



Published in final edited form as:

Psychol Trauma. 2011 June 1; 3(2): 192–200. doi:10.1037/a0021652.

Victim-Offender Relationship Status Moderates the Relationships of Peritraumatic Emotional Responses, Active Resistance, and Posttraumatic Stress Symptomatology in Female Rape Survivors

Brian A. Feinstein,

National Center for Posttraumatic Stress Disorder, VA Boston Healthcare System

Kathryn L. Humphreys,

University of California, Los Angeles

Michelle J. Bovin,

National Center for Posttraumatic Stress Disorder, VA Boston Healthcare System and Temple University

Brian P. Marx, and

National Center for Posttraumatic Stress Disorder, VA Boston Healthcare System and Boston University School of Medicine

Patricia A. Resick

National Center for Posttraumatic Stress Disorder, VA Boston Healthcare System and Boston University School of Medicine

Abstract

This study examined whether the level of victim-offender relationship (VOR) moderated the relationship between peritraumatic fear and active resistance as well as the relationship between peritraumatic fear and posttraumatic stress symptom severity in a community sample of female rape survivors. One hundred thirty-five participants were interviewed about their emotional and behavioral responses during the rape and assessed for posttraumatic stress symptomatology within one month of the assault. Results indicated that peritraumatic fear was positively associated with active resistance, but only among survivors of acquaintance rape. Additionally, peritraumatic fear was positively associated with posttraumatic stress symptom severity, but only among survivors of intimate partner rape. These results suggest that VOR may be an important contextual factor that influences emotional and behavioral responses during rape as well as posttraumatic stress symptomatology in its aftermath.

Correspondence concerning this article should be directed to Brian P. Marx, National Center for PTSD (116B-4), VA Boston Healthcare System, 150 South Huntington Avenue, Boston, Massachusetts 02130. brian.marx@va.gov.
Brian A. Feinstein, National Center for PTSD, VA Boston Healthcare System, Boston, Massachusetts; Kathryn L. Humphreys, Department of Psychology, University of California, Los Angeles, California; Michelle J. Bovin, National Center for PTSD, VA Boston Healthcare System, Boston, Massachusetts and Department of Psychology, Temple University, Philadelphia, Pennsylvania; Brian P. Marx, Patricia A. Resick, National Center for PTSD, VA Boston Healthcare System, Boston, Massachusetts and Department of Psychiatry, Boston University School of Medicine, Boston, Massachusetts.

Publisher's Disclaimer: The following manuscript is the final accepted manuscript. It has not been subjected to the final copyediting, fact-checking, and proofreading required for formal publication. It is not the definitive, publisher-authenticated version. The American Psychological Association and its Council of Editors disclaim any responsibility or liabilities for errors or omissions of this manuscript version, any version derived from this manuscript by NIH, or other third parties. The published version is available at www.apa.org/pubs/journals/TRA

Keywords

posttraumatic stress; rape; peritraumatic fear; resistance; victim-offender relationship

Empirical evidence has suggested that survivors of interpersonal traumas, compared with survivors of non-interpersonal traumas, are more likely to develop posttraumatic stress disorder (PTSD; Kessler, Chiu, Demler, & Walters, 2005; Kessler et al., 1994). These effects may be particularly accentuated for survivors of rape and sexual assault (SA). Specifically, data from the National Comorbidity Survey showed that, while less than 10% of women who reported a non-interpersonal event (e.g., accident, natural disaster) as their most upsetting trauma developed PTSD, approximately 46% of women who reported rape as their most upsetting trauma developed PTSD (Kessler et al., 1995). A meta-analysis of PTSD risk factors (Ozer, Best, Lipsey, & Weiss, 2003) also found that interpersonal traumas, relative to accidents or combat-related traumas, demonstrated stronger relationships between both pre- and peritraumatic factors (i.e., history of prior trauma, psychological problems prior to trauma, perceived life threat during trauma) and PTSD. Charuvastra and Cloitre (2008) suggested that the higher rate of PTSD following events generated by human intent highlights the importance of subjective experience as a contributor to the development of PTSD. In light of these findings that suggest that interpersonal and non-interpersonal traumas differ in potentially important ways, it is necessary to examine factors that may account for such differences.

The victim-offender relationship (VOR) is a contextual factor unique to interpersonal traumas, such as rape, which may influence the strength and direction of a victim's emotional, cognitive, and behavioral responses during as well as after the trauma. Empirical research on whether the VOR affects survivor reactions during and after the assault has provided inconsistent results. Some studies have found that survivors of known offender SA were more likely to meet criteria for PTSD or report more severe PTSD symptomatology than those of unknown offender SA (Lawyer, Ruggiero, Resnick, Kilpatrick, & Saunders, 2006; Masho & Ahmed, 2007), while others have found the opposite relationship (Bownes, O'Gorman, & Sayers, 1991; Ullman & Filipas, 2001; Ullman, Filipas, Townsend, & Starzynski, 2006). Likewise, although most studies have found that peritraumatic fear or the experience that one's life was threatened was greater among survivors of unknown offender SA (Ellis, Atkeson, & Calhoun, 1981; Koss, Dinero, Seibel, & Cox, 1988; Ullman & Siegel, 1993; Ullman et al., 2006), one study found that survivors of known and unknown offender SA did not differ on the degree to which they experienced peritraumatic fear (Frank, Turner, & Stewart, 1980). Inconsistent findings have also been revealed when examining the association between VOR and physical and verbal resistance during the assault. Specifically, some research has shown that SA survivors may be less likely to physically resist during the assault as the VOR becomes more intimate in nature (Bart & O'Brien, 1984; Clay-Warner, 2002, 2003; Koss et al., 1988; Turchik, Probst, Chau, Nigoff, & Gidycz, 2007), while other studies have found no differences in the use of physical or verbal resistance based on VOR status (Ullman & Siegel, 1993). Notably, Ullman and Siegel (1993) also found that, within the known offender SA group, survivors of acquaintance SA resisted more, both physically and verbally, than survivors of intimate partner SA.

There are several potential explanations for the apparent discrepancies regarding the influence of the VOR on peritraumatic reactions and PTSD, including between study variability in how sexual assault was defined and determining VOR status using a simple "known" versus "unknown" dichotomy. Another possible explanation is that VOR may exert its effects more meaningfully when it affects the direction and/or strength of the associations among other variables (i.e., moderates the zero-order correlations among other

variables, such as peritraumatic fear, active resistance, and PTSD). Many studies have provided support for the association between peritraumatic fear and PTSD (e.g., Brewin, Andrews, & Rose, 2000; Kilpatrick et al., 1998; Ozer et al., 2003), but these findings are not universally supported (e.g., Roemer, Orsillo, Borkovec, & Litz, 1998). Furthermore, even in studies where an overall association between peritraumatic fear and PTSD was found, some individuals who experienced peritraumatic fear did not develop PTSD (e.g., Creamer, McFarlane, & Burgess, 2005). Additionally, there has been very little work examining the relationship between peritraumatic fear and resistance. One study with a sample of known offender SA survivors found that fear of exacerbating injury was positively associated with active resistance (Nurius, Norris, Young, Graham, & Gaylord, 2000). On the other hand, in a rape sample that included multiple VOR types, Kaysen and colleagues (2005)¹ found that perceived threat of harm was related to passive resistance behaviors, but not active resistance behaviors. It is possible that the VOR may help explain the equivocal findings regarding the relationships between peritraumatic fear and both PTSD and resistance.

To our knowledge, only one prior study has examined VOR as a moderator. In that study, Ullman et al. (2006) found that peritraumatic fear was positively related to PTSD symptomatology for survivors of SA perpetrated by acquaintances or relatives, but not for survivors of SA perpetrated by strangers or intimate partners. Ullman and colleagues suggested that these findings may be the result of restricted variability for peritraumatic fear and PTSD symptomatology among survivors of stranger SA; however, they did not provide an explanation for their null finding among survivors of intimate partner SA. One potential explanation is that survivors of intimate partner SA had experienced a previous assault by the same assailant and knew that the index assault was not likely to lead to serious injury or death. Although the Ullman et al. study is notable as the first one to examine the VOR as a moderator of other variable associations, their study had significant limitations. Specifically, the authors relied on a self-report measure to assess PTSD symptomatology and used a single “Yes/No” item to assess peritraumatic fear. Further, results of the study may have been confounded by a potential retrospective memory bias due to an extended period of time ($M = 13$ years) between the occurrence of the index assaults and participation in the study. These limitations suggest that further examination of the VOR as a moderator of the relationship between peritraumatic fear and PTSD symptomatology is warranted. Importantly, no prior study has examined the extent to which VOR moderates the relationship between peritraumatic fear and survivors' active resistance during the assault.

The current investigation explored the extent to which VOR moderates the relationship between peritraumatic fear and active resistance as well as the relationship between peritraumatic fear and posttraumatic stress symptomatology among a sample of female rape survivors. Unlike previous investigations, the current study used structured interviews to assess peritraumatic emotions/behaviors and PTSD symptomatology and participants were assessed within one month of their assault. Based on the findings of Ullman et al. (2006), we predicted a positive relationship between peritraumatic fear and PTSD symptom severity for survivors of acquaintance rape, but not for survivors of stranger or intimate partner rape. Additionally, based on the findings of Nurius and colleagues (2000), we predicted a positive relationship between peritraumatic fear and active resistance for survivors of known offender rape (i.e., acquaintance and intimate partner rape), but not for unknown offender (i.e., stranger) rape. This prediction is also consistent with research showing a ceiling effect for peritraumatic fear (Ullman et al., 2006) and active resistance (Koss et al., 1988) among survivors of stranger rape.

^{1, 2}Kaysen et al. (2005) and Rizvi et al. (2008) both analyzed data that was combined from different datasets, one of which was the same data set that the current study's analyses were based on.

Method

Participants

Participants were recruited for a study investigating the course of recovery of rape and physical assault survivors. The current investigation focused solely on survivors of rape ($n = 140$). Sixteen participants were excluded from the analyses because they either were missing VOR data or endorsed “other” as their perpetrator's relationship to them, which precluded categorization into one of the VOR groups. The final sample consisted of 124 female survivors of completed, male-perpetrated rape. In this investigation, rape was defined as any crime involving nonconsensual vaginal, oral, or anal penetration. Participants were excluded from participation in the study due to illiteracy, apparent psychosis, or intoxication at the time of the assessment. Each participant received \$70 for participation in the first session of the study.

The mean age of the sample was 29.95 years ($SD = 8.21$) and the mean education level was 12.52 years ($SD = 2.14$). The racial composition of the sample was 65% African American, 28% White, and 6% who identified as another ethnicity. The marital status composition of the sample was 57% single, 12% married or living with someone, 29% separated or divorced, and less than 2% widowed. The majority of the sample (73%) had an income of less than \$10,000 in the past year, and only 7% had an income greater than \$30,000. Over half of the participants reported a previous sexual assault prior to the rape.

Procedure

Participants were recruited through police departments, hospitals, and victim assistance agencies and were asked to either call or return a postcard if they were interested in participating in the study. Individuals who expressed interest in participating completed the assessment within one month of their rape. Assessments were conducted in a laboratory setting in a large, Midwestern city, by trained Master's level clinicians who received ongoing supervision. Those who could not be scheduled within this time period were not invited to participate.

Measures

The Clinician-Administered PTSD Scale (CAPS; Blake et al., 1990) is a structured clinical interview that assesses DSM-III-R PTSD symptomatology. The version of the CAPS used in the current study assesses the presence of the 17 core PTSD symptoms within the last week (APA, 1987). Items are scored on a 0-4 frequency scale (0 = *none of the time*, 1 = *little of the time/once or twice*, 2 = *some of the time/once or twice a week*, 3 = *much of the time/several times a week*, 4 = *most of the time/daily or almost every day*), and a 0-4 intensity scale (0 = *not at all*, 1 = *a little/mild minimal distress*, 2 = *some/moderate distress*, 3 = *a lot/severe distress*, 4 = *a whole lot/extreme incapacitating distress*). The CAPS provides both a dichotomous diagnosis of PTSD and a continuous symptom severity score. The overall symptom severity score is determined by adding the frequency and intensity values for each symptom, and then adding each of these 17 values together, providing a total PTSD score ranging from 0-136.

The CAPS has consistently demonstrated excellent psychometric properties (see Weathers, Keane, & Davidson, 2001 for a review). Specifically, Blake and colleagues (1990) reported perfect agreement in PTSD diagnosis, interrater reliability coefficients ranging between .92 and .99, internal consistency alpha coefficients ranging between .73 and .85, and convergent validity with the Mississippi Scale for Combat-Related PTSD and the PK Scale of the MMPI. Furthermore, Weathers and colleagues (1991; 1992a,b) found that the CAPS demonstrated excellent 2-3 day test-retest reliability (between .90 and .98). The excellent

psychometric properties of the CAPS have been replicated in a number of other studies (e.g., Hovens et al., 1994; Neal, Busuttil, Herepath, & Strike, 1994; Radnitz et al., 1995). The overall symptom severity score was used in the current study as the measure of PTSD symptom severity following the rape. In our sample, the Cronbach's alpha coefficient was .91.

The Standardized Trauma Interview (STI; Resick, 1986; Resick, Jordan, Girelli, Hutter, & Marhoefer-Dvorack, 1988) is a structured interview consisting of 221 closed-response questions that assess participant demographic characteristics, information about the sexual assault, peritraumatic emotions and behaviors, social support, prior victimization, and treatment history. The current study used questions on the STI that referred to emotions and behaviors during the assault, the relationship between the survivor and perpetrator, other assault characteristics, and the survivor's history of prior abuse. The STI has been used in a number of other studies (e.g., Kaysen et al., 2005; Miller & Resick, 2007; Resick, Galovski, Uhlmansiek, Scher, Clum, & Young-Xu, 2008; Resick, Nishith, Weaver, Astin, & Feuer, 2002; Rizvi, Kaysen, Gutner, Griffin, & Resick, 2008).

The peritraumatic fear scale, created by Rizvi et al. (2008) using items from the STI, was employed in this study. This five-item scale was derived from a pool of 29 items assessing peritraumatic emotions and behaviors using factor analysis. Items on this scale ask about the degree of fear, terror, worry, helplessness, and anxiety experienced by participants during the assault, respectively and employ a Likert-type scale ranging from 0 (*none of the time*) to 4 (*all of the time*). Scores on these items were summed to create a composite peritraumatic fear score ranging from 0 to 20. Because the Rizvi et al. sample was comprised of both sexual and physical assault survivors and, thus, different from the sample examined in this study, we examined the psychometric properties of this scale using Mplus statistical software (Muthén, & Muthén, 2007) prior to employing the measure in this investigation. A confirmatory factor analysis (CFA) of the five items suggested that they adequately assessed the construct of interest (see Table 1 for CFA fit indices, Table 2 for factor loadings, and Table 3 for inter-item correlations). Results also showed that the scale's internal consistency (Cronbach's alpha) was acceptable ($\alpha = .77$).

The active resistance scale, similar to the peritraumatic fear scale, was created by Rizvi et al. (2008) using items from the STI. This six-item scale was derived from the previously noted pool of 29 items assessing peritraumatic emotions and behaviors using factor analysis. Items in this scale assessed the degree to which the participants used each of six active resistance strategies during the assault and employed a Likert-type scale ranging from 0 (*none of the time*) to 4 (*all of the time*). Scores on these items were summed to create a composite active resistance score ranging from 0 to 24. Again, because of sample differences, we examined the psychometric properties of this scale using Mplus statistical software (Muthén, & Muthén, 2007) before employing the measure in this investigation. CFA results showed that the measurement model fit for these items was not ideal (see Table 1 for CFA fit indices, Table 2 for factor loadings, and Table 3 for inter-item correlations). An examination of the factor loadings led us to remove two of the original items (bit or scratched, and begged, pleaded, cried) from the scale. The remaining four items: 1) tried to struggle free, 2) kicked, hit, punched, 3) screamed, 4) cursed or threatened, displayed a good model fit and were retained for subsequent analyses. The Cronbach's alpha for the scale (possible range = 0 – 16) was acceptable ($\alpha = .76$).

VOR status was also assessed using the STI. The STI listed the following possible VOR types: 1) stranger, 2) seen before but never talked to him, 3) talked to him but was not a friend, 4) date, 5) coworker, 6) friend, 7) boyfriend, 8) ex-boyfriend/spouse, 9) co-habitant, 10) fiancé, 11) husband, or 12) other. Respondents were placed into one of three groups

based on their responses: 1) stranger rape ($n = 70$), defined as any individual with whom the survivor had no previous relationship; 2) acquaintance rape ($n = 39$), which included individuals with whom the survivor had seen or talked to prior to the assault, including dates, coworkers, and friends; and 3) intimate partner rape ($n = 15$), which included current and former boyfriends, husbands, and cohabitants. The inclusion of current and former partners in the same group is consistent with previous research (Logan, Cole, & Capillo, 2007; Vaughan, 2001). Further division of the acquaintance rape group for the purpose of analyses was not possible due to the small sample sizes, which limited power to detect effects.

Results

Preliminary analyses

VOR groups were compared on demographic variables using one-way analysis of variance (ANOVA) and chi-square analyses. There were no significant differences between VOR groups on any victim demographic variables (i.e., age, education, race, marital status, and income; lowest $p = .18$). One-way ANOVAs were conducted to examine group differences in the three primary variables of interest (peritraumatic fear, active resistance, and PTSD symptom severity) as well as assault characteristics and history of victimization (see Table 4). Although there were no group differences with regard to peritraumatic fear, survivors of stranger rape reported significantly less active resistance than survivors of known perpetrator rape (both acquaintances and intimates). Survivors of acquaintance rape reported significantly greater PTSD symptom severity than survivors of intimate partner rape.

We also conducted one-way ANOVAs to examine group differences with regard to other assault characteristics. Results indicated that survivors of stranger rape were significantly more likely to report that a weapon was displayed than survivors of known perpetrator rape (both acquaintances and intimates). Although there were no group differences with regard to vaginal penetration, survivors of stranger and intimate rape were more likely to report anal penetration than survivors of acquaintance rape. In addition, although there were no group differences with regard to childhood physical abuse history, childhood sexual abuse history, and previous adult rape or sodomy, survivors of intimate rape were more likely to report previous physical abuse by an intimate partner than survivors of stranger rape.

Multiple linear regression analyses were conducted to examine the relationships between peritraumatic fear and active resistance as well as peritraumatic fear and PTSD symptom severity for the combined sample (all VOR groups included). Results indicated that peritraumatic fear positively predicted PTSD symptom severity ($\beta = 0.20, p < .05$), but did not significantly predict active resistance ($p = ns$).

Moderator analyses

Following the recommendations of Aiken and West (1991) and Frazier, Tix, and Barron (2004), multiple hierarchical linear regressions were performed for each outcome variable, with the main effects of the predictor variable and the VOR entered into Step 1 and the interaction term (predictor variable \times VOR) entered into Step 2. All predictor variables were mean-centered prior to creating the interaction terms in order to reduce multicollinearity (Aiken & West, 1991). The VOR was dummy-coded and product variables were created to represent the interaction terms (Aiken & West, 1991). Two product variables were included in Step 2 of each regression analysis in order to account for the categorical variable having three levels (see Frazier et al., 2004 for a detailed discussion on testing and interpreting interactions involving categorical variables with two or more levels).

Results indicated that VOR significantly moderated the relationship between peritraumatic fear and active resistance. The full model was significant, $F(5, 117) = 4.25, p < .01$, and the incremental effect of the interaction term was also significant ($R^2 = .15; \Delta R^2 = .08; p < .01$). A significant interaction was also found between peritraumatic fear and VOR in predicting active resistance ($\beta = 0.33, p < .05$). Simple slope analyses indicated that the slope for peritraumatic fear on active resistance was significantly different from zero when the conditional value for VOR was acquaintance ($\beta = 0.37, p < .01$), but not when it was intimate or stranger ($ps = ns$; see Figure 1). This suggests that peritraumatic fear is positively predictive of active resistance in women assaulted by acquaintances, but not for those assaulted by intimates or strangers.

Additionally, results indicated that VOR moderated the relationship between peritraumatic fear and PTSD symptom severity. The full model was significant, $F(5, 109) = 2.87, p < .05$, and the incremental effect of the interaction term on PTSD symptom severity was marginally significant ($R^2 = .12; \Delta R^2 = .05; p < .10$). A significant interaction was also found between peritraumatic fear and VOR in predicting PTSD symptom severity ($\beta = -0.50, p < .05$). Simple slope analyses revealed the slope for peritraumatic fear on PTSD symptom severity was significantly different from zero when the conditional value for VOR was intimate ($\beta = 0.77, p < .05$), but not when it was stranger or acquaintance ($ps = ns$; see Figure 2). This suggests that peritraumatic fear is positively predictive of PTSD symptom severity in women sexually assaulted by intimates, but not for those assaulted by strangers or acquaintances. The significant relationship between peritraumatic fear and PTSD symptom severity for survivors of intimate rape remained significant after controlling for active resistance ($\beta = 0.77, p < .05$).

Discussion

The present study supports the notion that VOR may moderate the relationships among peritraumatic responses during rape and the psychological sequelae to such experiences. In this study, VOR moderated the relationship between peritraumatic fear and active resistance, such that greater levels of peritraumatic fear predicted greater attempts to actively resist one's attacker among survivors of acquaintance rape, but not among survivors of stranger rape and intimate partner rape. One speculative explanation for these results is that, whereas the survivors of stranger and intimate partner rape were likely to experience a more violent assault (as evidenced by the greater likelihood of the involvement of a weapon or anal penetration) and consequently experience a reasonable and heightened fear of serious injury or death, survivors of acquaintance rape may have initially perceived that they could successfully resist against their perpetrators. Unfortunately, their active resistance did not prevent the rape, leading to subsequent increases in fear related to their assault.

In contrast, it is likely that survivors of stranger rape experience more intense fear, but resist less during the assault, as a result of the unknown nature of the perpetrator, the unpredictability of the circumstances, and the greater reported use of weapons during the assault. It is possible that these contextual features associated with stranger rape may have contributed to higher levels of fear and lower levels of resistance, as these women may have been particularly concerned with the possible lethality of the assault. This same reasoning applies to survivors of intimate partner rape, defined here as rape perpetrated by current and former boyfriends and husbands. In these instances, it is likely that survivors experienced less fear, but offered more active resistance, as a result of having greater familiarity with the perpetrator and the greater perceived predictability of the assault circumstances. These women were also the most likely to report past intimate partner physical abuse, which is not surprising given that abusive intimate partners often engage in multiple types of violence (Miller, 2006; Smith, Thornton, DeVellis, Earp, & Coker, 2002). It is possible that their

familiarity with intimate partner abuse and their past survival of such assaults may have suggested that their partner was not likely to seriously injure or kill them, leading them to actively resist regardless of their level of fear. Taken together, we caution researchers and practitioners not to generalize the positive relationship between peritraumatic fear and active resistance to all VOR groups.

Results also indicated that VOR moderated the relationship between peritraumatic fear and PTSD symptom severity, such that greater levels of peritraumatic fear predicted greater PTSD symptom severity only among survivors of intimate partner rape. Notably, a significant relationship between peritraumatic fear and PTSD symptom severity was found when all VOR types were included in the analysis. Although these results should be interpreted with caution given that the incremental effect of the interaction term on PTSD symptom severity was only marginally significant, it has been previously noted that moderator effects are notoriously difficult to find in non-experimental studies (McClelland & Judd, 1993). Further, it has been suggested previously that moderator effects explaining as little as 1% of the variance should be considered significant (Evans, 1985). The current analysis revealed that the interaction term uniquely predicted 5% of the variance in PTSD symptom severity, above and beyond the main effects of peritraumatic fear and VOR. These results differ from Ullman and colleagues (2006), who found that peritraumatic fear was positively associated with PTSD symptomatology for survivors of acquaintance and relative perpetrated sexual assault, but not for survivors of stranger and intimate partner perpetrated sexual assault. This discrepancy may be due to the fact that the current study focused solely on survivors of completed rape, whereas Ullman et al. included participants with a range of sexual victimization experiences (i.e., completed rape, attempted rape, sexual coercion, and sexual contact). Although Ullman et al. did find an association between peritraumatic fear and PTSD symptomatology for survivors of acquaintance and relative perpetrated sexual assault, including a broader range of sexual assault experiences may have precluded these investigators from finding this association among survivors of intimate partner SA. Additionally, this discrepancy may be due to the previously mentioned methodological differences between the two studies as well as to the use of a different data analytic approach. In contrast to our approach of maximizing statistical power by including all VOR groups in the analyses, Ullman et al. examined the relationship between peritraumatic fear and PTSD symptomatology separately for each VOR group.

It is also possible that our finding that peritraumatic fear was related to PTSD symptomatology for survivors of intimate partner rape only reflects the differing effects of rape contingent upon the VOR. Consistent with previous theories suggesting that traumatic experiences violate an individual's basic assumptions that the world is safe and meaningful (e.g., Janoff-Bulman, 1992; Resick & Schnicke, 1992) and that one's intimate partner can be trusted not to violate them with such a demeaning betrayal, survivors of intimate partner rape may have experienced more extreme violations of such assumptions than other survivors of sexual assault, resulting in a stronger relationship between peritraumatic fear and PTSD symptomatology.

Furthermore, intimate partner rape is likely qualitatively different than stranger and acquaintance rape because of the ongoing relationship context in which it occurs. Intimate partner rape most frequently occurs in the context of physical and emotional relationship abuse, which was not examined in this paper (Bennice & Resick, 2003; Bennice, Resick, Mechanic & Astin, 2003; Martin, Taft & Resick, 2007). In this study, a larger percentage of survivors of intimate partner rape in this sample reported anal penetration during their rapes, indicating more brutal assaults. This finding might help explain the relationship between peritraumatic fear and PTSD symptom severity among survivors of intimate partner rape (Thornhill & Thornhill, 1990a,b,c; 1991). In other words, it is possible that VOR may be a

proxy for other variables (e.g., other violence, assault severity, types of acts perpetrated), which may affect the degree to which peritraumatic fear is associated with PTSD symptom severity. Future research should examine this possibility.

Although additional research is needed to replicate the current study's findings, these results may have practical implications for clinicians who treat sexual assault survivors. Specifically, these findings highlight the importance of regularly obtaining information about the VOR during the assessment of rape survivors. Clinicians should also be aware of the potential role that the VOR may play in an individual's emotional and behavioral response to the sexual assault as well as the development of PTSD. These findings also support the use of interventions that are specifically tailored to survivors of intimate partner rape, given the unique relationship observed between peritraumatic fear and PTSD symptomatology for these women. If the intimate partner rape survivor is still in the abusive relationship, then clinicians should focus on prevention and safety planning through helping the survivor to understand and acknowledge the risks and dangers associated with staying in the relationship and challenging self-blame attributions (Shields, Resick, & Hanneke, 1990). Such efforts should also include teaching problem-solving strategies and examining ways to safely remove the survivors from her abusive relationship. Once the survivor is no longer in the abusive relationship, then therapy can focus on her PTSD symptomatology. Cognitive Processing Therapy (CPT), which was developed to treat PTSD in rape survivors (Resick & Schnicke, 1992), has been suggested for use with intimate partner and marital rape survivors (Westwell, 1998). CPT activates the trauma memory and then challenges and alters specific misattributions and other maladaptive cognitions related to the traumatic event. Relevant issues of safety, trust, power, esteem, and intimacy are also addressed in CPT. Notably, CPT has been shown to significantly reduce PTSD symptomatology as well as assault-related guilt that may exacerbate PTSD symptomatology (Resick et al., 2002, 2008). Furthermore, clinicians and researchers may benefit from taking a more nuanced approach to examining the VOR by assessing an array of contextual variables for which VOR may serve as a proxy.

There are several limitations to the current investigation. First, we used a convenience sample of survivors of completed rape who reported their experiences to police or other authorities, thus overrepresenting the number of severe assaults, stranger-perpetrated assaults, and assaults involving a weapon (Kaysen et al., 2005). Second, more than half of our sample experienced a previous sexual assault; therefore, PTSD symptomatology reported in this study may be related to or exacerbated by previous assaults. In addition, our intimate partner-perpetrated assault group was relatively small. However, the significant findings for this group point to the inherent strength of the relationship based on the VOR categories used. Finally, data were collected retrospectively, with peritraumatic responses assessed contemporaneously with symptom severity measures; thus, recall may have been influenced by current functioning (Briere, 1997). However, the short interval between assault and assessment could temper any memory biases occurring over time.

Future research should consider the influence of VOR on additional peritraumatic responses and dimensions of post-assault psychological functioning. It would be beneficial to examine the extent to which the VOR moderates the relationships between additional peritraumatic responses and PTSD when taking into account the dynamic nature of PTSD symptoms over time. This is particularly relevant in light of previous findings suggesting that women who were either sexually or physically assaulted by a stranger had smaller symptom reductions over time than women assaulted by someone known to them (Gutner, Rizvi, Monson, & Resick, 2006). Future research should also consider examining the VOR using continuous measures of intimacy or trust, as it is likely that two people categorized as acquaintances may vary significantly in level of intimacy or trust with the victim. Finally, future studies should work to parse apart the mechanisms behind the relationships among peritraumatic

experiences and post-assault psychological functioning, taking contextual factors like VOR into consideration.

Acknowledgments

This research was supported by a grant from the National Institute of Mental Health (R01-MH6992), awarded to Patricia A. Resick.

References

- Aiken, L.S.; West, S.G. *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA: Sage Publications; 1991.
- American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 3rd ed, revised. Washington, DC: Author; 1987.
- Bart PB, O'Brien PH. Stopping rape: Effective avoidance strategies. *Signs: Journal of Women in Culture and Society*. 1984; 10:83–101.
- Blake DD, Weathers FW, Nagy LM, Kaloupek DG, Klauminzer G, Charney DS, et al. A clinical rating scale for assessing current and lifetime PTSD: The CAPS-I. *The Behavior Therapist*. 1990; 18:187–188.
- Bownes I, O'Gorman E, Sayers A. Assault characteristics and posttraumatic stress disorder in rape victims. *Acta Psychiatrica Scandinavica*. 1991; 83:27–30. [PubMed: 2011952]
- Brewin CR, Andrews B, Valentine JD. Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology*. 2000; 68:748–766. [PubMed: 11068961]
- Briere, J. *Psychological assessment of adult posttraumatic states*. Washington, D.C.: American Psychological Association; 1997.
- Charuvastra A, Cloitre M. Social bonds and posttraumatic stress disorder. *Annual Review of Psychology*. 2008; 59:301–328.
- Clay-Warner J. Avoiding rape: The effect of protective actions and situational factors on rape outcome. *Violence and Victims*. 2002; 17:691–705. [PubMed: 12680683]
- Clay-Warner J. The context of sexual violence: Situational predictors of self-protective actions. *Violence and Victims*. 2003; 18:543–556. [PubMed: 14695020]
- Creamer M, McFarlane A, Burgess P. Psychopathology following trauma: The role of subjective experience. *Journal of Affective Disorders*. 2005; 86:175–182. [PubMed: 15935237]
- Ellis EM, Atkeson BM, Calhoun KS. An assessment of long-term reactions to rape. *Journal of Abnormal Psychology*. 1981; 90:263–266. [PubMed: 7288021]
- Evans MG. A Monte Carlo study of the effects of correlated method variance in moderated multiple regression analyses. *Organizational Behavior and Human Decision Processes*. 1985; 36:305–323.
- Frank E, Turner SM, Stewart BD. Initial response to rape: The impact of factors within the rape situation. *Journal of Psychopathology and Behavioral Assessment*. 1980; 2:39–53.
- Frazier PA, Tix AP, Barron KE. Testing moderator and mediator effects in counseling psychology research. *Journal of Counseling Psychology*. 2004; 51:115–134.
- Gutner C, Rizvi S, Monson C, Resick P. Changes in coping strategies, relationship to the perpetrator, and posttraumatic distress in female crime victims. *Journal of Traumatic Stress*. 2006; 19:813–823. [PubMed: 17195978]
- Janoff-Bulman, R. *Shattered assumptions: Towards a new psychology of trauma*. New York, NY, US: Free Press; 1992.
- Kaysen D, Morris M, Rizvi S, Resick P. Peritraumatic responses and their relationship to perceptions of threat in female crime victims. *Violence Against Women*. 2005; 11:1515–1535. [PubMed: 16247114]
- Keane TM, Caddell JM, Taylor KL. Mississippi scale for combat-related posttraumatic stress disorder: Three studies in reliability and validity. *Journal of Consulting and Clinical Psychology*. 1988; 56:85–90. [PubMed: 3346454]

- Kessler RC, Chiu WT, Demler O, Walters EE. Prevalence, severity, and comorbidity of twelve-month DSM-IV disorders in the National Comorbidity Survey Replication (NCS-R). *Archives of General Psychiatry*. 2005; 62:617–627. [PubMed: 15939839]
- Kessler RC, McGonagle KA, Zhao S, Nelson CB, Hughes M, Eshleman S, et al. Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States: Results from the National Comorbidity Survey. *Archives of General Psychiatry*. 1994; 51:8–19. [PubMed: 8279933]
- Kessler RC, Sonnega A, Bromet E, Hughes M, Nelson CB. Posttraumatic stress disorder in the National Comorbidity Survey. *Archives of General Psychiatry*. 1995; 52:1048–1060. [PubMed: 7492257]
- Kilpatrick, DG.; Resnick, HS.; Freedy, JR.; Pelcovitz, D.; Resick, PA.; Roth, S., et al. The posttraumatic stress disorder field trial: Evaluation of the PTSD Construct: Criteria A Through E. DSM-IV sourcebook. Widiger, T.; Frances, A.; Pincus, H.; Ross, R.; First, M.; Davis, W.; Kline, M., editors. Washington, DC: American Psychiatric Press; 1998. p. 803-844.
- Koss M, Dinero T, Seibel C, Cox S. Stranger and acquaintance rape: Are there differences in the victim's experience? *Psychology of Women Quarterly*. 1988; 12:1–24.
- Lawyer S, Ruggiero K, Resnick H, Kilpatrick D, Saunders B. Mental health correlates of the victim-perpetrator relationship among interpersonally victimized adolescents. *Journal of Interpersonal Violence*. 2006; 21:1333–1353. [PubMed: 16940399]
- Logan T, Cole J, Capillo A. Differential characteristics of intimate partner, acquaintance, and stranger rape survivors interviewed by a Sexual Assault Nurse Examiner (SANE). *Journal of Interpersonal Violence*. 2007; 22:1066–1076. [PubMed: 17709810]
- Masho S, Ahmed G. Age at sexual assault and posttraumatic stress disorder among women: Prevalence, correlates, and implications for prevention. *Journal of Women's Health*. 2007; 16:262–271.
- McClelland GH, Judd CM. Statistical difficulties of detecting interactions and moderator effects. *Psychological Bulletin*. 1993; 114:376–390. [PubMed: 8416037]
- Muthén, LK.; Muthén, BO. *Mplus user's guide*. 4th. Los Angeles: Author; 2007.
- Miller J. A specification of the types of intimate partner violence experienced by women in the general population. *Violence Against Women*. 2006; 12:1105–1131. [PubMed: 17090689]
- Miller M, Resick P. Internalizing and externalizing subtypes in female sexual assault survivors: Implications for the understanding of complex PTSD. *Behavior Therapy*. 2007; 38:58–71. [PubMed: 17292695]
- Nurius P, Norris J, Young D, Graham T, Gaylord J. Interpreting and defensively responding to threat: Examining appraisals and coping with acquaintance sexual aggression. *Violence and Victims*. 2000; 15:187–208. [PubMed: 11108501]
- Ozer E, Best S, Lipsey T, Weiss D. Predictors of posttraumatic stress disorder and symptoms in adults: A meta-analysis. *Psychological Bulletin*. 2003; 129:52–73. [PubMed: 12555794]
- Resick PA. Post-traumatic stress disorder in a Vietnam nurse: Behavioral analysis of a case study. Special Issue: A woman's recovery from the trauma of war. *Women and Therapy*. 1986; 5:55–65.
- Resick P, Galovski T, Uhlmansiek M, Scher C, Clum G, Young-Xu Y. A randomized clinical trial to dismantle components of cognitive processing therapy for posttraumatic stress disorder in female victims of interpersonal violence. *Journal of Consulting and Clinical Psychology*. 2008; 76:243–258. [PubMed: 18377121]
- Resick PA, Jordan CG, Girelli SA, Hutter CK. A comparative outcome study of behavioral group therapy for sexual assault victims. *Behavior Therapy*. 1988; 19:385–401.
- Resick P, Nishith P, Weaver T, Astin M, Feuer C. A comparison of cognitive-processing therapy with prolonged exposure and a waiting condition for the treatment of chronic posttraumatic stress disorder in female rape victims. *Journal of Consulting and Clinical Psychology*. 2002; 70:867–879. [PubMed: 12182270]
- Resick PA, Schnicke MK. Cognitive processing therapy for sexual assault victims. *Journal of Consulting and Clinical Psychology*. 1992; 60:748–756. [PubMed: 1401390]

- Rizvi SL, Kaysen D, Gutner CA, Griffin MG, Resick PA. Beyond fear: The role of peritraumatic responses in posttraumatic stress and depressive symptoms among female crime victims. *Journal of Interpersonal Violence*. 2008; 23:853–868. [PubMed: 18292400]
- Roemer L, Orsillo S, Borkovec T, Litz B. Emotional response at the time of a potentially traumatizing event and PTSD symptomatology: A preliminary retrospective analysis of the DSM-IV criterion A-2. *Journal of Behavior Therapy and Experimental Psychiatry*. 1998; 29:123–130. [PubMed: 9762589]
- Shields, NM.; Resick, PA.; Hanneke, CR. Victims of marital rape. In: Ammerman, RT.; Hersen, M., editors. *Treatment of family violence*. New York: Wiley; 1990. p. 165-182.
- Smith P, Thornton G, DeVellis R, Earp J, Coker A. A population-based study of the prevalence and distinctiveness of battering, physical assault, and sexual assault in intimate relationships. *Violence Against Women*. 2002; 8:1208–1232.
- Thornhill NW, Thornhill R. An evolutionary analysis of psychological pain following rape: I. The effects of victim's age and marital status. *Ethology and Sociobiology*. 1990a; 11:155–176.
- Thornhill NW, Thornhill R. An evolutionary analysis of psychological pain following rape: II. The effects of stranger, friend, and family-member offenders. *Ethology and Sociobiology*. 1990b; 11:177–193.
- Thornhill NW, Thornhill R. An evolutionary analysis of psychological pain following rape: III. Effects of force and violence. *Aggressive Behavior*. 1990c; 16:297–320.
- Thornhill NW, Thornhill R. An evolutionary analysis of psychological pain following human rape: IV. The effect of the nature of the sexual assault. *Journal of Comparative Psychology*. 1991; 105:243–252. [PubMed: 1935004]
- Turchik J, Probst D, Chau M, Nigoff A, Gidycz C. Factors predicting the type of tactics used to resist sexual assault: A prospective study of college women. *Journal of Consulting and Clinical Psychology*. 2007; 75:605–614. [PubMed: 17663614]
- Ullman S, Filipas H. Predictors of PTSD symptom severity and social reactions in sexual assault victims. *Journal of Traumatic Stress*. 2001; 14:369–389. [PubMed: 11469163]
- Ullman S, Siegel J. Victim-offender relationship and sexual assault. *Violence and Victims*. 1993; 8:121–134. [PubMed: 8193054]
- Ullman S, Filipas H, Townsend S, Starzynski L. The role of victim-offender relationship in women's sexual assault experiences. *Journal of Interpersonal Violence*. 2006; 21:798–819. [PubMed: 16672742]
- Vaughan AE. The association between offender socioeconomic status and victim-offender relationship in rape offenses. *Psychology, Evolution & Gender*. 2001; 3:121–136.
- Weathers, FW.; Blake, DD.; Krinsley, KE.; Haddad, W.; Huska, JA.; Keane, TM. The Clinician-Administered PTSD Scale (CAPS): Reliability and construct validity. Paper presented at the meeting of the Association for the Advancement of Behavior Therapy; Boston, MA. November. 1992a
- Weathers, FW.; Blake, DD.; Krinsley, K.; Haddad, W.; Huska, J.; Keane, TM. The Clinician-Administered PTSD Scale – Diagnostic Version (CAPS-1): Description, use, and psychometric properties. Paper presented at the meeting of the International Society of Traumatic Stress Studies; Los Angeles, CA. October. 1992b
- Weathers, FW.; Blake, DD.; Litz, BT. Reliability and validity of a new structured interview for PTSD. Paper presented at the meeting of the American Psychological Association; San Francisco, CA. August. 1991
- Weathers FW, Keane TM, Davidson JR. Clinician-administered PTSD scale: A review of the first ten years of research. *Depression and Anxiety*. 2001; 13:132–156. [PubMed: 11387733]
- Westwell CA. Cognitive processing therapy in the treatment of marital rape. *Psychotherapy in Private Practice*. 1998; 17:63–77.

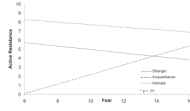


Figure 1.
Peritraumatic fear \times victim-offender relationship interaction predicting resistance.

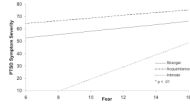


Figure 2. Peritraumatic fear \times victim-offender relationship interaction predicting PTSD symptom severity.

Table 1
Goodness-of-fit indices for the fear and resistance scales constructed using confirmatory factor analyses

Variable	χ^2	df	CFI	TLI	RMSEA	SRMR
Fear	7.65	5	.98	.97	.066	.031
Resistance (6 items)	25.45	9	.91	.85	.122	.052
Resistance ^a (4 items)	3.37	2	.99	.96	.075	.025

Note: $N = 123$; CFI = Comparative Fit Index; TLI = Tucker Lewis Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual;

^aVariable used in subsequent analyses.

Table 2
Mean and individual factor loadings for the STI peritraumatic fear and active resistance scales

Variable	Factor Loading
Fear	
Afraid	.83
Worried	.68
Helpless	.53
Anxious	.57
Terrified	.69
<i>Mean</i>	.66
Resistance	
Struggle free	.81
Kicked/hit/punched	.73
Screamed	.63
Cursed/threatened	.46
<i>Mean</i>	.65

Note: $N = 123$.

Table 3
Inter-item correlations for the STI peritraumatic fear and active resistance scales

Variable	1	2	3	4	5
Fear					
1. Felt afraid	–	.58**	.55**	.45**	.42**
2. Felt terrified		–	.41**	.35**	.38**
3. Felt worried			–	.32**	.48**
4. Felt helpless				–	.27**
5. Felt anxious					–
Resistance					
1. Struggled free	–	.61**	.50**	.42*	
2. Kicked/hit/punched		–	.50**	.28**	
3. Screamed			–	.32**	
4. Cursed/threatened				–	

Note: *N*s range from 117 to 123 and 122 to 123 for the Fear and Resistance factors, respectively;

* $p < .05$;

** $p < .01$.

Table 4
Means (and SD) and Percentages of key variables of interest, assault characteristics, as a function of victim-offender relationship, and one-way ANOVAs, chi-square analyses, and post-hoc analyses

Variable	Stranger ^d	Acquaintance ^b	Intimate ^c	F or χ^2	Group comparisons [*]
Variables of interest					
Fear	17.42 (3.57)	16.14 (4.23)	16.13 (4.69)	1.55	--
Resistance	3.50 (3.65)	5.61 (5.06)	6.87 (2.45)	6.15 ^{***}	S < A, I
PTSD symptom severity	69.24 (22.63)	74.92 (20.00)	55.08 (29.56)	3.72 [*]	A > I
Assault characteristics					
Weapon displayed	73%	21%	40%	27.04 ^{***}	S > A, I
Vaginal Penetration	91%	95%	100%	1.97	--
Anal Penetration	22%	5%	24%	5.22	S, I > A
History of Abuse					
Child Physical Abuse	63%	68%	67%	0.40	--
Child Sexual Abuse	58%	51%	67%	1.24	--
Past Rape or Sodomy	58%	59%	67%	0.53	--
Past Partner Physical Abuse	47%	65%	78%	7.44 [*]	S < I

Notes. Mean (standard deviation).

^{*} $p < .05$.

^{**} $p < .01$.

^{***} $p < .001$

^aN for Stranger VOR ranges from 66 to 75.

^bN for Acquaintance VOR ranges from 38 to 41.

^cN for Intimate VOR ranges from 13 to 18.