20%	70%	7%	2%

Note. LL = Log-Likelihood BIC=Bayesian Information Criteria LMR=Vuong-Lo-Mendell-Rubin Likelihood BLRT=Bootstrap Likelihood Ratio Test.

Based on indicator means in Table 4, these four classes were labeled based on their most predominant and lowest facet of trauma bonding theory experienced as well as generally high and generally low facets: (a) high intermittency (b) probable trauma bond (c) no trauma bond (d) high power. Even as these classes were named based on their highest and lowest facet all profiles experienced a range of each type of facet assessed (e.g., intermittent good/bad behavior, low self-esteem, love dependence, blame, avoidant attachment, anxious attachment, and power).

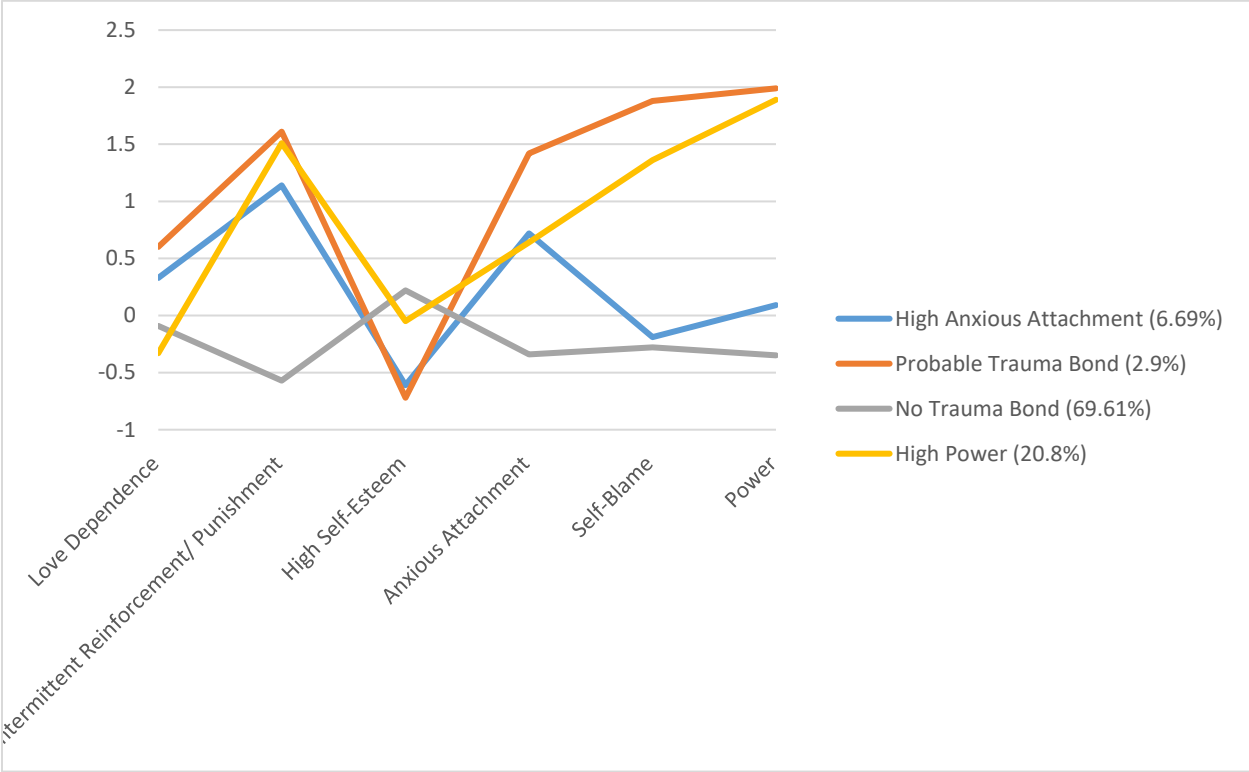
Table 4: **Latent Profile Analysis Classes (*N* = 510)**

	High Anxious Attachment *n*=106		No Trauma Bond *n*=355		Probable Trauma Bond *n*=15		High Intermittency *n*=34	
Class Variables	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Love Dependence	2.49	0.12	2.09	0.05	2.79	0.22	1.88	0.16
Intermittent Reinforcement/ Punishment	3.13	0.08	1.51	0.04	3.58	0.19	3.49	0.13
High Self -Esteem	3.13	0.08	3.67	0.04	3.09	0.17	3.48	0.10
Anxious Attachment	3.63	0.18	2.44	0.05	4.39	0.41	3.57	0.22
Self-Blame	1.07	0.02	1.02	0.01	3.77	0.17	1.89	0.08
Power	1.34	0.05	1.07	0.01	3.09	0.32	2.43	0.17

The mean scale scores were then standardized to visually compare them (see Figure 4-1). Figure 1 provides information on what the profiles look like based on where the indicator mean was on specific facets. In the profile named *high anxious attachment* (20.8%), individuals scored above average on intermittent reinforcement/punishment but scored average (e.g., high self-esteem, intermittent reinforcement/punishment) or below average (e.g., self-blame, power, love dependence) on all other facets. In the profile named *no trauma bond* (69.61%), individuals scored high on levels of self-esteem while scoring below average on all other facets (e.g., love dependence, intermittent reinforcement/punishment, anxious attachment, self-blame, and power), which indicated it is likely these individuals do not experience traumatic bonding in their relationship. In the profile named *probable trauma bond* (2.9%), individuals scored above average on almost all facets of trauma bonding (e.g., love dependence, intermittent reinforcement/punishment, anxious attachment, self-blame, and power) while scoring average on self-esteem. Lastly, the profile named *high intermittency* (6.69%), individuals scored slightly above average on facets (e.g., intermittent reinforcement/punishment, high self-esteem, and

anxious attachment) but scored below average on other facets (e.g., love dependence, self-blame, and power).

Figure 4-1: Standardized Profile Means



Profile Demographics

Demographic information of profiles is provided in Table 5. Percentages for demographic factors were calculated within profile membership to assist in examining demographic composition of each profile. All profiles have predominantly White participants, in heterosexual relationships, married or in a committed monogamous relationship, made between $25,000 and $100,000 per year, and received a high school diploma or GED or a bachelor's degree. Profiles varied in gender composition with high anxious attachment, no trauma bond, and probable trauma bond being composed of more female participants and high intermittency being composed of more male participants. In addition to gender, there appeared to be more diversity in sexual orientation composition for the no trauma bond group, this profile included all sexual

orientations including heterosexual, bisexual, lesbian/gay, queer, pansexual, and other, whereas other profiles were predominantly composed of heterosexual and bisexual participants. In addition, the probable trauma bond profile was predominantly composed of individuals who had a high school diploma or GED, and included individuals with a PhD or higher, it had no individuals who identified themselves as having some high school or trade school education.

In exploring if there are significant differences by demographic factors among the profiles there were no significant differences in gender ($\chi^2 = 4.45(6)$, $p = .616$), ethnicity ($\chi^2 = 1.98(3)$, $p = .576$), sexual orientation ($\chi^2 = 8.81(15)$, $p = .920$), household income ($\chi^2 = 9.85(15)$, $p = .829$), and level of education ($\chi^2 = 13.49(15)$, $p = .564$). Relationship status was approaching significant differences between groups at ($\chi^2 = 15.90(9)$, $p = .069$).

Table 5: **Profile Demographics**

		High Anxious Attachment		No Trauma Bond		Probable Trauma Bond		High Intermittency	
		n = 106		*n* = 15		*n* = 355		*n* = 34	
		N/M	*%*	*N/M*	*%*	*N/M*	*%*	*N/M*	*%*
Gender									
	Male	50	47.20%	5	33.30%	156	44.10%	20	58.80%
	Female	55	51.90%	10	66.70%	194	54.50%	14	41.20%
	Non-binary	1	0.90%			5	1.40%		
Ethnicity									
	White	79	74.50%	11	73.30%	285	80.30%	26	76.50%
	Black or African American	16	15.10%	2	13.30%	37	10.40%	4	11.80%
	Asian	6	5.70%	1	6.70%	30	8.50%	2	5.90%

	Hispanic or Latino	9	8.50%	1	6.70%	19	5.40%	6	17.60%
	American Indian	3	2.80%			7	2.00%		
	Southwest Asian					1	0.30%		
Sexual Orientation									
	Heterosexual	88	83.00%	12	80.00%	296	83.30%	31	91.20%
	Bisexual	12	11.30%	2	13.30%	34	9.60%	2	5.90%
	Lesbian/Gay	5	4.70%			13	3.70%	1	2.90%
	Queer					2	0.60%		
	Pansexual	1	0.90%	1	6.70%	6	1.70%		
	Other					4	1.10%		
Relationship Type									
	In a committed, monogamous relationship	50	47.20%	6	40.00%	210	59.20%	14	41.20%
	In a committed, open relationship	4	3.80%			11	3.10%		
	In a committed, polyamorous relationship	1	0.90%	1	6.70%	4	1.10%		
	Married	51	48.10%	8	53.30%	130	36.60%	20	58.80%
Household Income									
	Less $25,000	13	12.30%	2	13.30%	43	12.10%	3	8.80%
	$25,000 - $50,000	25	23.60%	5	33.30%	99	27.80%	10	29.40%

	$50,000 - $100,000	38	35.80%	6	40.00%	120	33.80%	17	50.00%
	$100,000 - $200,000	25	23.60%	2	13.30%	70	19.70%	4	11.80%
	More than $200,000	5	4.70%			20	5.60%		
	Prefer not to say					3	0.80%		
Education									
	Some High School	1	0.90%			7	2.00%	2	5.90%
	High School Diploma or GED	38	35.80%	7	46.70%	132	37.20%	15	44.10%
	Bachelor's Degree	44	41.50%	4	26.70%	149	41.90%	14	41.20%
	Master's Degree	18	17.00%	3	20.00%	42	11.80%	2	5.90%
	Ph.D. or higher	1	0.90%	1	6.70%	8	2.30%	1	2.90%
	Trade School	4	3.80%			17	4.80%		

When assessing direct effects between the trauma bonding facets (e.g., love dependence, intermittent reinforcement/punishment, self-esteem, anxious attachment, self-blame, and power) and different forms of IPV, the model terminated normally. Based on the direct paths identified in the model there are specific paths to note that are significant for outcomes. Figure 4-2 identifies the model itself and facets which had a significant relationship with violence outcomes. Table 6 identified all paths in the model and identified significant paths relationship with severe IPV. In terms of model fit this model terminated normally (AIC = 1307.68; BIC = 1419.99) These predictors explained 31% of the variance in physical IPV (p <.001), 59% of the variance in psychological IPV (p <.001), 10% of the variance in sexual IPV p <.005), and 35% of the variance in severe IPV p <.001). Higher levels of love dependence was linked with a 50%

increase in the odds of physical IPV (*OR*=1.50, *p* =0.004) and higher scores on intermittent reinforcement and punishment is linked with an increased likelihood of physical IPV by over 2 times (*OR*=2.44, *p* < .001). Higher scores on self-esteem were approaching significance of decreasing the likelihood of physical IPV by 35% (*OR*=0.65, *p* =0.068). Higher scores on intermittent reinforcement and punishment increased the likelihood of psychological IPV by over three times (*OR*=3.44, *p* < .001) and higher scores unequal power increased the likelihood of psychological IPV by over 16 times (*OR*=16.84, *p* < .001). With this, higher scores on self-blame were approaching significance of decreasing the likelihood of psychological IPV by 65% (*OR*=0.35, *p* =0.053). Higher scores on love dependence was linked with a 29% increase in the likelihood of sexual IPV (*OR*=1.29, *p* =0.043) and higher scores on intermittent reinforcement and punishment was linked with a 74% increase in the likelihood of sexual IPV (*OR*=1.74, *p* < .001).Higher scores on love dependence were linked with an 88% increase in the likelihood of severe IPV (*OR*=1.88, *p* = 0.002), as well as higher scores on intermittent reinforcement and punishment increased the likelihood of severe IPV by over two times (*OR*=2.13, *p* = 0.005), and higher scores on self-blame increased the likelihood of severe IPV by over two times (*OR*=2.52, *p* = 0.009).

Figure 4-2 Path Model with Significant Relationships (*n*=510)

**Note: Only significant and approaching significant relationships are shown with an arrow for the purpose of this model. Significant relationships are bold and approaching significant are dashed.*

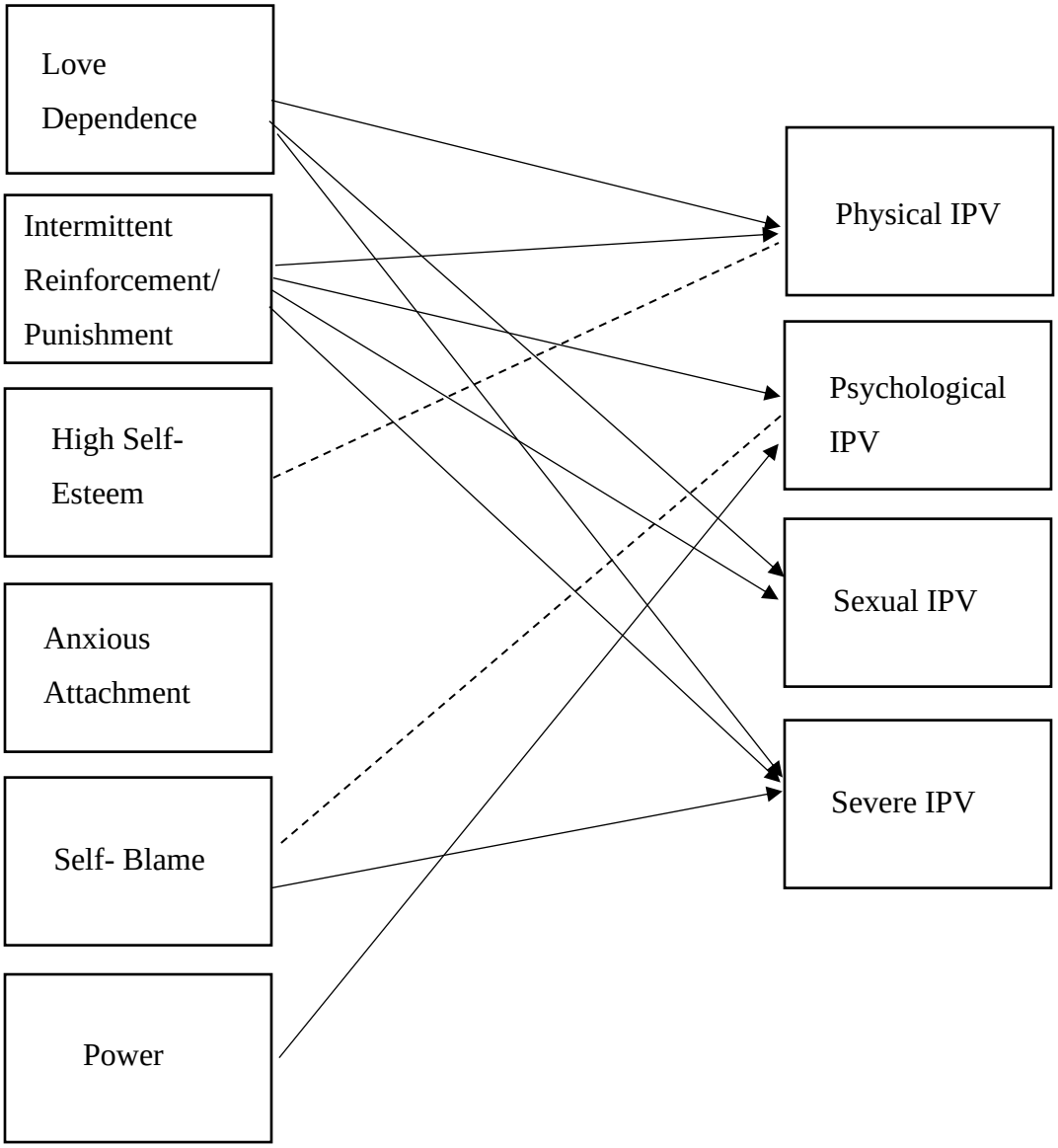


Table 6: Direct Effects of Path Analysis (*N* = 510)

Outcome	Variable	*OR*	*SE*	*95% CI*	*p*
Physical IPV					
	Love Dependence	1.50	0.22	[1.12-2.00]	**0.004**
	Int Rein./Punish.	2.44	0.46	[1.69-3.53]	**<.001**
	High Self-Esteem	0.65	0.16	[0.41-1.04]	0.068
	Anxious Attachment	0.89	0.13	[0.68-1.18]	0.415
	Self-Blame	1.55	0.46	[0.87-2.78]	0.138
	Power	1.22	0.35	[0.69-2.16]	0.484
Psychological IPV					
	Love Dependence	1.05	0.15	[0.78-1.39]	0.7965
	Int Rein./Punish.	3.44	0.88	[2.08-5.69]	**<.001**
	High Self-Esteem	0.85	0.20	[0.53-1.36]	0.496
	Anxious Attachment	0.81	0.14	[0.58-1.13]	0.222
	Self-Blame	0.35	0.20	[0.11-1.09]	0.053
	Power	16.84	18.63	[1.93-147.24]	**<.001**
Sexual IPV					
	Love Dependence	1.29	0.16	[1.01-1.64]	**0.043**
	Int Rein./Punish.	1.74	0.28	[1.27-2.38]	**<.001**
	High Self-Esteem	0.93	0.19	[0.63-1.39]	0.724
	Anxious Attachment	0.83	0.11	[0.65-1.07]	0.142
	Self-Blame	1.19	0.32	[0.71-2.01]	0.504
	Power	1.07	0.28	[0.64-1.79]	0.799
Severe IPV					
	Love Dependence	1.88	0.42	[1.22-2.91]	**0.002**
	Int Rein./Punish.	2.13	0.63	[1.19-3.80]	**0.005**
	High Self-Esteem	0.78	0.27	[0.39-1.54]	0.470
	Anxious Attachment	1.05	0.21	[0.71-1.55]	0.825
	Self-Blame	2.52	0.89	[1.26-5.01]	**0.009**
	Power	0.91	0.36	[0.42-1.99]	0.812

**Note: Bold denotes significant effect between variables. Int Rein./Punish. is Intermittent Reinforcement/ Punishment.*

Chapter 5 - Discussion

This is the first study to explore ways in which individuals experience proposed components of a trauma bond based on Dutton and Painters (1981) theory. I found four distinct profiles that varied in their experiences of the different components of a trauma bond. These four profiles were named (a) high anxious attachment (b) no trauma bond, (c) probable trauma bond, and (d) high intermittency. Additionally, this study examined how the facets of a trauma bond were significantly related to various types of IPV and found that different facets of a trauma bond were uniquely related to different types of IPV (physical, psychological, sexual, and severe). These findings offer insight into the varied perspectives and experiences of individuals regarding IPV and how they may experience facets of trauma bonding. Recognizing the diversity in these experiences enhances the nuanced understanding needed for effective conceptualization, intervention, and treatment.

The findings from the LPA highlight distinct variations regarding how individuals may experience the different facets of a trauma bond. The *high anxious attachment* profile shows above-average scores on anxious attachment, but average or below-average scores on other facets like self-blame, power, and love dependence. Previous research has found that higher levels of anxious attachment was related to relationship vulnerabilities (Velotti et al., 2008) and women with an anxious attachment found more difficulty leaving their violent relationships (Dutton & Painter, 1993; Doumas et al., 2008; Henderson et al., 1997; Shurman & Rodriguez, 2006). This is evidence to suggest that individuals in this profile likely experience an anxious attachment style that could negatively impact their relationship but are likely not experiencing traumatic bonding in their current relationship. Conversely, the *no trauma bond* profile indicates high self-esteem alongside below-average scores on all other trauma bonding facets, which likely

indicates these individuals are not experiencing a trauma bond in their current relationship. This profile also contained the highest number of participants, which is logical, assuming the majority of individuals in a community sample would not experience a trauma bond in their current romantic relationship.

Individuals in the *probable trauma bond* profile exhibit above-average scores on most trauma bonding facets. Although it cannot be determined completely, it is likely that this small group of participants may be experiencing a trauma bond in their current relationship. Lastly, the *high intermittency* profile reveals above-average scores on intermittent reinforcement/punishment, high self-esteem, and anxious attachment, coupled with below-average scores on love dependence, self-blame, and power. This profile may be experiencing unhealthy relationship dynamics, but they may not be experiencing an all-encompassing trauma bond. Further research on this profile may be warranted to further understand the experiences of this profile and to assess if they are on a pathway to developing a trauma bond. Overall, these findings offer novel insights on how different facets of trauma bonding contribute to individuals' experiences in their relationships.

Across profiles, there were no demographic differences that were found to be significant. Predominantly, participants were White, in heterosexual relationships, married or in committed monogamous relationships, earning between $25,000 and $100,000 annually, and hold a high school diploma/GED or a bachelor’s degree. The only significant difference that was close to being statistically significant was relationship status across the profiles.

In terms of the path analysis, what is notable in this study is that love dependence had a significant relationship with almost all forms of violence, but not with psychological IPV. It’s also important to note that love dependence increases the likelihood of physical IPV by 50%,

sexual IPV by 29%, and severe IPV by 88%. Researchers have consistently found that love has been a confusing aspect of relationships where IPV is present and is often a reason that individuals find it difficult to leave violent relationships (Dutton & Painter, 1981, 1993; Henderson et al., 1997; Godbout et al., 2017; Gottman & Jacobson, 1998; Sanderson, 2008). It could be that love dependence is associated with more severe forms of IPV.

Intermittent reinforcement and punishment had a significant association all forms of violence. Intermittent reinforcement and punishment increased the likelihood of physical IPV by over two times, it increased the likelihood of psychological IPV by over three times, it also increased the likelihood of sexual IPV by 74%, and finally increased the likelihood of severe IPV by over two times. Potentially, intermittent reinforcement and punishment could be viewed as a type of psychological IPV. Intermittent reinforcement and punishment have previously been related to difficulties in survivors deciding whether to stay or leave in their relationship (Miller, 2012; Presbitero, 2020), but this concept has not been applied to specific forms of violence. It is important to continue to explore other factors associated with intermittent reinforcement and punishment to parse out how this facet may contribute or have strong relationships with IPV.

This study also found that power only had a significant relationship with psychological IPV in this study. It also found that higher scores on unequal relational power increased the likelihood of psychological IPV by over 16 times. The perpetrator's power in IPV relationships has previously been related to coercive control, and previous studies have found a significant association between coercive control and elevated rates of psychological, physical, and sexual IPV (Anderson, 2008; Coker et al., 2002; Myphill, 2015). In this study, power only having a strong relationship with psychological IPV could be due to the fact that psychological IPV could be a key mechanism in gaining control over one's partner. Dutton and Painter (1981) identified

power as a key aspect of traumatic bonding and interestingly, it did not have significant relationships with other forms of IPV in this study.

Additionally, self-blame had a significant association with severe IPV. Self-blame increased the likelihood of severe IPV by over two times. Researchers have found self-blame to be an integral aspect of how individuals come to stay in a trauma bond and a way in which they rationalize the violent behaviors they experience (Dutton &Painter 1981, 1993; Sanderson, 2008). Previous studies have found that IPV has a repetitive and escalating nature over time (Cochran et al., 2011). The psychological trauma inflicted by IPV can create strong emotional bonds that entrap victims in abusive relationships (Dokkedahl et al., 2019). Love dependence and self-blame can be viewed as maintenance factors that contribute to victims feeling entrapped in IPV relationships (Dutton & Painter, 1981), which may explain their association with severe IPV, where the victim may feel trapped in the relationship. It is important to understand the role of love dependence and self-blame in situations where severe IPV is present.

Research Implications

This study provides evidence that individuals may experience facets of Dutton and Painter's (1981) conceptualization of trauma bonding differently, and future research could benefit from a more thorough examination of how individuals experience components of traumatic bonding. Although there appeared to be a profile that did not experience a trauma bond in their relationship, and another where it was probable that they were experiencing a trauma bond in their relationship based on Dutton & Painter's (1981) conceptualization, there were also two profiles that appeared to experience only some aspects of a trauma bond (e.g., anxious attachment, intermittency of rewards and punishment). Future exploration about the impacts,

consequences, and relationship outcomes when individuals experience different facets of a trauma bond is needed.

Currently, the only validated measure that exists to assess traumatic bonding is the Stockholm Syndrome scale (Graham, 1995). However, based on the conceptualization of Dutton and Painter (1981), it appears that the Stockholm Syndrome scale (Graham, 1995) only captures one component of a trauma bond, which is love dependency. This study highlights a need for a validated measure that accurately captures all facets of traumatic bonding due to individuals potentially experiencing only some of the facets of a trauma bond at a time. Future research could develop a measure specifically for traumatic bonding that captures all components that make up a trauma bond.

In the future it may also be helpful to continue to explore facets of trauma bonding and associations they may have with different types of IPV, and the individual's experience of IPV. Understanding how facets of trauma bonding may increase or decrease the likelihood of types of violence is integral to conceptualization, education, and intervention techniques for IPV. It may also be important to explore these aspects with controls and other contextual factors to see what this concept may look like within other samples. As most of these questions focused on victimization/survivor experiences of IPV and traumatic bonding facets it would be useful to explore perpetrator experiences to provide contextual information to this phenomenon. In conclusion, further exploration of trauma bonding's intersections with different types of IPV and its impact on both victims and perpetrators is essential for comprehensive conceptualization, education, and intervention strategies aimed at addressing IPV effectively, emphasizing the need for broader studies encompassing diverse samples and contextual factors.

Clinical Implications

This study highlights the importance of personalized interventions and attunement to specific needs of individuals seeking therapy who may be in unhealthy relationships. Clinically, this study highlights that if a clinician believes an individual is experiencing a trauma bond, it is important to assess all facets of a trauma bond, as individuals may only struggle with certain components of what makes up a trauma bond. Additionally, in the context of severe IPV, it may be expected that individuals would experience all facets of trauma bonding to a high capacity, and this study found that only love dependence, self-blame, and intermittent reinforcement and punishment were significantly associated with severe IPV. It may be especially important for clinicians to assess levels of love dependence, self-blame, and intermittent reinforcement and punishment when working with clients experience traumatic bonding or IPV in their relationship.

Sanderson (2008) proposed there are four stages a clinician must be aware of in understanding the survivor's experience in a traumatic bond: trigger phase, reorientation phase, coping phase, and adaptation phase (p.79). The process begins with a rupture of security that leads to reorientation where the survivor's cognitive dissonance where they attribute their own inadequacy to the abuse. Once the coping phase begins, the survivor utilizes compartmentalization to see the positive aspects of the bond, and lastly there is an adaptation phase where the survivor incorporates the abuser's projections into their own beliefs. Sanderson advised that clinicians must work on the "inversion of reality, compromised integrity, and eroded self-esteem and self-efficacy to dispel the impact of the web of abuse" (Sanderson, 2008; p. 80). When working with clients who are experiencing traumatic bonding, understanding how consuming a traumatic bond can be for victims is paramount.

Overall, it is important for clinicians to explore and understand the multi-faceted experience that survivors may experience in a trauma bond. It is also important for clinicians to discuss the different facets of a trauma bond with clients, how they experience each facet, and how this may increase or decrease the likelihood IPV victimization. If working with a couple, it would be imperative for clinicians to separate partners when assessing IPV and traumatic bonding to protect the survivor's emotional and physical safety in session (Keilholtz & Spencer, 2022). Dyadic treatment is not recommended for couples where a traumatic bond is present.

Limitations and Future Research

One potential limitation of this study is that this sample is a community sample, which reported lower levels of IPV. These results may not translate to more clinical samples, such as from individuals seeking services specifically for IPV victimization. It would be important for future research to explore a clinical sample that is more likely to experience higher levels of IPV and potentially traumatic bonding to explore the strength and replicability of findings in this study. Another limitation is that in order to have a large enough sample size, a gender-diverse sample was used in the study. Although this could potentially be a strength of the study, it is important to consider the intersectionality of gender identity with other social identities and how they may influence the experience of a traumatic bond. Not accounting for these intersecting identities may result in incomplete or biased interpretations of findings. As this study is preliminary, the purpose was to complete a foundational understanding of this phenomenon. Future research can explore additional intersecting identities in hopes to provide underlying mechanisms and a more holistic understanding of the experience of trauma bonding across intersecting identities and cultures. Another limitation of this study is that the probable trauma bonding profile only includes 15 participants. Due to this low of a profile it is important to note

that replicability of this study may not be possible. It is paramount to continue to explore and develop an understanding of this phenomenon to provide knowledge to future research and determine empiricism of trauma bonding. Another potential limitation includes the difficulty around defining trauma bonding, with no clear empirical or definitive cut offs, and exploring how people experience varying levels of trauma bonding. In the future, it would be important to form conceptual definitions of trauma bonding and its facets as well as identify cut-offs to be able to clearly identify if an individual is experiencing a trauma bond or is not. Overall, it would be beneficial to explore the experiences of traumatic bonding in more clinical samples and to continue to explore other factors associated with identity that may impact the experience of traumatic bonding in romantic relationships.

Conclusion

This study aimed to explore how individuals in romantic relationships experience the facets of trauma bonding and identify if proposed facets of trauma bonding have significant associations with various forms of IPV. Within our sample, using an LPA, four unique profiles were identified and labelled: (a) high anxious attachment (b) probable trauma bond, (c) no trauma bond, and (d) high intermittency. Additionally, love dependence was related to physical, sexual, and severe IPV; self-blame was related to physical, psychological, and severe IPV; power was related to psychological IPV; and intermittent reinforcement and punishment was related to sexual IPV. With this, higher love dependence increases the likelihood of physical IPV by 50% and higher intermittent reinforcement and punishment increases the likelihood of physical IPV by more than two times. Higher intermittent reinforcement and punishment increases the likelihood of psychological IPV by more than three times and higher levels of unequal power increase the likelihood of psychological IPV by over 16 times. Additionally, higher levels of love

dependence increase the likelihood of sexual IPV by 29% and higher levels of intermittent reinforcement and punishment increase the likelihood of sexual IPV by 74%. Lastly, higher love dependence increases the likelihood of severe IPV by 88%, higher intermittent reinforcement and punishment and higher self-blame increases the likelihood of severe IPV by more than two times. This foundational exploration of trauma bonding in the context of IPV relationships highlighted a need to further research on this topic to gain a broader understanding of how individuals may experience traumatic bonding. With this, it is vital for clinicians to assess all facets of trauma bonding, as individuals may be experiencing only some facets of a trauma bond that would warrant attention in treatment.

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Appendix

Intermittent Reinforcement and Punishment Questions

1. I both love and fear my partner.
2. My relationship is a balance between love and pain.
3. The way my partner treats me often changes between caring and hurtful.
4. Some days my partner is very nice, and other days they hurt me.
5. *My partner's actions toward me are consistently positive.*
6. The way my partner treats me often changes between good and bad.
7. My partner violates my trust.
8. I continue to try to trust my partner, even though they hurt me.
9. My partner earns my trust back many times after they hurt me.
10. My partner promises to protect me and doesn't keep that promise.
11. The way my partner portrays themselves to the public is very different than how they treat me.
12. The way my partner portrays themselves to the public is much kinder than how they treat me.
13. My partner has betrayed me.

Note: statements in italics denote a reverse coded statements