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Deconstructing Self-Blame Following Sexual Assault: The Critical Roles of Cognitive Content and Process

Audrey K. Miller[1], Ian M. Handley[2], Keith D. Markman[3], and Janel H. Miller[4]

Abstract

As part of a larger study, predictors of self-blame were investigated in a sample of 149 undergraduate sexual assault survivors. Each participant completed questionnaires regarding their preassault, peritraumatic, and postassault experiences and participated in an individual interview. Results confirmed the central hypothesis that, although several established correlates independently relate to self-blame, only cognitive content and process variables—negative self-cognitions and counterfactual-preventability cognitions—uniquely predict self-blame in a multivariate model.

Keywords

counterfactual thinking, self-blame, sexual assault

> *Self-blame is the outcome of an intensely personal dispute.*

> Shaver & Drown, 1986, p. 701

Sexual assault against women is prevalent in community and college populations (Fisher, Cullen, & Turner, 2000; Koss, Gidycz, & Wisniewski, 1987; Tjaden & Thoennes, 2000),

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and undergraduate women may be at especially high risk of experiencing acquaintance sexual assault (Arata & Burkhart, 1998; Koss, 1988; Koss et al., 1987; Schwartz & Leggett, 1999). Self-blame is a well-documented sequel to sexual assault and has been shown to correlate with negative outcomes including distress and demoralization, general psychological symptoms, depression, anxiety, posttraumatic symptoms, avoidance coping, sexual dissatisfaction, and sexual revictimization (Arata, 1999, 2000; Arata & Burkhart, 1998; Classen, Palesh, & Aggarwal, 2005; Foa, Ehlers, Clark, Tolin, & Orsillo, 1999; Frazier, 1990, 1991, 2003; Frazier, Mortensen, & Steward, 2005; Frazier & Schauben, 1994; Hill & Zautra, 1989; Koss, Figueredo, & Prince, 2002; Littleton & Radecki Breitkopf, 2006; Meyer & Taylor, 1986; Miller, Markman, & Handley, 2007; Ullman, 1996; Ullman, Filipas, Townsend, & Starzynski, 2007). Overall, this research underscores the critical relevance of studying self-blame in the context of sexual assault recovery. Whereas the extant literature has focused on the predictive utility of self-blame following sexual assault, prediction of self-attributions, including self-blame in particular, remains a relative blind spot of the trauma and sexual victimization literatures (Frazier et al., 2005; Littleton, Magee, & Axsom, 2007). Thus, we investigate multiple preassault, peritraumatic, and postassault variables posited to contribute to self-blame following sexual assault and, moreover, submit these to multivariate model testing.

Self-Blame in Theory

Attribution theory long has recognized that ordinary persons engage in biased estimations of causality, responsibility, and blameworthiness (Gilbert, 1998). For example, "background factors, social context, roles, or situational pressures that may have given rise to behavior are . . . relatively pallid and dull and unlikely to be noticed in comparison to the dynamic behavior of the actor" (Fiske & Taylor, 1991, p. 67). Theoretical understanding of perceivers' neglect of context factors in attributing cause and blame for victimization events (Kahneman & Miller, 1986; McGill, 1989; McGill & Tenbrunsel, 2000) helps explain otherwise perplexing empirical findings, such as persons' well-documented tendencies to blame sexual assault survivors while discounting sociocultural milieu that arguably give rise to sexual assault (Koss, 1988; Pitts & Schwartz, 1997). As stated by Kahneman and Miller (1986):

> The idea that the actions of a focal individual are mutable may help explain the well-documented tendency for victims of violence to be assigned an unreasonable degree of responsibility for their fate (Lerner & Miller, 1978). Information about a harmful act often presents the actions of the perpetrator in a way that makes them part of the presupposed background of the story, and therefore relatively immutable. Alternatives to the victim's actions are likely to be more mutable, and counterfactual scenarios in which the harm is avoided are therefore likely to be the ones that change the victim's actions but keep the aggressor's behavior essentially constant. The high availability of such counterfactual scenarios can induce the

impression that the victim is responsible for her fate—at least in the sense that she could have easily altered it. (p. 144)

Indeed, experimental research has demonstrated that victims of violence ironically are blamed to a greater extent within contexts perceived as dangerous (i.e., violence facilitating) wherein victims are expected to accommodate the context in order to prevent others' interpersonal transgressions (McGill & Tenbrunsel, 2000; Miller, Markman, Amacker, & Menaker, 2010; Miller, Wang, Backstrom, & Canales, 2010).

Jones and Davis (1965) theorized that the dispositional qualities of persons (i.e., their stable characteristics) are inferred by considering the outcomes or effects of their behavior in contrast to the effects of alternative behaviors. Thus, individuals judge others and presumably themselves based upon behavioral information such as social desirability, degree of choice (versus constraint), and prior behavioral patterns. As such, a sexual assault survivor, for example, might blame herself to the extent she perceives her behavior as having been socially undesirable (e.g., *too* intoxicated, *too* trusting, *too* provocative). This example is consistent with just-world theory (Lerner, 1971), which predicts that persons are motivated to blame victims of misfortunes such as sexual assault in order to maintain belief in a just world (i.e., that bad things happen to bad people), as well as hindsight bias (Carli, 1999; Roese & Olson, 1996), which accounts for the misremembering of sexual assault details that leads to victim derogation.

Counterfactual theory is especially helpful in positing how people think and react following negative events, especially those that potentially may be repeated (e.g., sexual assault). According to counterfactual theory, following distressing events, people naturally reflect upon how their experiences might have turned out more favorably had specific event antecedents occurred differently (e.g., Kahneman & Miller, 1986; Markman, Gavanski, Sherman, & McMullen, 1993; Roese, 1997). This so-called upward counterfactual thinking is activated by negative emotion (Roese, 1997; Roese & Hur, 1997; Roese & Olson, 1997) and serves the function of highlighting past behavioral errors for the purpose of developing future action plans (Markman & McMullen, 2003; Roese, 1994, 1997; Roese & Olson, 1997). Yet, potentially dysfunctional byproducts of this cognitive process may include disproportionate levels of self-blame (Davis, Lehman, Silver, Wortman, & Ellard, 1996; Markman, Karadogan, Lindberg, & Zell, 2009; Sherman & McConnell, 1995).

In a review of the blame literature, Alicke (2000) emphasized that the same psychological biases known to be associated with counterfactual thinking (e.g., hindsight, negative emotion) also give rise to ascriptions of blame. Specifically, Alicke's culpable control model posits that blame is attributed based upon "affective reactions to features of harmful events and the people involved" (p. 564), which shade subsequent "reasoning" about the events. Alicke's model naturally extends to the phenomenon of self-blame following sexual assault. For example, Alicke noted that individuals may be blamed even for behaviors that have no rational causal bearing on an outcome (e.g., victim dress, isolation, and intoxication in the case of sexual assault). Thus, sexual assault survivors, who are uniquely privy to and impacted by their own perceived missed opportunities to have controlled

innumerable precipitants of their assaults, erroneously feel they are to blame for their victimizations.

Branscombe, Wohl, Owen, Allison, and N'gbala (2003) provided an important empirical contribution to our understanding of self-blame etiology by employing a counterfactual thought-generation task. These researchers found that sexual assault survivors' self-focused counterfactual thoughts—that is, retrospective imaginings of how they might have prevented their assaults—directly predicted self-blame and, in turn, inversely predicted psychological well-being (i.e., a combined measure of self-esteem, depression, and perceived life control). Further, underscoring the potentially irrational nature of self-blame, self-focused counterfactual thinking predicted survivors' self-blame even when the perpetrator was perceived to have been the primary cause of the sexual assault.

The Present Study

Branscombe et al.'s (2003) study was the first to investigate the cognitive underpinnings of self-blame among sexual assault survivors using a self-generated attribution method. Participants were asked, "What aspects of *your actions and/or the circumstances* do you imagine differently so that a different outcome occurs." Ninety percent of sexual assault survivors' generated counterfactual thoughts involved alterations of their own actions, but the authors acknowledged that their prompt (see emphasis in italics) likely elicited artificial overgeneration of *self-focused* counterfactual thoughts. We addressed this demand problem in the current study by investigating survivors' *unprompted* counterfactual-preventability cognitions, as evidenced in their spontaneous sexual assault narratives. In a meta-analysis of self-attributions following trauma, Littleton and colleagues (2007) found that open-ended prompts elicit significantly lower levels of self-attribution than close-ended prompts. Therefore, we regard the open-ended narrative methodology as a relatively conservative, unbiased measure of counterfactual-preventability cognitions.

Overall, the present investigation tested the proposed importance of cognitive content and cognitive process in predicting self-blame following sexual assault in an undergraduate sample of survivors. Cognitive content was assessed in terms of negative self-cognitions, based on the Posttraumatic Cognitions Inventory subscale that taps this construct (Foa et al., 1999). Given that survivors' general appraisals of self-worth (Littleton & Radecki Breitkopf, 2006) and self-esteem (Branscombe et al., 2003) typically inversely relate to self-blame, we hypothesized that negative self-cognitions would directly predict self-blame. Cognitive process was assessed in terms of counterfactual-preventability cognitions as evidenced in survivors' open-ended sexual assault narratives. In light of preliminary evidence that survivors' self-focused counterfactual thoughts are directly related to self-blame (Branscombe et al., 2003), we hypothesized that counterfactual-preventability cognitions would directly predict self-blame. In addition to addressing the potential demand characteristics inherent in a previously employed counterfactual-generation prompt (Branscombe et al., 2003), our study addressed several other design issues. To

improve detection of acquaintance sexual assault despite its socially "hidden" nature (i.e., lack of acknowledgment; Kahn & Andreoli Mathie, 2000; Koss, 1988, 1993; Pitts & Schwartz, 1997), we assessed sexual assault history using a modified version of the Sexual Experiences Survey (SES; Koss et al., 1987) rather than with a single-item measure of "forced" sexual assault (Branscombe et al., 2003). Also, rather than employing a single-item measure of self-blame (Branscombe et al., 2003), we used a criterion measure of post-traumatic self-blame that has been validated in samples of traumatized persons including sexual assault survivors (Foa et al., 1999).

Most importantly, we also tested the central hypothesis that the target cognitive variables would predict self-blame in a multivariate context. To do so, we assessed and statistically controlled for variables postulated or confirmed to independently correlate with self-blame following sexual assault. These include survivor preassault characteristics, namely sexual assault history (Arata, 1999; Classen et al., 2005; Jones & Davis, 1965) and alcohol use (Koss et al., 2002; Schwartz & Leggett, 1999; Tucker, Wenzel, Straus, Ryan, & Golinelli, 2005); sexual assault characteristics, namely degree of survivor acquaintance with the perpetrator (Frazier & Seales, 1997; Katz, 1991; Pitts & Schwartz, 1997; Schwartz & Leggett, 1999) and degree of peritraumatic distress (conceptualized here as subjective trauma severity; Arata, 2000; Arata & Burkhart, 1998; Littleton & Radecki Breitkopf, 2006); and, survivors' postassault experiences, including posttraumatic negative emotion (Frazier, 1990, 2003; Frazier et al., 2005; Koss et al., 2002), posttraumatic symptoms (Arata, 2000; Arata & Burkhart, 1998; Foa et al., 1999; Koss et al., 2002; Ullman et al., 2007), and negative-world cognitions (Foa et al., 1999).

Method

Participants

Participants were undergraduate women at a medium-size university, initially recruited by flyers for a study entitled, "Women's Social Experiences," posted on a psychology department bulletin board. Six hundred and one (601) women participated in the screening session, during which adolescent history of sexual assault was assessed. Undergraduate women are at high risk for sexual assault (Koss, 1993) and, consistent with this, 167 of 601 screened women (27.8%) met inclusion criteria (i.e., had experienced at least one adolescent sexual assault involving vaginal, anal, or oral penetration). Three women (1.8%) met exclusion criteria for current suicidal ideation, yielding 164 eligible participants. A total of 15 eligible participants declined study participation, could not be reached, or dropped out, leaving 149 of 164 (90.9%) participants as part of the current investigation. Attrition was not predicted by study variables. Most participants were 18 to 20 years old (94.6%), Caucasian (96.0%), never married (97.3%), dating casually or in long-term, monogamous relationships (93.9%), and had experienced the referent sexual assault within the prior 2 years (78.5%).

Procedure

The present investigation was part of a 4-part study during which undergraduate women participated in the "phase 1" screening questionnaire session ($n = 601$), a "phase 2" questionnaire session ($M = 1$ week postscreening; $n = 157$), a "phase 3" individual interview ($M = 8.3$ days postscreening; $n = 149$), and a "phase 4" questionnaire session ($M = 4.2$ months postscreening; $n = 144$). Self-blame, assessed at phase 2, was investigated as a prospective predictor of sexual revictimization, assessed at phase 4, in a previous report (Miller et al., 2007). The present investigation of self-blame predictors includes data garnered during phases 1-3. A description of constructs at each assessment phase follows.

During the screening session, participants completed a demographic and personal characteristics questionnaire that assessed variables such as typical alcohol use, a modified version of the SES (Koss et al., 1987) that assessed adolescent sexual assault history, a questionnaire regarding characteristics of participants' most significant sexual assault that assessed variables such as acquaintance with the perpetrator, and the Peritraumatic Distress Inventory (PDI; Brunet et al., 2001) that assessed distress during or immediately following participants' most significant sexual assault. Women who were eligible at screening were contacted by telephone and invited to complete the remainder of the study. Those returning for the "phase 2" questionnaire session completed the Impact of Event Scale-Revised (IES-R; Weiss & Marmar, 1997), which assessed posttraumatic symptoms, and the Posttraumatic Cognitions Inventory (PTCI; Foa et al., 1999), which includes subscales that assessed negative self-cognitions, negative-world cognitions, and the criterion measure of self-blame. Participants completed all questionnaires at private desks in a classroom setting. "Phase 3" individual interviews each were conducted by the first author during her doctoral training in clinical psychology, in the psychology department clinic. Audiotapes of the interviews were professionally transcribed and were coded according to procedures described below.

All study procedures were approved by institutional review. In particular, women provided written informed consent to participate at each study phase. They were advised their participation would be completely voluntary and that they could withdraw from the study at any point without penalty. After each session, they were debriefed without provision of specific study hypotheses, compensated with course credit, and provided contact information for on-campus counseling resources should they wish to utilize them. Participant safeguards also included use of participant numbers to track data across study phases and ensure information anonymity.

Measures

Demographic and personal characteristics questionnaire. A questionnaire assessing survivor characteristics was composed for this study and included items assessing consensual sex history (95.9% reported their first experience by age 18; $M = 4$ consensual sex partners) and alcohol use frequency (81.2% reported drinking 1-2 times per week or less often).

Modified Sexual Experiences Survey. Adolescent sexual assault history was assessed according to a modified version of the SES (Koss et al., 1987). The SES avoids stigmatizing wording that owes to rape underdetection (Koss, 1993; Pitts & Schwartz, 1997) and demonstrates good internal consistency and test-retest reliability (Koss & Gidycz, 1985). Modifications were consistent with recommendations made by Testa, VanZile-Tamsen, Livingston, and Koss (2004), namely specification of relevant penetration (oral, anal, or vaginal) and addition of an item regarding substance-induced impairment. Participants responded to each SES item in terms of number of sexual assault experiences since age 14, and women were eligible if they reported one (59.9% of the eligible sample) or more (40.1% of the eligible sample) sexual assault experiences resulting in penetration. Women who had experienced more than one sexual assault were asked to refer to the "most significant" as the referent event. Number of sexual assaults reported was employed as the sexual assault history measure.

Sexual assault characteristics questionnaire. A questionnaire assessing characteristics of participants' most significant sexual assault was composed for this study and included items assessing number of perpetrators ($M = 1.11$, $SD = .44$) and degree of prior acquaintance with the perpetrator(s) (96.6% had been acquainted to some extent).

Peritraumatic Distress Inventory. As an index of subjective trauma severity, survivors' distress during and immediately following the referent sexual assault was assessed using the 13-item PDI. The PDI exhibits good psychometric properties, predicts posttraumatic stress (Brunet et al., 2001), and employs a 5-point Likert-type scale (1 = *Not at all true*, 5 = *Extremely true*). Internal consistency of the PDI in this sample was .90 and, consistent with prior research, averaged PDI score ($M = 1.86$, $SD = .79$) exhibited convergent validity via a positive relationship with posttraumatic symptoms as measured by the IES-R (Weiss & Marmar, 1997), $r = .63$, $p < .01$.

Impact of Event Scale-Revised. Posttraumatic symptoms were assessed by the 22-item IES-R (Weiss & Marmar, 1997), which measures reexperiencing, avoidance, and hyperarousal symptoms of posttraumatic stress disorder (PTSD) and exhibits good psychometric characteristics as a measure of posttraumatic symptoms (Creamer, Bell, & Failla, 2003; Weiss & Marmar, 1997). The IES-R employs a 5-point Likert-type scale (1 = *Not at all*, 5 = *Extremely*). In this sample, the internal consistency of the IES-R was .92, and averaged IES-R score ($M = 1.88$, $SD = .65$) exhibited convergent validity via a positive relationship with a 1-item interview measure of self-reported current distress, $r = .25$, $p < .01$.

Posttraumatic Cognitions Inventory. Postassault negative cognitive content was assessed by the 36-item PTCI (Foa et al., 1999). The PTCI yields three factors: negative self-cognitions (i.e., the cognitive *content* variable hypothesized to be of unique predictive utility), negative-world cognitions, and self-blame (i.e., the criterion variable). All three subscales exhibit good psychometric characteristics, including prediction of negative trauma outcomes (i.e., PTSD severity, depression, general anxiety; Foa et al., 1999). The PTCI employs a 7-point Likert-type scale (1 = *Totally disagree* to 7 = *Totally agree*). In our sample, all three factors exhibited adequate internal consistency (negative self-cognitions = .94, negative-world cognitions = .88, self-blame = .78), and, as in the developmental study, averaged factor scores (negative self-cognitions: $M = 1.96$, $SD = .95$; negative-world cognitions:

M = 3.84, *SD* = 1.34; self-blame: *M* = 3.60, *SD* = 1.29) were positively interrelated, all *r*s > .40, all *p*s < .01.

Narrative measures. Content coding was conducted on each participant's responses during an individual interview to the following open-ended prompts: 1) "Please describe your unwanted sexual experience, from its start to its finish, in your own words," and, 2) "How has this incident impacted your life?" Beyond these prompts, participants were unencumbered in the quality or quantity of their verbalizations. In the few cases in which participants requested information about desired response content, the interviewer replied, "It's up to you." Interviews were professionally transcribed and were subjected to content coding procedures as described below.

Interview content was chunked into units, and each unit was coded for the presence or absence of target material according to specific criteria developed in accord with narrative-coding recommendations made by Bartholomew, Henderson, and Marcia (2000) and Smith (2000). Specifically, the counterfactual-preventability cognitions measure (i.e., the cognitive *process* variable hypothesized to be of unique predictive utility) was operationalized as total number of units containing self-focused, counterfactual thoughts about the sexual assault (e.g., "If only I hadn't gotten myself into the situation . . ."), including perceived avoidance or resistance failures (e.g., "I should have resisted more strongly . . ."). Construct validity of the counterfactual-preventability cognitions measure (*M* = 7.23, *SD* = 7.82) was supported by a positive relationship with a "should/shouldn't have" interview word count, *r* = .48, *p* < .01. The posttraumatic negative emotion measure was operationalized as total number of units containing explicit (e.g., "I felt so awful it was happening") or implicit (e.g., "I was trying to pretend nothing bad was happening") expressions of negative emotional experience. Construct validity of the posttraumatic negative emotion measure (*M* = 17.30, *SD* = 13.76) was supported by positive relationships with both peritraumatic distress, as measured by the PDI (*r* = .32, *p* < .01), and posttraumatic symptoms, as measured by the IES-R (*r* = .27, *p* < .01). Finally, total interview units (*M* = 44.66, *SD* = 35.35) was calculated to assess general verbal expressiveness.

Interrater reliability for narrative units and narrative codes was established by comparing a randomly selected subset of the principal rater's codings to those independently performed by a second rater. To begin, the second rater was trained using guidelines described by Bartholomew et al. (2000), including 1) reviewing the coding manual, 2) consulting with the primary rater to facilitate learning of manual guidelines, 3) studying sample codings to increase comfort with the application of guidelines to narratives, 4) applying the content coding scheme to practice narratives, with periodic feedback and reliability information, and 5) independently coding 20 randomly selected narratives for the purpose of reliability analyses, with periodic feedback to prevent coder drift. Rater 2's prediscussion ratings were entered into the actual reliability analyses. Primary-secondary rater agreement for unit breaks was 90.82%. Rater agreement for both the counterfactual-preventability cognitions and posttraumatic negative emotion measures surpassed Bakeman, Quera, McArthur, and Robinson's (1997) ".90 = quite reasonable" accuracy rubric. Kappa$_n$, interrater agreement for the hypothetical case in which a kappa

value of 1 is attainable (i.e., a model assuming equiprobability between the presence and absence of a construct code; Robinson & Bakeman, 1998) was greater than .80 for both narrative measures. Finally, a third rater reviewed a randomly selected one-third of rater 2's reliability set according to the same procedures described above. Primary-tertiary rater agreement for unit breaks was 87.9%, and content coding achieved $Kappa_n > .80$. In all, good reliability among three independent raters was achieved for unit breaks and narrative measures.

Results

Bivariate Analyses

Bivariate correlations supported hypotheses developed from the extant literature (see Table 1). Specifically, survivors blamed themselves to a greater extent following a referent sexual assault to the extent they had experienced a greater number of sexual assaults by history ($r = .19$, $p < .05$), to the extent they had experienced greater peritraumatic distress surrounding the referent sexual assault ($r = .22$, $p < .05$), and to the extent they concurrently evidenced greater posttraumatic negative emotion ($r = .17$, $p < .05$), posttraumatic symptoms ($r = .26$, $p < .01$), negative self-cognitions ($r = .56$, $p < .01$), and negative-world cognitions ($r = .40$, $p < .01$). In addition, the hypothesis that sexual assault survivors blame themselves to a greater extent insofar as they engage in counterfactual-preventability cognitive processing was supported ($r = .21$, $p < .05$). An unanticipated inverse relationship was found between self-blame and prior degree of acquaintance with the perpetrator(s). That is, the more acquainted sexual assault survivors were with their perpetrator(s), the less self-blame they reported following sexual assault, $r = −.19$, $p < .05$. This effect might have been due to greater distress conferred by having been assaulted by relative strangers, a potential explanation that was borne out when self-blame was simultaneously regressed onto peritraumatic distress and acquaintance with the perpetrator. That is, only peritraumatic distress predicted self-blame when these variables were entered as simultaneous predictors.

As expected, no relationships were found between sexual assault survivors' self-blame and consensual sex history, time since the referent sexual assault, number of sexual assault perpetrators, or general interview expressiveness, all ps > .29. Unexpectedly, however, no relationship was found between survivors' self-blame and their alcohol-use frequency, $r = .09$, $p = .28$. A potential explanation focuses on the present assessment of general rather than sexual assault-specific alcohol use, but this possibility was not supported; a follow-up analysis revealed no difference in survivors' self-blame dependent on whether or not the sexual assault involved substance-induced impairment according to SES-item endorsement, $p > .45$. This lack of relationship between survivors' reported alcohol use and self-blame stands in contrast to a positive relationship between these variables reported by Koss et al. (2002).

Table 1. Bivariate Correlation Matrix

	1	2	3	4	5	6	7	8	9
1. Self-blame		.19*	−.19*	.22**	.17*	.26**	.56**	.40**	.21*
2. Sexual-assault history			.02	.10	.04	.14	.24**	.19*	−.03
3. Perpetrator acquaintance				−.23**	−.10	−.22**	−.18*	−.15	−.13
4. Peritraumatic distress					.32**	.63**	.45**	.49**	.16
5. Posttraumatic negative emotion						.27**	.27**	.21**	.56**
6. Posttraumatic Symptoms							.53**	.50**	.02
7. Negative self-cognitions								.60**	.09
8. Negative-world cognitions									−.04
9. Counterfactual-preventability cognitions									

*Correlation is significant at the $p < .05$ level (2-tailed).
**Correlation is significant at the $p < .01$ level (2-tailed).

Multivariate Analyses

Multiple linear regression analysis was used to test the hypothesis that cognitive *content* (as measured by survey-assessed negative self-cognitions) and cognitive *process* (as measured by spontaneous narrative verbalizations of counterfactual-preventability cognitions) uniquely predict self-blame in a multivariate model. As hypothesized, with eight variables exhibiting significant zero-order correlations with self-blame entered in the model, only negative self-cognitions ($B = 5.39$, $p < .01$) and counterfactual-preventability cognitions ($B = 2.79$, $p < .01$) predicted self-blame. This model accounted for 38% of the variance in self-blame following sexual assault, $F^2(8, 134) = 10.13$, $p < .001$, $R^2 = .38$. Moreover, a structural equation model demonstrated good absolute fit between the data and the proposed model ($X^2[2] = 2.49$, $p = .29$) as well as relative fit compared to the independence model, Tucker-Lewis Index (TLI) = .99, Root Mean Square Error of Approximation (RMSEA) = .04 (Hu & Bentler, 1999). This model provided further evidence that negative self-cognitions and counterfactual-preventability cognitions independently predicted self-blame and also provided confirmation of the theorized relationships between posttraumatic negative emotion and each of these two cognitive variables (see Figure 1).

Discussion

Research has accumulated suggesting that self-blame is deleterious to victims' psychological health. Self-blame among sexual assault survivors in particular predicts negative outcomes including distress, psychological symptoms, ineffective coping, and sexual revictimization. The present study isolated self-blame as a critical psychological risk factor and then deconstructed self-blame by creating a parsimonious model of its predictors. Results supported the hypothesis that, among numerous independent correlates of
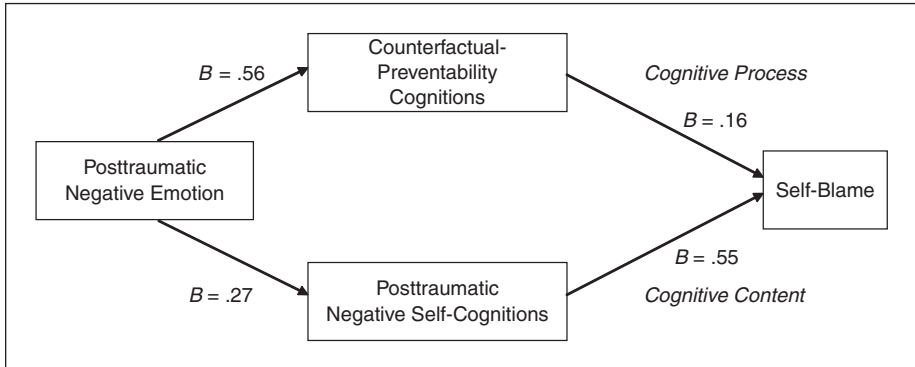
Figure 1. Cognitive content-and-process model of self-blame following sexual assault

self-blame following sexual assault, only cognitive *content*, as assessed by a self-report measure of negative self-cognitions, and cognitive *process*, as assessed by spontaneous narrative verbalization of counterfactual-preventability cognitions, uniquely predict self-blame in a multiple regression model. That is, although survivors' sexual assault history, perpetrator acquaintance, peritraumatic distress, posttraumatic negative emotion, posttraumatic symptoms, and posttraumatic negative-world cognitions each exhibited zero-order correlations with self-blame, these were not multivariate predictors of the criterion variable.

Self-blame's relationship with posttraumatic negative self-cognitions is relatively intuitive and follows basic attributional principles: women engaging to a greater extent in negative, stable, and global self-cognitions (e.g., "I am a weak person") also tend to ascribe more self-blame following sexual assault. That is, sexual assault survivors more strongly endorsing negative self-cognitions extend these sentiments to their culpability for sexual assault and, thereby, more strongly endorse self-blame items such as, "The event happened because of the way I acted." In short, posttraumatic negative self-cognitions predict event-specific self-blame following sexual assault.

Importantly, our data advance the extant literature by demonstrating that counterfactual-preventability cognitions, conceptualized here as a cognitive process measure, independently and incrementally beyond negative self-cognitions predict self-blame. By employing an open-ended narrative methodology, we were able to assess sexual assault survivors' propensity toward imagining and spontaneously verbalizing how they might have prevented or otherwise altered their experiences. This cognitive process shares common qualities with the worry characteristic of rumination that has been shown to reduce perceived problem-solving efficacy (Lyubomirsky, Tucker, Caldwell, & Berg, 1999). Interestingly, however, counterfactual-preventability cognitions tapped rumination not about the sexual assault per se (e.g., "I am so sorry this event happened" or "I can't stop worrying about what he did"), but rather distinctly (counterfactual) event features that did not occur (e.g.,

"If only I had done X or Y differently, this event might not have occurred"). These data support theoretical accounts of counterfactual thinking (e.g., Markman et al., 2009; Sherman & McConnell, 1995), align with research on the etiology of self-blame among victims of other traumas including spinal cord injury (e.g., Davis et al., 1996), and methodologically expand upon research suggesting that prompted counterfactual thinking in sexual assault survivors predicts self-blame (Branscombe et al., 2003). Indeed, this study lends ecological credence to Branscombe and colleagues' (2003) findings by employing a free-response interview methodology and controlling for multiple potential confounds to the relationship between counterfactual-preventability cognitions and self-blame.

The present investigation supported the theoretical importance of cognition in predicting self-blame (e.g., Kahneman & Miller, 1986; Markman & Miller, 2006). However, we do not wish to underemphasize the theoretically important role that negative affect plays in activating these cognitions (Roese, 1997; Roese & Hur, 1997; Roese & Olson, 1997) as substantiated by our structural equation model. That is, although negative emotion was not a direct predictor of self-blame in multivariate context, it appears deeply bound up in the cognitive content and processing that, in turn, inculcates self-blame (Alicke, 2000). Overall, it appears that the thinking undergirding self-blame is inextricably influenced by undertones of distress. As stated by Shaver and Drown (1986), self-blame is not merely a personal dispute, but an "intensely personal" one.

Related to this, it should be emphasized that the counterfactual-preventability cognitions measure considered victims' own cognitive processing of their actions and inactions (e.g., "If I had had less to drink . . .") and thus was not an objective measure of actual behavioral failings. The subjective nature of this measure should be acknowledged in light of Carli's (1999) work demonstrating that hindsight bias produces misremembering of rape-consistent details and victim derogation. Carli concluded that "antecedents perceived . . . as leading to a victimization may never actually have occurred . . . [and] may, instead, be a fabrication" (p. 978). Likewise, it is possible that survivors in our study exhibited biased memory of sexual assault antecedents that in turn exaggerated the negative self-judgments they believed they were due.

Limitations of the study should be addressed by future research. First, the data are cross-sectional and, thus, causal or temporal conclusions about the etiology of self-blame following sexual assault remain speculative. Although model development commonly first relies upon theory and cross-sectional data (Koss et al., 2002), and although statistical procedures provided support for the proposed causal model, an even more stringent test of the model would be a longitudinal, prospective study that assesses cognitive content and process measures prior to assessment of the criterion measure of self-blame. Also, the strengths and weaknesses associated with the homogeneity of our sample should be noted. Although sample homogeneity enhances the internal validity of results for women whose features match the present sample (undergraduate women, who are at especially high risk of experiencing acquaintance sexual assault), it restricts the immediate generalizability of the proposed self-blame model to other groups. Thus, it is proposed that future research should examine the supported self-blame predictors within diverse populations (e.g., ethnic minority sexual assault survivors, community samples of sexual assault

survivors, samples of other traumatized populations, ordinary persons following mundane misfortunes), who may differ markedly from the present sample in terms of self-impressions, world beliefs, and prevention-efficacy perceptions, any of which could affect self-blame. Finally, although we believe that the results of our nonclinical study should generalize to clinical populations such that clinically detectable cognitions signal a post-traumatic course marred by self-blame, this possibility awaits empirical verification.

The primary contribution of the present study is a model specifying the importance of both cognitive-content and cognitive-process predictors of self-blame following sexual assault. The cognitive-process component of this model is especially important both clinically and as a harbinger for future trauma research. In clinical contexts, attention should be paid not only to negative, self-focused thought content in which trauma survivors may engage but also to survivors' propensity to *reconstruct* aspects of the events that have befallen them. The present findings also highlight that extant research may be limited insofar as it relies upon constrained, predetermined questionnaire data alone. Our results suggest that neglecting narrative data may tell merely a partial story about trauma aftermath. At the most general level, it is hoped that the present study foreshadows a paradigm shift toward research designed to discover what survivors of sexual assault and other stressful life events, unconstrained by demand-laden questionnaires and prompts, spontaneously communicate about their experiences.

Finally, a comment should be made about the indispensible potential social implications of continued research efforts toward fine-tuning theoretical and empirical models of self-blame and, moreover, intervening in self-blame following sexual assault. As reviewed here, research has established that numerous personally devastating outcomes may emerge as consequences of self-blame following the all-too-common experience of sexual assault against women. For example, in an earlier report of data garnered from this sample, self-blame was found to prospectively predict sexual revictimization (Miller et al., 2007). Thus, downstream consequences of the types of thinking examined here—counterfactual-preventability cognitions, negative self-cognitions, and, in turn, self-blame—may include vulnerability to future physical and psychological harm. Consistent with an integration of theoretical accounts related to self-blame (Alicke, 2000; McGill, 1989; McGill & Tenbrunsel, 2000), we would argue that a major undercurrent of the victimization cycle is a sense of contextually produced lack of perceived control as well as a recognition of the perceived inevitability of it (for discussions of secondary control, see Rothbaum, Weisz, & Snyder, 1982; Thompson, 1981). Thus, it is critically important that future research not only investigate effective ways to prevent the phenomenon of sexual assault per se but, more generally, design effective therapeutic interventions that confer empathy and support to women who are struggling to make sense of their experiences amid challenging social contexts.

Authors' Note

Declaration of Conflicting Interests

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