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Emotional Attachments in Abusive Relationships: A Test of Traumatic Bonding Theory

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An empirical test of traumatic bonding theory, the notion that strong emotional attachments are formed by intermittent abuse, is reported. In-depth assessments (interviews plus questionnaires) were conducted on 75 women who had recently left abusive relationships (50 where physical violence had occurred). The study found support for the effect of relationship dynamic factors such as extremity of intermittent maltreatment and power differentials on long-term felt attachment for a former partner, experienced trauma symptoms, and self-esteem, immediately after separation from an abusive partner and again after a six month interim. All three of these measures were significantly intercorrelated within each time period. Each measure at Time 1 correlated significantly with each corresponding measure at Time 2. After six months attachment had decreased by about 27%. Relationship variables (total abuse, intermittency of abuse and power differentials) accounted for 55% of the variance in the attachment measure at Time 2 indicating prolonged effects of abuse suffered in the relationship.

Dutton and Painter (1981) have elaborated a theory of "traumatic bonding," whereby powerful emotional attachments are seen to develop from two specific features of abusive relationships: power imbalances and intermittent good-bad treatment. This notion that attachment is strengthened by intermittent abuse appears, at first glance, to be somewhat at odds with classic attachment theory, which proposes that attachment increases with consistent positive treatment. Bowlby (1969, 1973, 1977, 1980) argued that the human need for secure attachment was the result of a long term evolutionary development which rivaled feeding and mating in importance. Bowlby defined infant attachment as a bond developed with "some other differentiated and preferred individual who is conceived as stronger and/or wiser" (1977, p. 203). Proportional to this sense of the other having absolute and unrestricted power over the infant, however, was the corollary that in times of threat,

disruption or separation to that secure attachment would produce emotional responses that are extremely strong, and which serve to generate proximity to the caregiver. Hence, even in Bowlby's original work on attachment, the notion existed that strong emotions produced by intermittent behavior of the caregiver could enhance attachment. This notion is not limited to infant attachment; an intriguing series of studies have likened attachment in infant relationships to adult romantic attachment (Hazan & Shaver, 1987; Shaver, Hazan, & Bradshaw, 1988; Shaver & Hazan, 1988; Collins & Read, 1990). Hazan and Shaver (1987), for example, developed a self-report measure to differentiate adult analogues of infant attachment patterns designated as secure, anxious-avoidant, and ambivalent. These adult patterns are viewed as enduring characteristics, like personality traits. This research focus, however, has not yet examined the role of adult relationship dynamics in enhancing attachment.

To demonstrate that "paradoxical attachment" was a general learning phenomenon, Dutton and Painter (1981) cited animal experiments and human case studies which demonstrated that attachment could be strengthened when such alternating good-bad treatment was applied. For example, people taken hostage have been found subsequently to show positive regard for their captors (Bettleheim, 1943; Strentz, 1979), abused children have been found to have strong attachments to their abusing parents (e.g., Kempe & Kempe, 1978), and former cult members are frequently loyal to malevolent cult leaders (Conway & Seigelman, 1978).

ATTACHMENT IN ABUSIVE RELATIONSHIPS

Dutton and Painter (1981) point out how the pathway into an abusive relationship constitutes a form of social trap. The first abusive incident appears to be an anomaly, occurring at a time of relationship novelty and optimism. This, coupled with its relative lack of severity and post-incident contrition by the man, operates to strengthen the affective attachment at a time when the belief has not yet formed that the abuse will be repetitive and inescapable. Repeated incidents of greater severity tend to shift the woman's cognitions to the belief that the violence will recur unless she does something to prevent it. Dutton and Painter (1981) discuss, at some length, the reasons for this initial introjection of blame for the abuse. By the time the woman realizes that the abuse is inescapable, the traumatically produced emotional bond is quite strong.

There are two common structural features in the apparently diverse relationships where traumatic bonding has been described. The first feature is the existence of a power imbalance, wherein the maltreated person perceives him or herself to be subjugated to, or dominated by, the other. The second is the intermittent nature of the abuse. Dutton and Painter (1981) argue that intermittency and power imbalances are quintessential features of abusive relationships.

Power Imbalance

Attachment to a person or group larger or stronger than the self can increase feelings of personal power (Becker, 1973; Fromm, 1941; Lion, 1977; McClelland, 1975) but can also create a microcosm in which the subordinate individual feels powerless. Social psychologists have found that unequal power relationships can become increasingly unbalanced over time, to the point where the power dynamic itself produces pathology in individuals. For example,

Zimbardo, Haney, and Banks (1972) reported anxiety and depression after only four days in volunteer subjects playing the role of "prisoners" who were relegated to powerlessness in a simulated prison situation. Lewin, Lippitt, and White (1947) reported increased redirected aggression in powerless members of autocratic groups, and Bettleheim (1943) reported Jewish prisoners' compulsive copying of the behavior and expressed attitudes of their Nazi prison guards, which he described as "identification with the aggressor" (cf. Freud, 1942). Recast from its psychoanalytic mode, this concept predicts that in situations of extreme power imbalance, where a person of high power (dominator) is intermittently punitive, subjugated persons might adopt the dominator's assumed perspective of themselves, and internalize or redirect aggression toward others similar to themselves.

As the power imbalance magnifies, the subjugated person feels more negative in their self-appraisal, more incapable of fending for themselves, and is, thus, increasingly more in need of the dominator. This cycle of relationship-produced dependency and lowered self-esteem is repeated, eventually creating a strong affective bond from the low to high power person. Concommitantly, the person in the high power position develops an inflated sense of their own power (just as the low power person develops an exaggerated sense of their own powerlessness) which masks the extent to which they are dependent on the low power person to maintain their feeling of, as Fromm (1973) put it, "the transformation of impotence into omnipotence" (p. 322).

This omnipotence, however, is predicated on the dominator's ability to maintain absolute control in the dyadic relationship. When the symbiotic roles which maintain this sense of power are disturbed, the masked dependency of the dominator on the subjugated person is suddenly revealed. One example of this sudden reversal of the power dynamic is the desperate control attempts on the part of the abandoned battering husband to bring his wife back (through surveillance, intimidation, etc.). It is important to note that in romantic relationships, as well as in cults, power imbalances magnify so that each person's sense of power or powerlessness feeds on itself. In the process, both persons (or groups) become welded together to maintain the psychological subsystem which fulfills the needs created, in part, by the power dynamic itself. In battering relationships, physical abuse can serve to maintain a power differential and, when coupled with emotional abuse, including threats against the woman and her children and a generalized feeling of powerlessness felt by the victim, can serve to maintain the relationship homeostasis.

Intermittency of Abuse

The second feature of traumatic bonding situations is the fact that abuse occurs intermittently. That is, the dominator intermittently and periodically maltreats the dominated by threats, verbal, and/or physical abuse. The offset of abuse is likely to be characterized by the onset of positive behaviors, described by Walker (1979) as the "contrition phase" of the abuse cycle, and comprised of promises to change, promises to not be abusive again, proclamations of love, etc... Thus, the victim is subject to alternating periods of aversive/negative arousal and the relief/release associated with the removal of aversive arousal. The situation of alternating aversive and pleasant conditions is an experimental paradigm within learning theory known as intermittent reinforcement/punishment, which is highly effective in producing persistent patterns of behavior that are difficult to extinguish or terminate, and which develops the strongest experimentally produced emotional bonds (see, for example, Amsel, 1958; Scott, 1963;

Seay, Alexander & Harlow, 1964; Harlow & Harlow, 1971; Rajecki, Lamb, & Obmascher, 1978)

Rajecki, Lamb, and Obmascher (1978) reviewed emotional bonding in infants, and assessed the major theories of infantile attachment, including those on both human and animal attachments (e.g., Bowlby, 1969; Lorenz, 1937). One criterion for the comparative evaluation of these theories was their relative ability to explain "maltreatment effects." In reviewing the literature on maltreatment effects, Rajecki et al. found conclusive evidence for enhanced infant animal attachment under conditions of intermittent maltreatment in birds, dogs, and monkeys. Attempts to inhibit infants' bonding to abusive attachment objects were found inevitably to fail unless: (1) they were persistent and consistently punitive, and (2) an alternative attachment object existed. Harlow and Harlow (1971) reviewed their research with infant monkeys, in which "evil surrogate mothers" were used as potential attachment objects. These surrogates exuded noxious air blasts, extruded brass spikes, hurled the infant to the floor, or vibrated so violently as to make the infant's teeth chatter. None of the above disrupted the bonding behavior of the infant monkeys. The authors concluded that "instead of producing experimental neurosis, we have achieved a technique for enhancing maternal attachment." Similarly, Seay, Alexander, and Harlow (1964) noted that, "a surprising phenomenon was the universally persisting attempts by the infants to attach to the mother's body regardless of neglect or physical punishment" (p. 353).

When the physical punishment is administered at intermittent intervals, and when it is interspersed with permissive and friendly contact, the phenomenon of traumatic bonding seems most powerful. Fischer (1955) attempted to inhibit the social responses of young dogs, and found that an indulged-punished group showed 231% of the human orientation of a consistently indulged group. As Rajecki and his colleagues concluded, "the data show that inconsistent treatment (i.e., maltreatment by, and affection from, the same source) yield an accentuation of attempts to gain proximity to the attachment object" (Rajecki, et al., 1978, p. 425).

To what extent are findings based on animal studies applicable to humans? Prima facie evidence suggests a process similar to the intermittent reinforcement used in animal studies may be the mechanism that maintains the strong bond formed by battered women for their abusers. Rounsaville (1978) speculated that "one feature that may weigh in favor of staying is the intermittent nature of the abuse... many (battered women) described highly pleasant periods of reconciliation between episodes... This pattern was conducive to ignoring the problem or thinking of it as an aberrant, exceptional part of the relationship" (p.17). Walker (1979) described a cyclical pattern of domestic violence that approximates the intermittent punishment-indulgence pattern used in animal research. Tension gradually builds (during phase one), an explosive battering incident occurs (during phase two), and a calm, loving respite follows (phase three). The battered woman's psychological reactions in each of the three phases, and the repetition of these phase-related responses, serves to "bind a battered woman to her batterer just as strongly as 'miracle' glues bind inanimate substances" (p. xvi). The emotional aftermath of a battering incident for the batterer, usually guilt and contrition, leads him to attempt to make amends via exceptionally loving treatment toward his partner. Thus, he becomes temporarily the fulfillment of her hoped-for fantasy husband and at the same time, his improved behavior serves to reduce the aversive arousal he himself has created, while also providing reinforcement for his partner to stay in the relationship.

TRAUMATIC BONDING AND LEAVING AN ABUSIVE RELATIONSHIP

The process of detaching from, or emotionally leaving, an abusive relationship should be more difficult, since traumatic bonding is theoretically increased by relationship dynamics. Hence, intermittent abuse develops an emotional bond which interferes with leaving and remaining out of an abusive relationship. Dutton and Painter (1981) likens this attachment process to an elastic band which stretches away from the abuser with time and subsequently "snaps" the woman back. As the immediate trauma subsides, the strength of the traumatically-formed bond reveals itself through an incremental focus on the desirable aspects of the relationship, and a subsequent sudden and dramatic shift in the woman's "belief gestalt" about the relationship. This shift in phenomenology alters her memory for past abuse, and her perceived likelihood of future abuse. The point of this original formulation by Dutton and Painter (1981) is that this belief shift is attachment-derived. That is, it follows from a shift from avoidance to return at an affective-attachment level. The foreshortened future and other aspects of the woman's attachment-derived thinking are similar to the descriptions of "deconstructed thinking" described by Baumeister (1990) in his description of pre-self-destructive thinking.

Several studies have been performed to identify factors that differentiate women who leave or stay in abusive relationships or, having left, remain out (Gelles, 1976; Pagelow, 1981; Rounsaville, 1978; Peretti & Buchanan, 1978; Kalmuss & Straus, 1982; Snyder & Scheer, 1981; Smith & Chalmers, 1984; Aquirre, 1984; Strube & Barbour, 1983, 1984; Okun, 1986; Strube, 1988; Erickson & Drenovsky, 1990). These studies tend to conclude that economic, rather than psychological, variables were better predictors. Economic factors include an entire constellation of factors contributing to the woman's economic dependence on her husband. These range from macrosystem features such as male-female wage differentials to the woman's own job skills, employability, and/or number of dependents. Economic explanations view these forces as objective economic factors that are directly measurable. Psychological measures in prior studies have tended to focus on the woman's subjective perception of her life alternatives inside and outside the relationship.

Strube (1988) reviewed these studies and concluded that a variety of factors, many economic, influence that decision. Strube proposes four models to understand the decision process, including "psychological entrapment" (similar to "investment," as described by Dufton and Painter, 1981). Landenberger (1989) also describes entrapment processes and used semi-structured interviews to investigate what she calls a four stage process of entrapment: binding, enduring, disengaging, and recovering. While entrapment may explain the process of engagement in an incrementally abusive relationship, it does not explain the subsequent strength of attachment. Investment, however, as defined by length of the relationship or number of prior leavings and returnings, is a variable that may impact on post separation affect.

Some conclusions can be drawn from the few replicated results that arise from these studies. First, most studies indicate that economic independence contributes to the likelihood of women leaving abusive relationships. Second, the longer the duration of the relationship at the time of the woman being interviewed, the greater the likelihood of the woman returning to the abuser. Whether this indicates commitment, investment, or something else is not clear. Third, neither abuse in childhood nor severity of violence in the current relationship are reliable predictors of relationship breakup.

Nevertheless, these studies are not good tests of traumatic bonding theory for two reasons. First, they have not comprehensively assessed dynamic features of the

relationship such as power differentials, power changes with abuse, or intermittency of abuse, all of which are central to the establishment of traumatic bonding. Second, they have assumed that attachment was directly related to whether the women stayed in, or left, the relationship. We would argue that the woman could remain out of the relationship and still feel attachment or, conversely, return for economic reasons, and feel emotionally unattached. In this study, we assess a constellation of separation-related psychological factors. We focus on felt attachment to the partner, on self-esteem, and on experienced trauma symptoms. Our hypothesis is that all three will be affected by relationship dynamics that generate traumatic bonding. To assess these dynamics we include measures of intermittency of abuse and power differentials in the abusive relationship.

METHOD

Recruitment of women to participate in this study was done over a six month period. To qualify for the research sample, a woman had to have left the relationship within the past six months. Women with a history of two or more incidents of severe physical abuse (on the Conflict Tactics Scale [Straus, 1979]) were recruited through two sources: transition houses and shelters in the Greater Vancouver region of British Columbia (n = 38), and women whose husbands or partners had been clients in the Assaultive Husbands Program, a treatment program for abusive men (n = 12).

A control sample of emotionally-abused-only women was sought through newspaper advertisements. Some of these women, however, had also been battered. The criterion for inclusion in the emotionally abused group was less than two incidents of physical violence, and no incidents of severe physical violence (on the Conflict Tactics Scale) during the relationship. Since our analyses were to be correlational, we were not concerned that some violence had occurred in this group. Practically, it is difficult to find control groups of women who have just left relationships where no violence occurred.

Women completed a test battery to be described below. In addition, structured interviews were conducted at Time 1. All subjects were paid for participation. All interviews were audiotaped with the subject's permission.

A total of 75 women participated in the study (50 battered and 25 emotionally abused). Their average age was 31.4, average time in the relationship was 11.5 years (range six months to 44 years), average time separated was 20.5 weeks. On average, these women had initiated 2.1 prior separations. In this sample, 22 women were childless and half had experienced some form of abuse in a previous relationship. The women in the total sample reported very high degrees of verbal aggression directed toward them in their prior relationship. For example, the mean report of verbal aggression was 55.2 on the CTS, which places this sample beyond the 99th percentiles for population norms published by Straus, Gelles, and Steinmetz (1980). Women in the battered group also reported total physical aggression scores by their male partner of 44.1, (S.D. = 16.0) and a severe physical aggression score of 13.4 (S.D. = 18.2), again beyond the 99th percentile for population norms. Women in the emotionally abused group reported total physical aggression scores of 1.2 (S.D. = 2.0) and severe physical aggression scores of 0.

DEPENDENT MEASURES

Dependent measures were collected at Time 1 and again at Time 2, six months later.

Attachment

To assess attachment in this study we used a scale of attachment developed by Kitson (1982), supplemented with some items from a scale by NiCarthy (1982). The Kitson scale, which was used to assess attachment during divorce, measures the bereavement aspect of separation and contains items such as "I frequently find myself wondering what he is doing" and "I spend a lot of time still thinking about him." Kitson (1982) reports the psychometric qualities of the scale, including an alpha of .80. To supplement the assessment of attachment, 10 items from an idealization measure developed by NiCarthy (1982) were included. These include items such as "No one could ever understand him the way I do," "Without him I have nothing to live for," and "I love him so much, I can't think of being with anyone else." The NiCarthy scale added an element of continuing obsession with the partner that was not included in the Kitson scale. Since the composite scale was new, we performed an item-whole correlation for each item, and retained items that had correlations over .55 ("I feel I will never get over the breakup"). Chronbach's alpha for the entire 20 item scale was .92.

Self-Esteem

Since self-esteem is frequently mentioned in the literature on effects of battering, we included it here. We used the Rosenberg (1965) Self-Esteem Scale. This 1 0-item self-report scale has reported alphas of .77 and .88 (Robinson, Shaver, & Wrightsman, 1991). Responses range from "strongly disagree" to "strongly agree" on a four-point scale; the higher the score, the greater the self-esteem.

Trauma Symptoms

The Trauma Symptom Checklist (Briere & Runtz, 1989) is a brief (33-item) reliable instrument showing predictive and construct validity. It has been shown to discriminate female victims of childhood sexual abuse from non-victimized women. The TSC-33 contains five subscales: dissociation, anxiety, depression, post-sexual abuse trauma-hypothesized, and sleep disturbance. The PSAT-hypothesized includes those symptoms thought to be most characteristic of sexual abuse experiences, but which may also occur as a result of other types of trauma. Analysis of the internal consistency of the five subscales indicated reasonable reliability with an average subscale alpha of .71, and a total alpha for the TSC-33 of .89 (Briere & Runtz, 1989).

INDEPENDENT MEASURES (Independent measures were collected at Time 1)

The Conflict Tactics Scale

The Conflict Tactics Scale (CTS; Straus, 1979) is divided into three subscales: reasoning (3 items), indicating a problem solving orientation; verbal aggression (7 items), indicating verbal and nonverbal means of threatening or hurting the other, and

violence (9 items), including the use of physical force as a means of conflict resolution. Items range in severity from "pushing" to "using a weapon on the other." Respondents are asked to rate the type and number of conflict tactics used by both the self and the other person specified in the dyad during the last year of their relationship.

Psychological Maltreatment of Women Inventory

Although the CTS is useful for studying intrafamily violence, it does not include a broad range of non-physical aggression. In order to obtain this, Tolman's (1989) Psychological Maltreatment of Women Inventory (PMWI) was included, again assessing the last year of the woman's relationship. The PMWI is comprised of 58 items (rated from 1 "never" to 5 "very frequently"), which comprise forms of emotional/verbal abuse and dominance/isolation. Dominance/isolation includes items related to rigid observance of traditional sex roles, demands for subservience, and isolation from resources. In contrast, emotional/verbal abuse includes withholding emotional resources, verbal attacks, and behavior that degrades women. Factor analyses support the inclusion of the two factors. In the present sample, Cronbach's alphas for the dominance/isolation subscale was .82, and for the emotional/verbal subscale .93.

Intermittency of Abuse

Our measure of intermittency was designed to assess the juxtaposition of extremely positive and negative behaviors. Respondents were asked to describe the first, last, and worst incident of abuse in detail (for non-battered women these were incidents of conflict and emotional abuse). For each incident, a variety of behaviors was listed which included verbal and physical abuse items and threats. Post-abuse behavior was also assessed, including negative behaviors (threats, etc.) and positive "contrition" behaviors (see Walker, 1979). An objective measure of intermittency was created by adding negative behaviors during abuse to positive behaviors after abuse, summed across the three incidents. Subjective measures of intermittency were created by having the respondent, after she had read the objective scale items, rate on a scale of -5 "very negative" to +5 "very positive", her partners behavior before, during, and after each incident of abuse. The subjective intermittency scale was the sum of the three positive scores minus the three negative scores. Hence, the scale had a theoretical range of 30.

Power

Three measures of the respondent's rating of her own and her partner's power were taken. First, the Decision Power Index (Blood & Wolfe, 1960), which assesses who has the final say on six issues (buying a car, having children, what apartment to take, what job either partner should take, whether a partner should work or not, and how much money to spend each week on food), was used. Secondly, because all so-called objective power measures have conceptual problems (see Huston, 1983), a subjective measure of power was used called Power Differential, which simply asked the respondent to indicate on a 10 point scale how much power both she and her partner had: 1) before the violence/abuse started, 2) after the violence/abuse started but before she left, and 3) now that she had left. The definition of power on this question was deliberately left unspecified. Finally, a variable called power shift was calculated which assessed the

change in power differentials before and after battering on a 10 point scale in order to determine the loss of the woman's dyadic power after battering.

Investment

The investment in the relationship variables was comprised of length of time together and number of prior separations.

Woman's History

Assessments were made of violence in each respondent's family of origin using the Conflict Tactics Scale. Also, presence of prior abusive relationships was assessed.

Finances

Financial assessment included family income before separation, the woman's current (post-separation) income, percentage of child support paid by the male partner, likelihood of these payments being interrupted, and financial outlook.

Socially Desirable Responding

The Marlowe-Crowne Social Desirability Scale (MC; Crowne & Marlowe, 1960) is a self-report that contains items about everyday events that are desirable but rare. Participants are required to check whether each item is true or false.

RESULTS

On the Tolman Psychological Maltreatment of Women Inventory (PMWI), the scores for the Battered group were: domination\isolation = 79.1 (25.9) and emotional abuse = 95.5 (15.9), indicating that frequent emotional abuse accompanied physical abuse for these women. The Emotionally Abused (EA) group reported as follows: domination/isolation 43.1 (27.5) and emotional abuse = 69.4 (20.1), indicating that considerable emotional abuse occurred for this group as well (although significantly less than for the Battered group). Social desirability measures (the Marlowe-Crowne Scale) did not correlate significantly with reports of partners' physical or emotional abuse, leading to the conclusion that these reports were uncontaminated by impression management concerns.

Three major sets of dependent measures were taken at Time 1: the Trauma Symptom Checklist (TSC-33), the Attachment Scale, and the Self-Esteem Scale. Average scores at T1 for the entire sample of 75 on the TSC-33 (theoretical range 0-99) were 44.9 (20.7) mean scores on the Attachment Scale (range 0-80) were 28.5 (18.0), average scores on the Rosenberg Self-Esteem Scale (range 10-40) were 27.3 (5.6).

A total of 66 (44/50 Battered and 22/25 EA) of the original 75 respondents were contacted at Time 2 and completed assessments. At Time 2, 51% had weekly contact and 14% had monthly contact with their partners. Seventeen percent of the Battered group and 8% of the EA group still had sexual contact with their former partner. Only 3 of the 66 respondents rated themselves as less content than they were 6 months previously. Of the battering partners, 35/44 had attempted reconciliation, and 10/44

battered women attempted reconciliation, however only 4 had returned to living with their partners. None of the EA group had returned. Only 13/44 Battered and 6/22 EA had absolutely no contact with their former partner. The most common reason for contact was children.

Overall self-esteem scores at Time 2 showed no significant improvement and Attachment scores at Time 2 were 73 % as strong as at Time 1. In other words, although attachment had begun to decrease, women at Time 2 still showed moderate attachment (21.2 out of a possible score of 80) when assessed using the attachment scale. Trauma symptoms had diminished with time as well, an average of 57% from their Time 1 level. The drop was equal across all subscales of the Trauma Symptom Checklist.

Intercorrelations of Dependent Measures

Table 1 shows intercorrelations of the dependent variables within a time period. Significant correlations were found between all pairs of the three dependent measure scales at Time 1. Women who had lower self-esteem at Time 1 tended to have significantly more trauma symptoms, and to still feel significantly more attached to their ex-mate.

The three main dependent measures again correlated significantly at Time 2, with trauma symptoms and self-esteem even more highly correlated. Again, women who had low self-esteem at Time 2 tended to have significantly more trauma symptoms and to feel significantly more attached to their former partners.

Table 2 shows the intercorrelations of Time 1 with Time 2 measures taken six months later. Despite the lengthy interval between Time 1 and Time 2, each dependent measure taken at Time 1 correlated significantly with its counterpart measure taken at Time 2. Note that although attachment shows the largest drop in score size from Time 1 to Time 2, the Time 2 scores are still highly correlated with the Time 1 scores. In this sense, Time 2 attachment is predictably about 73% of the Time 1 attachment score.

TABLE 1. Intercorrelations Within a Time Period

	attachment	self-esteem
Time 1		
trauma symptoms	+.39***	-.22*
attachment		-.27*
Time 2		
trauma symptoms	+.49***	-.62***
attachment		-.36**

*p<.05, **p<.01, ***p<.001

TABLE 2. Intercorrelations of Time 1 and Time 2 Measures

Time 2: / Time 1:	trauma symptoms	attachment	self-esteem
trauma symptoms	+.48***	+.27**	-.36**
attachment	+.34**	+.68***	-.17
self-esteem	-.16	-.07	+.27*

*p<.05, **p<.01, ***p<.001

Relationship of Predictor to Dependent Variables

The strongest associations between individual predictor and dependent variables in this study were subjective intermittency correlated with attachment at Time 1 (+.62) and Time 2 (+.60). Both were significant (p<.001). Power differential correlated +.27 with attachment at Time 1 (p < -.01) and +.31 at Time 2 (p < .01). Overall CTS scores for physical violence correlated -.58 with self-esteem at Time 1 (p < .001), but not at Time 2. Length of relationship correlated with trauma symptoms (-.25, p.05) and self-esteem (-.33, p.01) at Time 1, and with trauma symptoms (-.23, p <.05) at Time 2. Dominance/isolation from the PMWI correlated with trauma symptoms (+.20, p.05) and attachment (-.33, p <.05) at Time 1, and trauma symptoms (+.44, p <.01) and self-esteem (-.27, p <.05) at Time 2. Emotional abuse from the PMWI correlated with trauma symptoms at Time 1 (+.29, p < .05), but not at Time 2.

To better estimate the overall effect of relationship, financial, and family of origin variables on post-relationship measures, composite measures of all three were constructed and entered into a multiple regression on the various dependent measures of the study. Only variables composing the composite variable were entered into the stepwise regression. Hence, relationship variables included intermittency, power shift, total physical abuse, dominance, emotional abuse, and length of relationship. Table 3 shows the relationship of these composite variables to the post-relationship measures by indicating the amount of variance in each dependent variable accounted for by each composite variable. The percentages exceed 100% because the regressions were done independently, with variables from within the composite variable only. In this analysis, family of origin variables affect only trauma symptoms, accounting for 23% of the trauma symptom variance at Time 1 and 9% at Time 2. In this case, family of origin variables were: a) total physical abuse by father to mother (beta = -.64), and b) total physical abuse by father to daughter (beta = .87). Other family of origin variables, entered into a regression, had no additional effect on trauma symptom variance.

Relationship variables accounted for more of the post-relationship variables variance. At Time 1, 41% of attachment scores were accounted for by a composite variable comprised of powershift woman (B = -.36), which measured dyadic power changes after violence, dominance/isolation (B = -.33), and length of relationship (B = -.18).

Self-esteem scores at Time 1 were 29% accounted for by relationship variables: length (B = .33), power differential (B = .24), physical abuse by the partner (B = -.58), and intermittency of abuse (B = .60). Financial variables accounted for very little variance in dependent measures at Time 1.

Relationship variables did best at accounting for attachment at Time 2 (55% of variance). This was a composite variable comprised of dominance/isolation (B = .23), power differential (B = -.21), and intermittency (B = .31). Trauma symptoms at Time 2 had 47% of their variance accounted for by current relationship variables, suggesting

TABLE 3. Proportion of Dependent Measure Variance Accounted by Family of Origin, Current Relationship and Financial Clusters

	Time 1			Time 2		
	TrSymp.	Att.	SE	TrSymp.	Att.	SE
Family of Origin	23%	---	---	9%	—	—
Relationship	8%	41%	29%	47%	55%	19%
Financial	9%	17%	18%	90%	72%	60%

a delayed effect of relationship trauma on symptom onset. Both dominance/isolation (B = .47) and total physical abuse (B =.21) were instrumental in this regression.

Financial variables had little effect on post-relationship scores at Time 1 but a strong effect at Time 2. A composite financial variable measuring the wife's percentage of contribution to child support, likelihood of partner's financial support, employment, partner's contribution to family income and total family income accounted for 90% of the variance in trauma symptoms at Time 2. The strongest effects were for child support (B =-1.2) and partner's contribution (B = -.96). This composite financial variable also accounted for 72% of the variance in attachment scores at Time 2 and 60% for self-esteem scores.

Finally, a discriminant function analysis was run on the most-attached and least attached women in the Battered group at Time 2, using all available predictor variables. A five variable composite explained 76% of the variance in attachment and correctly classified 85.3% of the women according to strength of attachment. The main contributors to this composite variable (with beta weights) were dominance/isolation (B = .79), intermittency (B = .70), total physical abuse by partner (B = .55), emotional abuse (B = .47), and power shift (B = .41).

DISCUSSION

While the influence of relationship variables on attachment, self-esteem, and trauma following relationship dissolution is complex, some findings did clearly emerge in the present study. First of all, the three dependent variables showed strong associations with each other at both Time 1 and Time 2. In this sense, attachment, experienced trauma and lowered self-esteem constitute a syndrome of interrelated effects of abuse. Although scores diminish on all three measures, Time 2 scores on each measure are predictable from Time 1 scores. Attachment persisted for these women despite their remaining outside the prior relationship. Finally, variables which assessed relationship dynamics, particularly intermittency of abuse and changes in power due to battering (power shift), emerged as strong predictors of post-separation attachment.

Prior studies have not attempted to assess these dynamic features of relationships. For example, Follingstad, Brennan, Hause, Polek, and Rutledge (1991) had a group of battered women rate both past relationship violence and current physical and psychological symptoms. Results indicated that the number and severity of symptoms was predicted by frequency of abuse. In the present study, the overall CTS score (frequency of abuse) again related to both trauma symptoms and attachment, but was a relatively weak contributor compared to intermittency. Follingstad et al. did not assess intermittency or changes in the power dynamic. Similarly, Strube's (1988) conclusion that economic variables are stronger predictors of leaving/staying out of abusive relationships may have to be qualified. In our study, economic variables contributed strongly to all dependent measures at Time 2, yet the discriminant function analysis of attachment revealed relationship variables as the main predictors of attachment status at Time 2. These variables included measures of intermittency and power shift, variables which had not been assessed in previous studies. Also, attachment was not directly assessed in prior studies.

Intermittency, a central concept of traumatic bonding, contributed to the composite predictor variable and correlated individually with attachment at Time 1 (+ .62) and at Time 2 (+ .60). The strongest associations at Time 1 were between partner's violence (CTS) and negative self-esteem, and between intermittency and attachment. The

association of current relationship variables to dependent variables strengthened with time. Composite current relationship variables accounted for 47% of the variance of trauma symptom scores and 55% of attachment scores at Time 2. This finding suggests a delayed reaction to relationship abuse and domination that manifests in the months following separation, supporting Dutton and Painter's (1981) "elastic band" analogy described earlier. The predictive ability of relationship variables in determining attachment and experienced trauma for the current sample reinforces Dutton and Painter's original perspective.

When all available predictor variables were used in a discriminant analysis of most-attached and least-attached women at Time 2, the main contributors to the dependent variable variance were current relationship variables, including intermittency and power shift (power shift assesses the loss of the woman's dyadic power after battering). To the best of our knowledge, this is the first time that assessment of these relationship dynamic variables has been conducted; their strength in predicting attachment underscores their importance in understanding post-relationship functioning of battered women. The current data suggest that six months after our initial interview with the women in our sample and on average ten months after the termination of their abusive relationship, intermittency was contributing to the composite of relationship variables that still strongly influenced both felt attachment and experienced trauma.

The reality of financial pressure at Time 2 in influencing attachment affect for the partner and trauma symptoms cannot, however, be underestimated. Financial variables, taken alone, accounted for 90% of the variance of trauma symptoms at Time 2 and 72% of the attachment scores. To put this in perspective, however, 100% of our sample interviewed at Time 2 said they were not contemplating returning because of economic factors and only 33% said they had ever contemplated this.

Traumatic bonding theory (Dutton & Painter, 1981) postulates that when a woman finally leaves an abusive relationship, her immediate fears may begin to subside and her hidden attachment to her abuser will begin to manifest itself. At this particular point in time, the woman is emotionally drained and vulnerable, and it was at these times in the past that the husband was present, contrite, and (temporarily) loving and affectionate. As the fear subsides and the needs previously fulfilled by her husband increase, an equilibrium point is reached where the woman may suddenly and impulsively decide to return. The present study verifies that process: current relationship variables (i.e., intermittent abuse and dominance/isolation) impact on the woman's attachment system with a delayed effect. Their impact on attachment is stronger at Time 2 that it was at Time 1. Nevertheless, in the Battered group, only 9% had returned to live with the batterer at Time 2, although 51% had some form of contact (17% had sexual contact) with him in a non-living together arrangement. It was for this reason that the present study focused on attachment rather than on the decision to remain separate. Clearly, a variety of other forms of attachment survive the process of separation.

This notion of attachment being strengthened by intermittent good/bad treatment is counterintuitive and still "beyond the ken" of the average jury member (Ewing & Aubrey, 1987). Hence, part of the role of expert witnesses who testify in battered woman self-defense cases is to clarify the role of traumatic bonding in contributing (along with threats from the batterer, financial pressures, etc.) to the overall difficulty battered women have in leaving abusive relationships.

Traumatic bonding also has implications for therapists working with battered women. Explicitly explaining the phenomenon to the woman allows her to know what to expect throughout the process, and to avoid inferring from the detachment difficulties

any special relationship features with the batterer. The increase in "undertow" back to the batterer with time from separation will be accompanied by an increase in positive memories of him, and a tendency to diminish memories of the severity of the battering. Providing consistent reminders of the factual aspects of the violence can help offset memory changes associated with delayed increases in the traumatically formed bond.

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