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NOT GETTING OUT WHILE THERE IS STILL TIME? BEHAVIORAL RESPONSE
TO THREAT AS A POSSIBLE MECHANISM OF SEXUAL REVICTIMIZATION

by

RaeAnn E. Anderson

A Dissertation Submitted in
Partial Fulfillment of the
Requirements for the Degree of

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ABSTRACT
NOT GETTING OUT WHILE THERE IS STILL TIME? BEHAVIORAL RESPONSE
TO THREAT AS A POSSIBLE MECHANISM OF SEXUAL REVICTIMIZATION

by

RaeAnn E. Anderson

The University of Wisconsin-Milwaukee, 2014
Under the Supervision of Shawn P. Cahill

Sexual violence affects approximately one in four college women. Feminist sexual assault risk reduction programs attempt to empower women to cope with threats of sexual assault, yet there is no standardized way to assess behavioral responses to threat, the key behavior targeted in these interventions. In this study, we sought to compare the behavioral responses of two groups of college women, those without a history of any sexual victimization, $n = 12$ and those with a history of repeated sexual victimization, $n = 45$ in a standardized analog task in order to investigate possible group differences which may lead to increased risk for sexual assault and psychological factors which facilitate different styles of responding. Results indicate that women with a history of victimization were more likely to engage in less effective behavioral response styles. Hierarchical regression analyses found that interpersonal skills predicted assertive style responding. These findings indicate this analog task may be useful as a risk assessment to identify those in need of risk reduction intervention and that women with a history of sexual assault may require greater or different kinds of intervention in order to reduce risk. Finally, results indicate interpersonal skills as a possible target for increasing the efficacy of risk reduction interventions.

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Introduction

Significance. In American societies, it is a fact of life that a substantial number of women will experience sexual violence (Post, Biroscak, & Barboza, 2011). Approximately 11-18% of women in the general population will experience rape in their lifetimes, and these rates are often further elevated on college campuses (Gross, Winslett, Roberts, & Gohm, 2006; Post, et al., 2011). Indeed, the White House Council on Women and Girls Report (2014) specifically highlights sexual assault on campuses as a particular area of concern. Sexual violence, including rape and other forms of sexual coercion, is associated with a vast array of deleterious consequences from poorer physical health to increased rates of PTSD (Koss, 1993). The experience of sexual assault is associated with worsened interpersonal functioning (Classen, Field, Koopman, Nevill-Manning, & Spiegel, 2001), increased likelihood of unemployment, and lowered income (Byrne, Resnick, Kilpatrick, Best, & Saunders, 1999). Furthermore, some women experience sexual victimization over and over, further worsening already poor outcomes (Kimerling, Alvarez, Pavao, Kaminski, & Baumrind, 2007). In fact, prior sexual assault is the great risk factor for later sexual assault; after experiencing childhood sexual abuse (CSA) the likelihood of experiencing sexual assault as an adult is increased 2-11 times (Messman-Moore & Long, 2003; Roodman & Clum, 2001). This range of risk is due to different risk pathways; research on this issue has only recently begun to identify differential risk profiles that emerge after an initial assault (Swartout, Swartout & White, 2011). Notably, many women experience a cycle of repeated sexual victimization with worsening health consequences with each event. Even though as many women are affected by sexual revictimization (approximately 12%) as PTSD, OCD and GAD combined, we have

virtually no efficacious intervention strategy for reducing the risk of experiencing sexual victimization, the most potent cause of PTSD in civilians, whereas we have multiple efficacious intervention strategies for PTSD, OCD and GAD (Kimerling, Alvarez, Pavao, Kaminski, & Baumrind, 2007; National Institutes of Mental Health, 2012). Thus, sexual assault is a public health issue in the United States, where a large number of women experience the serious health, interpersonal and economic consequences.

Intervention. Although many interventions have been designed and implemented they are of limited efficacy; those with demonstrated efficacy are not in widespread use, and are less efficacious for women with a history of victimization (L.A. Anderson & Whiston, 2005; Brecklin, 2008; Brecklin & Forde, 2001; Hanson & Gidycz, 1993). Feminist self-defense prevention or risk reduction programs (as sexual assault cannot truly be prevented by women but the risk of completed attacks can be reduced) are predicated on the idea of empowering women to more effectively cope with risky situations when they arise. This coping response would include two primary skills in an interrelated, likely iterative, complex process: recognizing a threatening situation and behaviorally responding to it. In this paper, the term behavioral response is used to describe any verbal and/or nonverbal behaviors that may planned or automatic (unplanned) produced in reaction or response to a threat of sexual assault. This term is used to encompass both planned, active, behaviors such as kicking an attacker and involuntary, automatic responses such as freezing in fright. Additionally, this term is used rather than “behavioral resistance” to indicate that some behaviors may be engaged in without conscious recognition or perception of a risk and that some of these behaviors, such as bargaining, may not be perceived as “resistance” though are enacted with that

purpose. Although it is hypothesized that the mechanisms of action are risk perception and behavioral response to threat, current intervention approaches do nothing to assess these behaviors pre- or post-intervention, and accordingly, do not demonstrate efficacy for these mechanism specific outcomes and have limited overall efficacy. Thus, preventing sexual assault is still largely unattainable through currently available psychological intervention, especially for those at highest risk. Re-designing interventions with an eye to the basic mechanisms of action and measuring these mechanisms, particularly behavioral response to threat may increase the efficacy of intervention.

Theory. It is yet unknown why this cycle of repeated victimization affects some women and not others though a great variety of mechanisms, at least fifteen as recently counted by this author, have been proposed (Classen, Palesh, & Aggarwal, 2005). Messman-Moore and Long (2003) outlined the ecological framework theory, which is unique in accounting for revictimization risk through function rather than form of psychological sequelae of initial victimization experiences such as CSA (in contrast to Breitenbecher, 2001 for example). Thus, this theory posits that various psychological risk factors such as alcohol abuse, dissociation, and interpersonal problems may all be different ways in which the same psychological vulnerability is expressed in the behaviors critical to coping with assault, for example, risk perception and/or threat response. Research on the psychological sequelae of childhood sexual abuse (CSA) has been fruitful in linking many different factors to sexual revictimization though very few of these studies have linked the psychological factors in question to risk perception or behavioral response to threat, the hypothesized mechanisms of risk reduction

interventions and the key behaviors in which psychological vulnerabilities are likely expressed. Following theory, behavioral response is perhaps not only a mechanism of action in revictimization but strong behavioral response could reduce risk for all women as strong behavioral responses likely deter further coercion in risky situations (Bart & O'Brien, 1984; Clay-Warner, 2003). However, relatively little is known about behavioral responding in and of itself.

Behavioral response to threat as a possible mechanism. Assertive, active, behavioral response to threat is the main component of feminist self-defense and is likely the “active ingredient” though this has never been demonstrated empirically. Notably, when faced with a threat women are balancing many objectives internally in addition to their own safety, such as concerns about the relationship, demands of the social environment, and their own emotional reactions (Nurius & Norris, 1995). Assertive responding styles such as active physical behaviors including fighting back and trying to escape are considered the most effective strategies, are routinely employed by most women, and have been associated with rape avoidance in many different studies (Ullman, 2007; Clay-Warner, 2003). However, it is unknown in what sequence these behaviors tend to be implemented or need to be undertaken in order to be effective (Clay-Warner, 2003). In comparison to assertive responding, diplomatic responses are characterized by a relative indirectness in the way protective behaviors are presented, for example, through joking or changing the subject. Contrastingly, immobile style responding is consistent with “freezing”, and is generally characterized by inability to generate protective behaviors. Additionally, recent research indicates that a substantial minority of women, nearly one third, does not engage in a behavioral response at all and may engage in

behavioral responses that are ineffective such as waiting for the threat to escalate, deciding to comply, and avoiding making a decision (R. E. Anderson, Brouwer, Wendorf, & Cahill, *unpublished*; Clay-Warner, 2002; Masters, Norris, Stoner, & George, 2006). Thus, examining how a history of repeated sexual victimization and behavioral response to threat are related is likely critical to understanding the process of revictimization and designing effective intervention programs for all women.

Behavioral response and victimization. Differences in behavioral responding to sexual assault threats related to a history of victimization have also been found in research retrospectively examining women's experiences of victimization. In a study by Macy, Nurius, and Norris (2007a), the experiences of 415 college women were examined using latent profile analysis. Four multivariate risk profiles were established based on identified risk factors: severe victimization and high relationship expectancies, severe victimization and high alcohol use, high alcohol use low else (victimization history, relationship expectancies and precautionary behaviors), high relationship expectancies and high precautionary behaviors. A second study then investigated whether these profiles differentiated how women responded behaviorally to a past assault, results of which indicated that the severe victimization and high relationship expectancy group were significantly more likely to report diplomatic and immobile style behavioral responding (Macy, Nurius, & Norris, 2007b).

Most of the current studies on behavioral response have utilized vignettes or surveys to elicit participants intended behavioral responses. Crawford, Wright and Birchmeier (2008) found, using a written vignette about a college party, that women with a history of victimization chose the riskier behavioral response options at five of the eight

decision points portrayed; these included riskier options at relatively low risk decision points such as attending a party with strangers where alcohol was consumed to higher risk responses like accepting help into their room from a male stranger when ill from consuming alcohol at the party. Similarly Naugle (2000) compared the intended behavioral responses women rated after viewing three video vignettes. In two of the three risk vignettes women with a history of victimization were more likely to engage in high risk behavior such as acquiescing to coercive behavior from an authority figure. Haines Slamka (2003) found that across three different risk scenarios women without a history of sexual victimization were more likely to engage in active behavioral responses than women who had experienced sexual victimization.

Messman-Moore and Brown (2006) grouped women based on their history of sexual victimization to analyze intended behavioral responses to a written vignette. The analysis groups were women with a history of revictimization, history of adolescent or adult rape only, history of CSA only and no adolescent or adult victimization. To assess behavioral responses participants were asked to read a written vignette in which the risk of sexual assault progressed throughout the scenario. The vignette was separated into 1-3 sentence sections that indicated possible decision points and participants indicated at what point they would feel uncomfortable (risk perception) and at what point they would leave (behavioral response). Based on this grouping scheme women with a history of revictimization were most likely to report that they would leave the scenario at a later time and were more likely to fall above the 70th percentile in later leave times. During the follow up period women who endorsed late leave times were more likely to experience completed rape. This study also found that poorer risk perception was related to

prospective revictimization but late leave times were the stronger predictor. This study is important in demonstrating the relationships between revictimization and poorer behavioral response in a vignette as well as how results from an analog study may be predictors of outcome. In this study women with poorer behavioral responding as measured by the vignette task were more likely to experience rape.

Work by Yeater and colleagues has expanded on one limitation of vignette based experiments, that responses may be specific to the limited stimuli of the vignette. This was done by using a large number of vignettes, 40, and varying the content of the vignettes to include many different contextual elements such as type of relationships with the hypothetical man, type of setting, and alcohol consumption. Using this series of vignettes Yeater and Viken (2010) found that women with a history of victimization chose responses lower in refusal intensity. Another study using the same vignette series asked participants to come up with their own responses that were then rated for effectiveness by experts (Yeater, McFall, & Viken, 2011). This study used hierarchical linear modeling to examine victimization history as a moderator of the predicted relationship between levels of depicted sexual activity and alcohol consumption on behavioral response. Results indicated that victimization history had a moderating effect on the relationship between sexual activity, alcohol, and the effectiveness of the behavioral responses such that as the levels sexual activity and/or alcohol increased response effectiveness decreased.

Two studies have expanded on this work by examining how prior victimization and intended behavioral response may be related to future victimization experiences. Gidycz, Van Wynsberghe, and Edwards (2008) asked women to evaluate what behavioral

response they would perform in response to an open-ended, individually imagined (in other words, unique) threat; participants then completed a follow up assessment nine weeks later to examine whether women engaged in their intended response when threatened. Sixteen percent of the sample was assaulted over the nine week follow-up period and results indicated that immobile responses during the attack were predicted by prior experiences of victimization. Additionally, this study found the intention to use assertive responses predicted the actual use of assertive behavioral responses but the perpetrator's use of physical coercion was a stronger predictor of assertive responses.

Turchik, Probst, Chau, Nigoff and Gidycz (2007) extended and replicated this study by utilizing the same basic design with an expanded assessment of behavioral responses and possible psychological barriers. This study found that emotional reactions, such as greater confidence, were strong predictors of the use of physically assertive behavioral responses during the follow-up period. Replicating the prior results, this study also found that assertive hypothetical responses were predictive of actual assertive responses during the follow up period. Unexpectedly, this study found that women with a history of victimization were less likely than those without a history of victimization to engage in diplomatic and/or immobile responses when attacked during follow-up. Though this study was innovative in using an expanded assessment of behavioral responses via utilizing the Behavioral Response Questionnaire developed by Nurius and colleagues, the threat stimulus participants to which provided hypothetical responses was not standardized, and diplomatic and immobile responses were coded in one category in analyses (Nurius et al., 2000).

Summary. In summary, several studies have illustrated that a history of sexual victimization is related to less effective self-defensive and behavioral responses in prior experiences, and poorer intended behavioral responding in response to vignettes. However, the measurement of behavioral response greatly varied across studies and the type of threat to which participants described their responses also varied widely both within and between studies. No studies were identified that utilized consistent measurement of behavioral response to threat to past and hypothetical threats. Few studies have examined how behavioral response and victimization history are related prospectively; however, Gidycz et al. (2008), Turchik et al. (2007) and Messman-Moore and Brown (2006) found that intended behavioral responding corresponded well to actual, future, behavioral responding. Together these studies illustrate that poorer behavioral responding to threat may be a mechanism of revictimization. Of other proposed mechanisms, few have the support of as much empirical work, with the exception of alcohol use and PTSD symptoms. Following ecological framework theory risk for victimization is incurred through three major pathways, one wherein behaviors increase exposure to potential perpetrators and the other two wherein behaviors change one's ability to accurately perceive risk or effectively respond to risky situations, respectively. Alcohol use likely affects all three major pathways. For example, drinking at a party can increase risk in the following ways: alcohol changes risk perception as it narrows attention, weakens the ability to behaviorally resist advances, and most large social gatherings include unknown or less well known strangers and acquaintances (Benson, Gohm & Gross, 2007; Crawford, Wright & Birchmeier, 2008; Pumphrey-Gordon & Gross, 2007). It is less clear through which pathways PTSD symptoms

operate. There are several possible hypotheses; for example, the hypervigilance symptoms may be protective in limiting exposure but emotional numbing may alter risk perception. Understanding the major risk pathways then allows for a more complete and in-depth understanding of risk processes. Thus, behavioral response to threat is likely a potent area for intervention as a primary risk pathway for victimization.

Current study. This study sought to expand on the work of Turchik et al. (2007) and R. E. Anderson and Cahill, (*in press*) by combining previously validated assessment techniques in a standardized way to examine how behavioral response to threat in an analogue self-defense task is related to a history of sexual victimization. Creating a standardized procedure for evaluating behavioral response to threat allows researchers to better study the process of behavioral responding and interventionists to better evaluate risk reduction program outcomes. Currently there is no standardized, empirically supported assessment for behavioral response to threat even though it is likely a mechanism of sexual victimization and one of the primary target behaviors of intervention.

Aims and Hypotheses

The overall goal of this study was to examine the relationship between the experience of repeated sexual victimization and behavioral response to threat in an analogue self-defense task within the ecological framework theory. The first primary aim of this study was to evaluate whether a history of repeated sexual victimization is associated with less effective behavioral response (e.g., non-assertive response) to threat in an analogue date rape scenario. It was hypothesized that women with a history of revictimization would exhibit less effective behavioral responses, being more likely to

engage in immobile or diplomatic response styles rather than assertive responding. The second primary aim was to evaluate whether prior behavioral response style is predictive of current response style to a hypothetical stimulus. It was predicted that past behavioral response styles will be moderately, positively correlated with present, hypothetical behavioral response styles. A secondary aim was to explore how other factors predicted by the ecological framework theory, such as interpersonal skills, coping style, and emotion dysregulation, are related to current, hypothetical, behavioral response to threat. It was hypothesized that lower interpersonal skills, more avoidant coping styles, and greater difficulty with emotion regulation will be associated with greater use of immobile and diplomatic behavioral responses. A final exploratory aim sought to examine the sequence of behaviors women undertake in threatening situations.

Methodology

Participants

Participants were college women at the University of Wisconsin – Milwaukee age 18 or older recruited between 09/18/2013 and 12/13/2013. Participant selection and group classification was a three-step process involving (a) an initial screening conducted online, (b) invitation of two subgroups of individuals for potential participation based on meeting preliminary criteria for being classified as either having no history of sexual victimization or having a history of at least two experiences of sexual victimization, and (c) final classification based on complete data obtained at the laboratory appointment. Figure 1 presents the recruitment and flow of participants to the study through initial screening and the laboratory appointment. Of 255 women who initiated the online screening, 77 women met preliminary criteria for classification as repeat victims of sexual assault, all

of whom were invited to participate in the study, and 109 women met preliminary criteria for classification as non-victims, approximately 46 of whom were invited to participate in the study. Based on epidemiological data, we expected that non-victims would significantly outnumber multiple victims at a ratio of approximately 6:1. To insure adequate recruitment of those with a history of multiple victimizations, all participants eligible for the repeated victimization group were invited to participate whereas only a proportion of participants eligible for the non-victim control group were invited.

A total of 61 women presented to the laboratory and provided informed consent. Participants classified in the no-sexual victimization history group, $n = 12$, met the following criteria: no history of any sexual victimization as assessed by the Childhood Trauma Questionnaire (CTQ), the Sexual Experiences Survey-Short Form Victimization (SES-SFV), the sexual coercion scale of the Revised Conflict Tactics Scale (CTS2), and a frequency question assessing the total number of times the person has experience any kind of sexual assault. Notably, due to programming error the vaginal rape item of the SES-SFV was not administered and thus this otherwise comprehensive assessment of sexual victimization underestimates that specific type of sexual violence.

Notably, the use of the CTS2 as an additional victimization history measure was implemented after data had been collected following recent developments in the scientific literature and the analysis of data collected in our laboratory for another study. Both our own data collection and that published in White, McMullin, Swartout, Sechrist & Gollehon (2008) indicate that the SES-SFV may under-identify sexual violence that occurs within intimate relationships. Examination of the data in this study indicated sexual violence within intimate relationships was fairly prevalent and thus the group

classification criteria were revised to account for this. Full description of the study questionnaires is provided in the subsequent section on Materials.

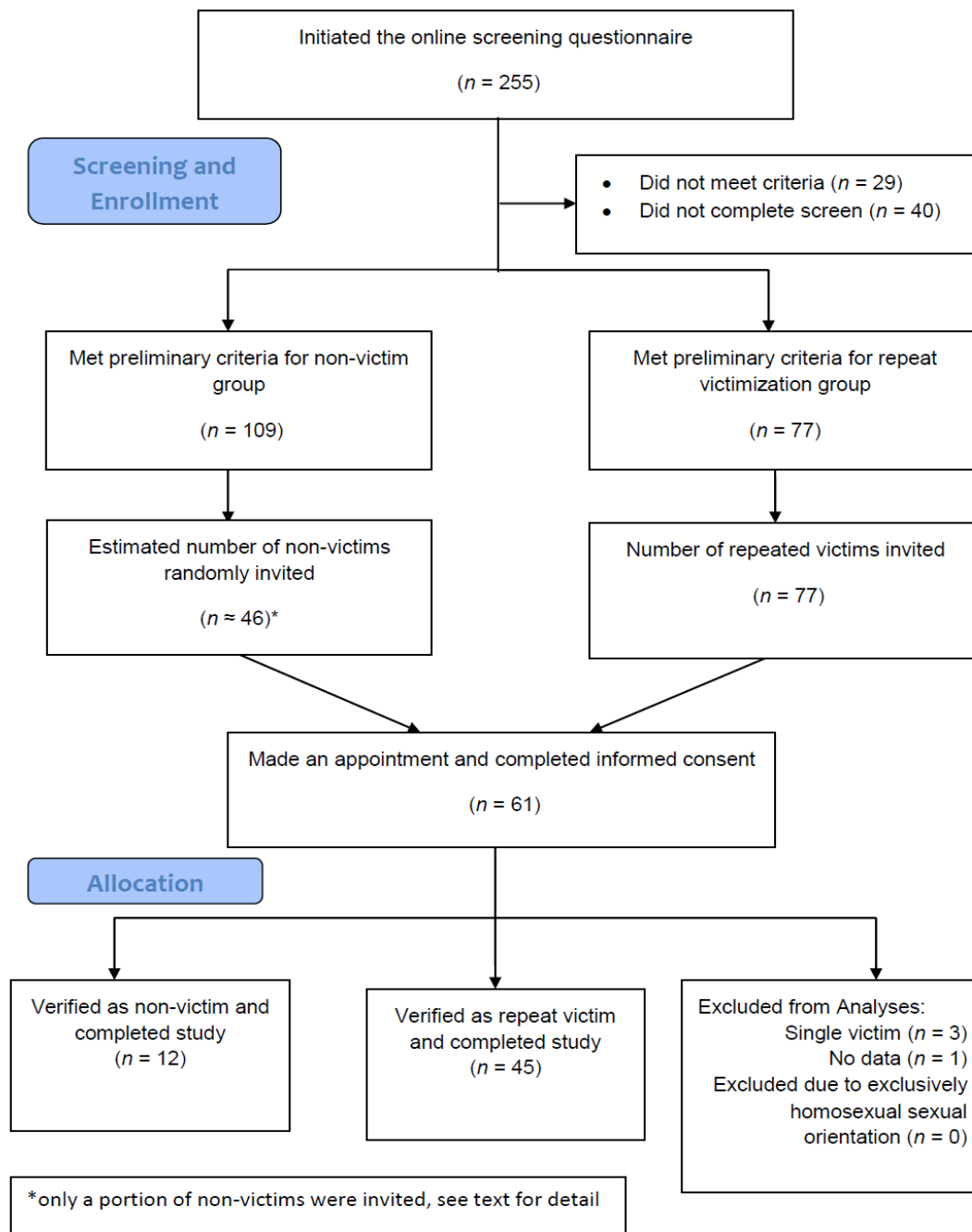
Participants classified in the repeated sexual victimization history group, $n = 45$, met the following criteria: a history of at least two prior experiences of any type of sexual victimization as assessed by the CTQ, the SES-SFV, the CTS2 or the general frequency question. This study oversampled women with a history of repeated sexual victimization intentionally to achieve an equivalent or slightly higher number of victims as non-victims. However our recruitment of women with a history of repeated victimization far surpassed our recruitment of non-victims. We believe several factors contributed to this. One factor is that women with a history of victimization who were deemed eligible were more likely to follow through and make a laboratory appointment, 45 participated of the 77 screened eligible or 58% than women without a history of victimization who were eligible, 12 out of 46 or 26%, see Figure 1. Additionally, our classification of group status based on laboratory measures rather than the screening likely favored classification into the repeat victim group as the laboratory measure of sexual violence were more comprehensive and may have re-classified some women as victims who in the original screening may have been classified as non-victims.

Exclusion criteria were: male gender, younger than 18 years of age, exactly one prior experience of sexual victimization, and prior participation in this study. Participants who self-identified their sexual orientation as exclusively lesbian were not included in analyses as it is theorized that they may experience difficulty relating to a the heterosexual dating stimulus. Four participants were not included in the study analyses; one participant signed consent but did not provide any further study data and three

participants reported having only a single incidence of sexual assault. No participants were excluded from analyses because of sexual orientation.

Figure 1

Participant and Recruitment Flow Diagram



Sample characteristics for the 59 participants who provided demographic data are summarized in Table 1 and organized by experimental group status. Overall, the mean age of participants was 23.0 years, $SD = 5.3$, range 18 - 52. Most participants identified as heterosexual (90%), the remaining identified as bisexual. Racially, 73.3% of participants identified as Caucasian, 20.0% as African American, 6.7% as Asian American, and 6.7% as Native American. Participants were able to select more than one racial identity; 16.7% of the sample identified as multi-racial. Ethnically, 3.3% of participants identified as Latina; one Latina participant identified her race as African American, another identified her race as African American and Caucasian. The median and modal family income level of participants was \$40,000-59,000 and ranged from 13.3% in the lowest sixth (\$0-19,999) to 10.0% in the highest sixth (\$100,000 and above). The average number of years in college was 2.7, $SD = 2.0$ and psychology majors constituted 43.3% of the sample. Chi-squares were performed to examine differences between non-victim and repeated victim groups on demographic variables; African American women were more likely to be classified as non-victims than repeat victims $\chi^2(1, 56) = 4.69, p = .03$. Sample characteristics are summarized by experimental group in Table 1.

Table 1
Sample Demographics Summarized by Group

	Non-Victim (<i>n</i> = 12)	Repeated Victim (<i>n</i> = 44 ^a)	Single Victim (<i>n</i> = 3)	Entire Sample (<i>n</i> = 59 ^b)
Age	<i>M</i> = 22.00, <i>SD</i> = 2.73 (18 – 27)	<i>M</i> = 23.18, <i>SD</i> = 5.90 (18 – 52)	<i>M</i> = 21.7 <i>SD</i> = 3.5 (21 – 28)	<i>M</i> = 22.95, <i>SD</i> = 5.30 (18 – 52)
Sexual Orientation				
Heterosexual	<i>n</i> = 11 (91.7%)	<i>n</i> = 40 (90.9%)	<i>n</i> = 3 (100.0%)	<i>n</i> = 54 (91.5%)
Bisexual	<i>n</i> = 1 (8.3%)	<i>n</i> = 4 (9.1%)	<i>n</i> = 0	<i>n</i> = 5 (8.5%)
Race ^c				
Caucasian	<i>n</i> = 7 (58.3%)	<i>n</i> = 35 (79.5%)	<i>n</i> = 2 (66.7%)	<i>n</i> = 44 (74.6%)
African American*	<i>n</i> = 5 (41.7%)	<i>n</i> = 6 (13.6%)	<i>n</i> = 1 (33.3%)	<i>n</i> = 12 (20.3%)
Asian	<i>n</i> = 0	<i>n</i> = 4 (9.1%)	<i>n</i> = 0	<i>n</i> = 4 (6.8%)
Native American	<i>n</i> = 0	<i>n</i> = 4 (9.1%)	<i>n</i> = 0	<i>n</i> = 4 (6.8%)
Multi-Racial	<i>n</i> = 1 (8.3%)	<i>n</i> = 9 (20.45%)	<i>n</i> = 0	<i>n</i> = 10 (16.9%)
Ethnicity:				
Latina	<i>n</i> = 0	<i>n</i> = 2 (4.5%)	<i>n</i> = 0	<i>n</i> = 2 (3.4%)
Median Income Level	\$40,000- 59,000	\$40,000- 59,000	\$40,000- 59,000	\$40,000-59,000
Years in College	<i>M</i> = 2.17, <i>SD</i> = 1.47 (0 – 4)	<i>M</i> = 2.94, <i>SD</i> = 2.15 (0 – 7)	<i>M</i> = 2.00, <i>SD</i> = 1.73 (0 – 3)	<i>M</i> = 2.73, <i>SD</i> = 2.02 (0 – 7)
Major (Psychology)	<i>n</i> = 5 (41.7%)	<i>n</i> = 20 (45.4%)	<i>n</i> = 1 (33.3%)	<i>n</i> = 26 (49.2%)

^a A total of 45 participants were classified as a repeat victim but one participant did not provide demographic data. Accordingly, demographic data are based on *n* = 44 participants.

^b A total of 60 participants completed the study procedures but one participant did not provide demographic data. Accordingly, demographic data are based on *n* = 59 participants.

^c The sum of the frequencies (%) may exceed the total *n* for a given group because participants were able to select multiple options.

* African American women were more likely to be classified as non-victims than repeat victims, *p* < .05

Materials.

Questionnaires were organized into two groups: threat response task questionnaires and standard battery questionnaires, see Table 2. The administration of the threat response task and the standard battery questionnaires as the first study activity was

counterbalanced across participants. Thirty two participants completed the threat response task first and 28 participants completed questionnaires first. All study questionnaires have demonstrated adequate reliability and validity in previous research. Questionnaire instructions and items were presented as the original authors intended with few exceptions as noted below.

Table 2

List of Study Questionnaires

Standard Questionnaire Battery	Behavioral Response Task Questionnaires
-Demographics	-Positive and Negative Affect Schedule (PANAS; pre-task)
<u>Behavioral Response Questionnaires</u>	<u>Completion of Behavioral Response Task</u>
-Behavioral Response Questionnaire (BRQ) ^a	-Behavioral Response Questionnaire (BRQ)
-Barriers to Sexual Aggression Questionnaire (BRSA) ^a	-Barriers to Sexual Aggression Questionnaire (BRSA)
<u>Emotion Questionnaire</u>	- Responses to Script-Driven Imagery Scale (RISDIS)
-Difficulties in Emotion Regulation Scale (DERS)	-Positive and Negative Affect Schedule (PANAS; post-task)
<u>Trauma History Questionnaires (block)</u>	
-Childhood Trauma Questionnaire (CTQ)	
-Conflict Tactics Scale Revised (CTS2)	
-Sexual Experiences Survey-Short Form Victimization (SES-SFV)	
-Assault Characteristics Questionnaire (ACQ) ^a	
<u>Interpersonal and Coping Skills Questionnaires</u>	
-Inventory of Interpersonal Skills-32 (IIP-32)	
-Brief COPE	
-Behavioral and Characterological Self Blame (BCSB)	
-Rosenberg Self Esteem Scale (ROSEN)	

Note. Measures for the Standard Questionnaire Battery are listed in thematic order but were administered in a computer randomized order with Trauma History Questionnaires administered as a block in the order listed. Measures for the Behavioral Response Task Questionnaires are listed in the order they were administered. Questionnaires denoted with an ^a were administered regarding the past worst assault for repeated victims, see text.

Standard questionnaire battery. Questionnaires were administered in a randomized order via Qualtrics with one major exception to complete randomization in questionnaire order; questionnaires included as part of the trauma history assessment

were administered as a block. The trauma history block of questionnaires was administered in the following order: CTQ, CTS2, SES-SFV, and ACQ. Participants also completed the BRQ and the BRSA as part of the standard battery. If the participant had a prior history of victimization, they completed the BRQ, BRSA, and the ACQ regarding their past worst trauma. Non-victimized participants completed the BRQ and BRSA regarding an imagined “typical” sexual assault.

Behavioral Response Questionnaires. The BRQ is a 27-item questionnaire that groups responses into three distinct styles: assertive, diplomatic and immobile. Each item was rated on a 5-point scale ranging from 0 (not at all like my response) to 4 (very much like my response). Participants completed the BRQ twice, once regarding either the past event they considered the worst as identified on the SES-SFV or the CTQ or an imagined “typical” sexual assault (for those without any victimization experiences). All participants also completed the BRQ regarding the behavioral response task stimulus (described below). Cronbach’s alphas in the current for each BRQ-task subscale were as follows: BRQ-assertive (12 items) alpha = .85, BRQ-diplomatic (9 items) alpha = .73, BRQ-immobile (six items) alpha = .51. BRQ-past alphas were similar.

Psychological barriers to utilizing these response behaviors were assessed with the Barriers to Response to Sexual Aggression Questionnaire (BRSA: Nurius et al., 2000). The BRSA is a 21 item scale that assesses how women’s concerns about relationships, embarrassment, injury, et cetera, impact the judgments they may make about how to protect themselves in threatening situations. Each item was rated on a 5-point scale ranging from 0 (not at all) to 4 (very difficult). Similarly to BRQ administration, participants completed the BRSA twice, once during the standard battery

and once during the task. As before, participants responded to the BRSA in relation to either a past assault or an imagined “typical” assault depending on experimental group. Cronbach’s alpha for BRSA-task subscales ranged from .79 - .92 in this sample.

Emotion Questionnaires. Emotional regulation skills were evaluated using the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). The DERS is a 36-item self-report instrument that assesses overall emotion dysregulation as well as six factor-analytically derived facets of emotion regulation: nonacceptance of emotional responses, difficulties engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity. Cronbach’s alpha for the DERS total scale in this sample was .87, DERS subscale alphas ranged from .60 to .87. Two additional emotional reaction questionnaires (PANAS and RISDIS) were utilized during the threat task. These questionnaires will be described in the relevant section below.

Trauma History Questionnaires. Victimization history was assessed using three well established trauma history questionnaires, the Sexual Experiences Survey (SES-SFV; Koss et al., 2007, 2008; Koss & Gidycz, 1985), the Childhood Trauma Questionnaire (CTQ: Bernstein, Fink, Handelsman, & Foote, 1994), and the Conflict Tactics Scale-Revised (CTS2: Straus, Hamby, Boney-McCoy, & Sugarman, 1996) and one general question at the end of the trauma assessment, “Please indicate how many discrete or separate incidences have occurred to you. By discrete incident we mean a single experience in which unwanted sexual activity occurred without a significant interruption by another non-coercive activity or without the ability to end the experience”. Finally, the Assault Characteristics Questionnaire (ACQ: Littleton, Axsom,

Breitkopf, & Berenson, 2006) was administered in order to learn more about the context of the trauma indicated by participants to be the most severe or meaningful.

Selected items from the SES and CTQ were also administered as the screening questionnaire to determine eligibility for the study. Items from the original version of the SES were used for the screening following previous research but the revised version of the SES was utilized for the laboratory appointment as the revised version is more detailed. The original version of the SES contains ten items, one regarding consensual sex and then separate items for each type of sexual assault one assessing attempted assaults and a similar item assessing completed assaults of the same nature all utilizing a yes/no format for each item. Attempted and completed items were combined for brevity in screening purposes and the consensual sex item was dropped. Thus, seven SES items were used in the screening including an assessment of vaginal rape. All five items of the childhood sexual abuse subscale of the CTQ were utilized without modification.

For laboratory appointment, the SES-SFV was utilized. The SES-SFV is a ten item survey that assesses respondents' sexual experiences that occurred after the age of 14 split into two separate time frames, in the past year and since age 14 (but not the past year). The measure assess a variety of possible experiences that could be perpetrated including unwanted sex play, unwanted oral, anal and vaginal sex; the use of alcohol or drugs to obtain sexual experiences, and the degree of threat and/or force used to coerce sexual experiences. The instrument encourages accurate reporting by avoiding use of the words "rape" or "sexual assault" for most items and instead uses behaviorally specific definitions. For each item, participants respond to whether the event ever happened and then how many times for each timeframe, the past year and since age 14. This is a

recently revised version of the original SES. Previous versions have been used extensively in the research of prior victimization and perpetration (Edwards, Kearns, Calhoun, & Gidycz, 2009; Gidycz et al., 2001; Loh, Gidycz, Lobo, & Luthra, 2005). Updated and revised versions of this measure are available for research use only, which are specialized to the gender of the respondent and separate forms have been created for assessing victimization and perpetration experiences. This study used adapted items from the original version with a lifetime assessment timeframe for the initial screening and the revised version (described above) at the study appointment. The revised version has shown good internal consistency in other research (Walsh, DiLillo, & Messman-Moore, 2012). In this sample, Cronbach's alpha for SES-SFV-past year scores was .66, alpha for SES-SFV-lifetime was .94. Notably, item 7, completed vaginal rape, was accidentally mis-programmed and not administered during this study.

The CTQ is a self-report measure that yields information on the severity of childhood experiences of abuse and neglect operationalized as experiences before 14 and "when you were growing up". The scale has adequate psychometric properties and is recommended for research purposes because of its brevity and reliability (Feindler, Rathus, & Silver, 2003; Roy & Perry, 2004). The sexual abuse, physical abuse, and emotional abuse short version subscales were used for this study, each scale consists of five items and has a Cronbach's alpha of .85 or above (Feindler et al., 2003). Cronbach's alpha for the CTQ total scale was .92 in this sample; CTQ subscale alphas ranged from .88 to .96.

The CTS2 is a 78 item questionnaire that assesses the degree of physical aggression, sexual aggression, psychological aggression, reasoning and negotiation, used

by respondents and their current intimate partner or most recent partner, to deal with conflicts in relationships. This measure is widely used to assess physical assault (Hines & Saudino, 2003). Recent research has also indicated it may be useful in detecting sexual assault within intimate relationships (White, McMullin, Swartout, Sechrist, & Gollehon, 2008). Both the SES-SFV and CTS2 were utilized to assess sexual victimization in this study as recent research including data collected in our laboratory indicates that the CTS2 identifies as many and possibly even more cases than the SES-SFV (R. E. Anderson & Cahill, 2014). The CTS2 scale is unique in assessing a range of both positive and negative conflict negotiation behaviors and severity. This instrument assesses these behaviors through paired items such that, for each item, respondents indicate whether they or their partner has engaged in the behavior and is also assessed for frequency in the past year. The forced condom use item was not included in this study to identify sexual violence¹. Cronbach's alpha for the CTS2 sexual violence subscale in this sample was .52, for the physical aggression subscale alpha was .68.

The ACQ is a 21-item measure that assesses the context of sexual assault situations such as relationship to the perpetrator, drug and/or alcohol consumption at the time of the event, the gender of the perpetrator, et cetera. Only participants with a history of victimization were administered the ACQ; notably, many participants opted to not complete the ACQ and complete ACQ data is available for only $n = 15$ participants. Because the ACQ is designed to assess the characteristics of an assault event and is not continuously scored, Cronbach's alpha was not calculated.

Interpersonal and Coping Skills Questionnaires. Interpersonal skills were assessed using the Inventory of Interpersonal Problems-32 (IIP-32: Barkham, Hardy, & Startup,

2011), coping skills via the Brief COPE (Carver, 1997), tendency towards self-blame using the Behavioral and Characterological Self-Blame Scale (BCSB: O'Neill & Kerig, 2000), and self-esteem using The Rosenberg Self Esteem Scale (Rosenberg, 1989). The IIP-32 is a measure of trait difficulties in interpersonal skills. Respondents were asked to rate for each item the extent to which that skill has ever been a problem in respect to interacting in a significant relationship by using a 0 (Not at All) to 5 (Extremely) rating scale. In this sample, Cronbach's alpha for the IIP total score was .92, subscale alphas ranged from .53 to .86. The Brief COPE uses 21 items to assess the degree to which participants engage in a variety of possible coping strategies using a scale from 1 (I haven't been doing this at all) to 4 (I've been doing this a lot). Example items are: "I've been accepting the reality of the fact that it has happened", and "I've been expressing my negative feelings". The Brief COPE items can be categorized into two main themes, active or avoidant coping, examples of avoidant coping include using distraction or substances to cope. In this sample, Cronbach's alpha for COPE – active was .92, for COPE – avoid alpha was .64. The BSCB assessed self-blame by asking participants to rate a series of their behaviors in relation to receiving unwanted sexual attention on a scale of 1 (strongly disagree) to 5 (strongly agree). Example items include: "This type of experience happened to me because I don't deserve better" and "This type of experience wasn't caused by anything I did". The BCSB items can be grouped into two categories, behavioral self-blame and characterological self-blame; Cronbach's alpha for these scales were .72 and .60, respectively in this sample. The Rosenberg Self Esteem Scale (ROSEN) consists of ten items that respondents rated on a four point scale of strongly disagree (0) to strongly agree (3). Cronbach's alpha for the ROSEN was .30 in this

sample. Due to poor internal reliability in the present sample the ROSEN was not utilized in any analyses.

Behavioral Response to Threat Task and Questionnaires

Two standard battery questionnaires were modified for administration during the threat response task and two additional emotion state questionnaires were administered. Additionally, questionnaires included as part of the threat response task were administered in a fixed order (see Table 2 above).

Behavioral Responses and Barriers to Response. The specific type of hypothetical behaviors participants would select in response to the threat stimulus were assessed using three specific items created by this investigator and the Behavioral Response Questionnaire, in that order (BRQ: Nurius et al., 2000). Immediately after hearing the stimulus, participants were asked an open-ended question to ascertain whether they felt the stimulus was in fact threatening enough to warrant a response, “Putting yourself in Jenny’s position [the woman in the recording], how do you think or feel about this date right now?” This item was followed by similar item but including the phrase “risk or lack of risk” as the focal point. The final risk perception item before the BRQ mirrored the second item, “How do you think or feel about the risk or lack of risk to yourself on this date at this point?” with the forced choice response format, “yes, I am at risk; no, I am not at risk; unsure”. These questions were added in order to obtain an estimate of risk perception and allow for identification of participants who may be similar to the minority of women identified in prior research who choose not to respond to threats. The administration of the BRQ was slightly modified from its original format for the threat task administration by altering verb tenses to reflect a present threat. Additionally,

participants were asked to indicate the five behaviors they judged to be the most effective for responding to the stimulus situation and rank them in the order they would undertake those behaviors. The BRSA was administered immediately after the BRQ and the verb tenses were similarly altered to reflect a present threat.

Emotion Questionnaires. The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), and the Responses to Script Driven Imagery Scale (RISDIS; Hopper, Fewen, Sack, Lanius & van der Kolk, 2007) were administered as part of the behavioral response to threat task to assess specific emotional reactions. The PANAS assesses current emotions by having participants rate a list of emotions from 1 (slightly or not at all) to 5 (extreme). Participants completed the PANAS twice, once immediately before beginning the behavioral response task and again immediately after completing the behavioral response task. The PANAS can be reduced to the three following subscales and their corresponding Cronbach's alphas in this study: Positive Affect (PA) = .91, Negative Affect (NA) = .76, and Approach (AP) = .65. The Approach subscale is composed of items from both the PA and NA scales to measure respondent's approach/withdrawal orientation to their present emotional state (Leue & Beauducel, 2011). Affect differential scores were also calculated by subtracting PANAS pre affect scores from PANAS post affect scores for each type of affect. Affect differential scores estimate the participant's ability to regulate affect post task. The RISDIS is used to assess participant's reactions to trauma scripts based on their own real life events while participating in neuroimaging studies. The RISDIS utilizes four items to assess the degree of dissociation participants experienced while exposed to the stimulus. To adapt the RISDIS to this study the instructions were modified to state, "during the audio

recording”; otherwise the items remained the same. Cronbach’s alpha for the RISDIS in this sample was .54.

Behavioral Response to Threat Task. Behavioral response to threat was evaluated using a validated analog behavioral task (Marx & Gross, 1995) that our laboratory has used in prior research (R. E. Anderson & Cahill, in press). In the behavioral response to threat task, participants were asked to listen to an audio recording created by trained actors that portrays a couple returning from a date at the movies. The scenario begins with pleasant conversation and mutual kissing but quickly escalates to violent acquaintance rape. Participants were asked to imagine themselves in the scenario. In the present study the recording ends at an investigator determined level indicative of moderate-high threat. Specifically, the man in the recording has three times crossed the woman’s explicitly expressed boundaries and she is angrily admonishing him. After the stimulus ends participants were asked to complete the task and questionnaires in the following order: PANAS (pre-task), TASK, BRQ, BRSA, PANAS (post-task). Computer software was used to play the audio recording and record the latency or whether participants end the recording early. Two participants ended the recording early; recording latency data was missing for nine participants.

Procedures

Screening/Recruitment. Eligibility for the study was determined using a web-based screening questionnaire. All potential participants completed the CTQ and a modified version of the SES-SFV. Any participants who indicated they had experienced at least two sexual victimizations were given a sign up code and directions to sign up for the study on SONA. Using a random number generator a percentage (e.g., 20-50%) of

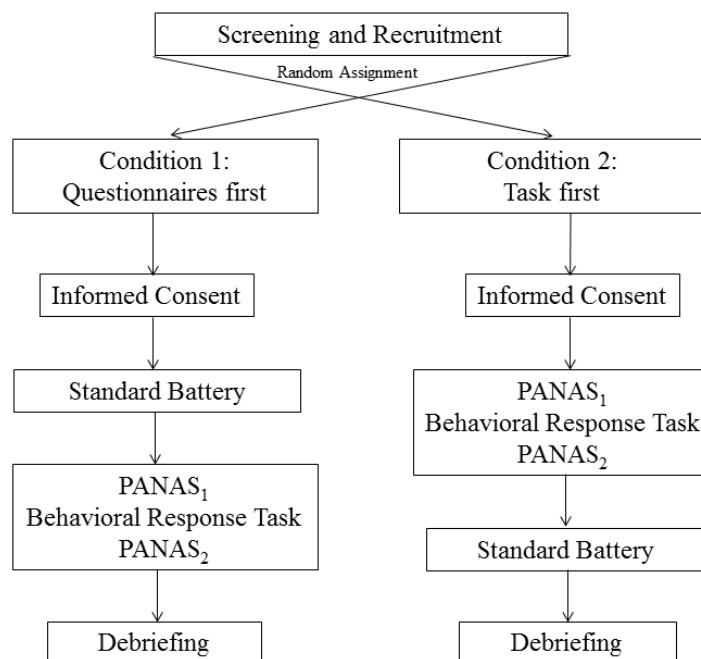
participants who indicated they have no history of sexual victimization were given a sign up code and directions to sign up for the study on SONA with the goal of recruiting non-victims to repeat victims at a rate of 1.5:1. Thus, the percentage invited for the non-victim group was adjusted over the course of the study based on participant flow. Due to the anticipated difficulties of recruiting the victim group, procedures favored recruitment for this group. These procedures combined with rough epidemiological estimates of revictimization, and the increased likelihood of victims participating compared to non-victims (58% of eligible victims signed up vs. 26% of eligible non-victims), lead to the over-recruitment of the repeat victim group.

Study Appointment. The flow of events is summarized in Figure 2. After the online screening, participants completed the remainder of the study at individual appointments in a private room with the help of female research assistants. At the appointment, participants completed the following study tasks: informed consent; standard battery questionnaires in a randomized order; the first PANAS, the behavioral response to threat task, the second PANAS; and debriefing. Participants were assigned to one of two study conditions in which the order of the questionnaire battery and the behavioral response to threat task was counterbalanced in order to examine and control for any sensitization effects that completing one task (e.g., completing questionnaires about sexual violence) may have on the subsequent task (e.g., completing the behavioral response task) occur. After completing informed consent, participants were provided with a laptop, an intercom, and instructions on how to complete study tasks on their own. The intercom was provided so that participants could easily ask the research assistant for help at any time. The flow of events is summarized in Figure 2.

Debriefing. The debriefing procedure utilized in this study was based on the Malamuth and Check's (1984) method and has been used successfully in prior research by this investigator (R. E. Anderson & Cahill, *in press*). The debriefing provided participants the opportunity to give feedback about the study and included a verbal review by the experimenter of the debriefing materials. The debriefing materials included information about sexual assault that emphasized the falsehood of several rape myths possibly insinuated in the recording, reinforced the lack of blame for victims, and provided resources for victims of sexual assault in the community. A written copy was provided to all participants.

Figure 2

Study Tasks and Order



Results

Questionnaire scores were determined using the instructions provided by the authors unless otherwise noted. Syntax files were developed to permit computer scoring of the questionnaires in order to eliminate human scoring errors and experimenter bias. Analyses were completed using SPSS 20.0 and power analyses were computed using G*Power 3.1.9.2. In the following analyses victimization history was coded for analysis based on data from the CTQ, the SES-SFV, the CTS2¹ and the trauma assessment general ending question, “please indicate how many separate or discrete [unwanted sexual experiences] have occurred during your lifetime” to create a continuous frequency variable. Then codes to designate group status for the three groups were computed from this continuous variable. Separate 2x2 ANOVAs and cross-tabulations were computed to examine effects of counterbalance condition (task first/questionnaire first) and victimization group (repeated/none) and their interaction on all dependent variables. Effects of counterbalance condition were significant for BRSA-past scores such that when questionnaires were presented first participants had higher BRSA-past scores. As such, counter-balance order was included in analyses involving the primary aims of the study or when the analysis included BRSA variables.

Intercorrelations among the main study measures are presented in Table 3. Notably, victimization history frequency was correlated only with characterological self-blame. Additionally, although the BRQ three subscale structure was designed utilizing factor analyses, all three scales were inter-correlated with extremely high correlations between the BRQ-diplomatic and immobile scales. BRQ-diplomatic and immobile scores were also correlated with avoidant coping.

Table 3

Intercorrelations Among Main Study Measures, N = 57

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Number assaults	—	-.06	-.11	-.13	.12	.06	.31	-.16	-.00	.23	-.04	-.16	.12	.04
2. BRQ-assertive		—	.28	.30	-.33	-.24	-.10	.06	.14	.20	-.02	.06	-.01	.05
3. BRQ-diplomatic			—	.96	-.05	.10	.01	.02	.16	.30	.21	.00	.15	-.13
4. BRQ-immobile				—	-.01	.16	.03	.02	.11	.30	.26	.04	.16	-.17
5. IIP-32					—	.39	.18	.36	-.26	.14	.19	-.17	.17	-.11
6. BCSB - behavioral						—	.63	.27	.03	.38	.36	.10	.15	-.20
7. BCSB-character							—	.41	-.04	.44	.21	-.04	.33	-.26
8. DERS-total								—	-.32	.37	.24	-.36	.41	-.11
9. COPE-active									—	.21	-.05	.18	-.27	.11
10. COPE-avoidant										—	.15	-.11	.16	-.09
11. RSDIS											—	.01	.42	-.38
12. Positive Affect												—	.05	-.56
13. Negative Affect													—	-.81
14. Approach Affect														—

Note. Bolded values are significantly correlated at $p < .05$

Descriptive Results.

Victimization history. All types of abuse including sexual, physical and emotional were prevalent in the sample, see Table 4. Notably, the majority of participants in the repeated sexual victimization group also reported other types of violence: 77.8% reported childhood emotional abuse, 48.9% reported childhood physical abuse, 86.7% reported emotional abuse in adult intimate partnerships and finally, 22.2% reported physical abuse in adult intimate partnerships. Of the 34 participants in the repeated sexual victimization group who reported experiencing sexual violence on the SES-SFV, nearly half reported

experiencing three or more different types of sexual victimization. Following the SES-SFV scoring procedures, participants in the repeat victim group were coded following the highest level of sexual victimization experienced.

Remarkably, participants were mostly categorized in the most severe level, rape or attempted rape, $n = 25$ or 55.6% of the repeat victim group, two participants were classified in the sexual coercion category and 5 participants were categorized in the unwanted sexual contact category.

Notably, this data is likely an underestimate as SES-SFV vaginal rape item was not administered and thus the extent of vaginal rape was not completely assessed during the laboratory appointment. The non-victim group also reported significant levels of childhood abuse, 33.3% reported emotional and physical abuse, 66.7% reported emotional abuse in adult intimate partnerships, and finally, 16.7% reported physical abuse in adult intimate partnerships.

Primary Aim 1. To evaluate the effect of victimization history while controlling for order of presentation separate 2 (victimization history: repeated vs. none) X 2 (counter-balance order: task first vs. standard battery first) analyses of variance (ANOVAs) were conducted on the three BRQ response style subscales. Means and standard errors are displayed in Table 5. The ANOVA results are displayed in Table 6 and show a significant ($p < .05$) effect for victimization history on diplomatic and immobile style behavioral responses, but not assertive responses. Non-victims had lower scores on both scales with effect sizes in the moderate – large range. No significant effects were found for counterbalancing or the victimization X counter-balance order interaction. Follow-up one way ANOVAs were conducted to examine the effect of

severity of sexual victimization history follow SES-SFV category scores on behavioral responses; none were significant.

Table 4
Abuse History and Group Status

	Non-Victim (<i>n</i> = 12)	Repeated Victim (<i>n</i> = 45)	Single Victim (<i>n</i> = 3)	Entire Sample (<i>n</i> = 60)
<i>Childhood Trauma Questionnaire (CTQ) (pre age 14)</i>				
Childhood emotional abuse	<i>n</i> = 4 <i>M</i> = 1.1 <i>SD</i> = 1.7	<i>n</i> = 35 <i>M</i> = 6.29 <i>SD</i> = 6.28	<i>n</i> = 3 <i>M</i> = 6.67 <i>SD</i> = 9.87	<i>n</i> = 41 <i>M</i> = 5.27 <i>SD</i> = 6.14
Childhood physical abuse	<i>n</i> = 4 <i>M</i> = 1.2 <i>SD</i> = 2.0	<i>n</i> = 22 <i>M</i> = 2.56 <i>SD</i> = 4.05	<i>n</i> = 3 <i>M</i> = 5.33 <i>SD</i> = 8.39	<i>n</i> = 28 <i>M</i> = 2.42 <i>SD</i> = 4.01
Childhood Sexual abuse	<i>n</i> = 0	<i>n</i> = 20 <i>M</i> = 3.89 <i>SD</i> = 5.84	<i>n</i> = 2 <i>M</i> = 0.67 <i>SD</i> = 0.58	<i>n</i> = 22 <i>M</i> = 2.95 <i>SD</i> = 5.31
<i>Revised Conflict Tactics Scale (CTS2) (past year only)</i>				
IPV - Emotional Abuse	<i>n</i> = 8 <i>M</i> = 8.4 <i>SD</i> = 12.3	<i>n</i> = 39 <i>M</i> = 20.44 <i>SD</i> = 24.52	<i>n</i> = 2 <i>M</i> = 15.33 <i>SD</i> = 20.79	<i>n</i> = 49 <i>M</i> = 17.78 <i>SD</i> = 22.69
IPV - Physical Abuse	<i>n</i> = 2 <i>M</i> = 0.2, <i>SD</i> = 0.4	<i>n</i> = 10 <i>M</i> = 2.96 <i>SD</i> = 9.60	<i>n</i> = 0	<i>n</i> = 12 <i>M</i> = 2.25 <i>SD</i> = 8.38
IPV – Sexual Abuse	<i>n</i> = 0	<i>n</i> = 22 <i>M</i> = 4.78 <i>SD</i> = 13.35	<i>n</i> = 0	<i>n</i> = 22 <i>M</i> = 3.58 <i>SD</i> = 11.72
<i>Sexual Experiences Scale - Short Form Victimization (SES-SFV) (past year and post age 14)</i>				
Unwanted Sexual Contact	<i>n</i> = 0	<i>n</i> = 26	<i>n</i> = 2	<i>n</i> = 27
Oral Sex ^a	<i>n</i> = 0	<i>n</i> = 21	<i>n</i> = 1	<i>n</i> = 21
Anal Sex ^a	<i>n</i> = 0	<i>n</i> = 12	<i>n</i> = 0	<i>n</i> = 12
Attempted Vaginal ^b	<i>n</i> = 0	<i>n</i> = 17	<i>n</i> = 0	<i>n</i> = 17
Types of SES-SFV Sexual Violence	<i>n</i> = 0	1 type, <i>n</i> = 9 2 types, <i>n</i> = 10 3+ types, <i>n</i> = 15	<i>n</i> = 1	1 type, <i>n</i> = 10 2 types, <i>n</i> = 10 3+ types, <i>n</i> = 15
Frequency of SES-SFV Sexual Victimizations	<i>n</i> = 0	<i>n</i> = 13 Range: 1 – 230 <i>M</i> = 32.71 <i>SD</i> = 58.15	<i>n</i> = 0	<i>n</i> = 13 <i>M</i> = 21.38 <i>SD</i> = 49.15
Have ever been raped? YES	<i>n</i> = 0	<i>n</i> = 15	<i>n</i> = 0	<i>n</i> = 15
Self-reported number separate incidents	<i>n</i> = 0	<i>n</i> = 24 <i>M</i> = 5.16 <i>SD</i> = 9.99	<i>n</i> = 2 <i>M</i> = 0.67 <i>SD</i> = 0.58	<i>n</i> = 26 <i>M</i> = 3.90 <i>SD</i> = 8.90

Note. Questionnaires are listed in order of administration. ^a Combines the attempted and completed items. ^b Because the completed vaginal rape item was not administered this category likely underestimates this type of sexual assault.

Table 5

*Descriptive Statistics for Primary Aim,
Group Differences in Behavioral Response Style, N = 57*

	Victimization History		Counterbalance Condition	
	Non-Victim <i>M, SE</i>	Multiple Victim <i>M, SE</i>	Task First <i>M, SE</i>	Questionnaire First <i>M, SE</i>
BRQ – assertive	10.50, 2.12	14.51, 1.03	13.35, 1.43	11.66, 1.88
BRQ - diplomatic	10.44, 1.55	14.85, 0.75	13.12, 1.04	12.16, 1.37
BRQ - immobile	11.25, 1.68	15.97, 0.82	14.73, 1.13	12.49, 1.49

Note. Statistically significant differences are bolded.

Table 6

*Summary Statistics Primary Aim,
Group Differences in Behavioral Response Style, N = 57*

Dependent Variable	Main Effect – Victimization History	<i>p</i>	ES(<i>f</i>), Power	Main Effect – Condition	<i>p</i>	Interaction	<i>p</i>
BRQ – assertive	F(1,53) = 2.89	.10	.23, .40	F(1,53) = .52	.48	F(1,53) = .59	.45
BRQ - diplomatic	F(1,53) = 6.56	.01	.35, .74	F(1,53) = .31	.58	F(1,53) = .29	.60
BRQ - immobile	F(1,53) = 6.38	.02	.35, .74	F(1,53) = 1.44	.24	F(1,53) = .46	.50

Note. Statistically significant differences are bolded. ES = Effect size. Power is post-hoc or achieved power.

Primary Aim 2. To evaluate whether past behavioral responding was related to behavioral responding in the task, bivariate correlations were computed for women with a history of victimization, $n = 45$. The correlations are presented in Table 7. Task assertive behavior was moderately, positively correlated with past assertive behavior ($r = .51$). The corresponding correlations for diplomatic and immobile behavior were also positive in direction, but small in magnitude and non-significant. Past assertive behavior was also moderately correlated in a positive direction with task immobile responding ($r = .33$) and negatively correlated with task diplomatic responding ($r = -.34$). Task diplomatic

responding was highly correlated with task immobile responding ($r = .96$) as was past diplomatic responding with past immobile responding ($r = .99$).

Table 7

Intercorrelations for Past and Task Behavioral Responses for Repeatedly Victimized Women (N = 45)

Behavioral Response Style	1	2	3	4	5	6
1. Task – Assertive	—	.19	.23	.51**	-.02	-.03
2. Task – Diplomatic		—	.96**	-.34*	.23	.21
3. Task – Immobile			—	.33*	.25	.25
4. Past – Assertive				—	.21	.19
5. Past – Diplomatic					—	.99**
6. Past - Immobile						—

* $p < .05$, ** $p < .01$

The relationship between past psychological barriers and task psychological barriers as measured by the BRSA-past and BRSA-task for repeatedly victimized participants was explored in each counterbalance condition separately using bivariate correlation. The only significant correlation consistent for both conditions was that past psychological barriers of fear were significantly, and positively correlated with psychological barriers of fear during the task, $r(21) = .56, p = .01$ and $r(23) = .50, p = .01$.

Secondary Aim 1. A correlation matrix was computed to examine possible relationships between behavioral responses in the task and factors predicted by the ecological framework theory such as interpersonal skills, coping style, emotion dysregulation, present emotional state, and present psychological barriers, see Table 3, additional bivariate correlations were computed to additionally examine subscales of the aforementioned measures. Assertive responding in the task was negatively correlated with interpersonal difficulties (IIP-total) and specific IIP subscales including difficulty being assertive, and being too interpersonally involved. Assertive responding was positively correlated with beginning the task with a higher approach orientation

differential. Diplomatic responding in the task was positively correlated with avoidant or substance use coping. Immobile responding in the task was positively correlated with avoidant or substance use coping and greater dissociation during the task. Diplomatic and immobile responding were positively correlated with unsure of self-psychological barriers.

Three separate hierarchical regressions utilizing the two experimental groups, $N = 57$, were computed to examine the predictive validity of these factors on behavioral response style. For each of the following regressions, frequency of victimization history, counterbalance condition and the victimization history X counterbalance condition interaction were entered in the first block followed by trait psychological factors (step 2) and then state psychological factors (step 3) as determined significant in the previous correlational analysis. Summary statistics are displayed in Tables 8 (assertive responding), 9 (diplomatic responding), and 10 (immobile responding). For assertive responding, interpersonal skills and approach (PANAS-AP) differential were significant predictors of assertive responding during the task; this model accounted for 30% of the variance with an effect size of .52 (large). No significant predictors were identified for diplomatic or immobile responding.

Table 8
Hierarchical Regression Analysis Summary for Psychological Factors Predicting Task Assertive Responding, N = 57

Step and Predictor Variable	<i>B</i>	<i>SE B</i>	β	R^2	ΔR^2	<i>ES f</i> ² & achieved power
Step 1:						
Counterbalance Condition	.11	2.29	.01	.05	.05	
Victimization History	1.10	1.59	.13			
Interaction	-3.61	5.24	-.13			
Step 2:						
Counterbalance Condition	-.54	2.17	-.25	.22*	.17*	
Victimization History	1.94	1.51	1.29			
Interaction	-3.21	4.88	-.66			
IIP – involved	-.39	.28	-1.39			
IIP – total	-.49	.25	-1.95			
Step 3:						
Counterbalance Condition	.14	2.10	.01	.30*	.08*	.52, .98
Victimization History	1.89	1.44	.22			
Interaction	-2.16	4.69	-.08			
IIP – involved	-.28	.27	-1.15			
IIP – total	-.57	.24	-.34*			
PANAS – AP differential	.50	.23	.30*			

* $p < .05$, *ES* = Effect size f^2

Table 9
Hierarchical Regression Analysis Summary for Psychological Factors Predicting Task Diplomatic Responding

Step and Predictor Variable	<i>B</i>	<i>SE B</i>	β	R^2	ΔR^2
Step 1:					
Counterbalance Condition	-.04	1.51	-.00	.11	.11
Victimization History	1.74	1.04	.28		
Interaction	-1.84	3.44	-.09		
Step 2:					
Counterbalance Condition	-.44	1.49	-.04	.16*	.05
Victimization History	1.60	1.03	.25		
Interaction	-.87	3.42	-.04		
Avoidant/Substance Coping	.35	.19	.24		
Step 3:					
Counterbalance Condition	-.28	1.51	-.03	.18	.01
Victimization History	1.45	1.04	.23		
Interaction	-1.10	3.43	-.05		
Avoidant/Substance Coping	.30	.20	.20		
Unsure Cognitions	.17	.18	.13		

* $p < .05$

Table 10
Hierarchical Regression Analysis Summary for Psychological Factors Predicting Task Immobile Responding

Step and Predictor Variable	<i>B</i>	<i>SE B</i>	β	R^2	ΔR^2
Step 1:					
Counterbalance Condition	-.98	1.64	-.09	.11	.11
Victimization History	1.73	1.13	.25		
Interaction	-2.52	3.74	-.12		
Step 2:					
Counterbalance Condition	-1.44	1.62	-.13	.17*	.06
Victimization History	1.57	1.11	.23		
Interaction	-1.41	3.69	-.06		
Avoidant/Substance Coping	.40	.21	.25		
Step 3:					
Counterbalance Condition	-.68	1.97	-.06	.21	.04
Victimization History	1.35	1.12	.20		
Interaction	-1.72	3.69	-.08		
Avoidant/Substance Coping	.31	.22	.20		
Unsure Cognitions	.12	.21	.09		
Task Dissociation	.22	.19	.16		

* $p < .05$

Exploratory Aims. Related to the last aim, descriptive analyses were conducted to investigate patterns in the sequence and types of behaviors participants selected during the task. Fifty participants provided at least one rank order and 42 participants provided at least three ranks on the BRQ; participants varied in the number of ranks provided. Participants were most likely to select a diplomatic behavior for their first behavior, $n = 27$, followed by assertive, $n = 20$; few participants selected an immobile behavior as their first behavior, $n = 3$. Figures 3 – 5 present the top three ranks for participants for those whose first response was assertive, diplomatic, or immobile.

Participants who selected assertive behavior first were equally split between selecting an assertive or a diplomatic behavior as their second selection (Figure 3). Participants who also identified an assertive behavior as their second selection were about equally divided in identifying either a third assertive response or a diplomatic response as their third selection. Similarly for those who identified a diplomatic response as their

second selection, participants were about equally divided in identifying either another assertive or another diplomatic response as their third selection. Of participants who selected a diplomatic response as their first behavior (Figure 4), the majority also selected another diplomatic behavior as their second selection. Similarly, of those who selected a diplomatic response for both of their first two responses, the vast majority also selected a diplomatic response for their third selection. Of the three participants who selected an immobile response as their first rank (Figure 5), one subsequently selected assertive responses for the second and third ranks; the remaining two participants selected diplomatic responses for their second and third ranks.

From these figures, the investigator identified five patterns of particular interest that seemed to capture the majority of responses: all assertive ($n = 4$), start assertive then diplomatic or immobile ($n = 10$), start diplomatic then assertive ($n = 6$), all diplomatic ($n = 12$), start immobile ($n = 3$). These five patterns account for 70% of participants who provided rank data. Notably, only one third of participants, $n = 16$, chose the same response style (all assertive or all diplomatic) across all three ranks. Additionally, of participants who started assertive, the majority downgraded to a less effective response for their second behavior. Cross-tabulations and chi-squares were computed to analyze whether victimization group impacted ranking pattern, results were non-significant.

Table 11 shows the top five BRQ items most frequently ranked as a first response and rated “somewhat likely” or greater. The two most common first behaviors were, “Tell him clearly and directly that I wanted him to stop” ranked by $n = 13$ and “Jokingly tell him he is coming on too strong” ranked by $n = 12$. Cross-tabulations were computed

to analyze whether victimization group influenced likelihood of ranking specific BRQ items, results were non-significant.

Figure 3

Assertive Start Ranking Patterns, N = 17 Complete Pathways

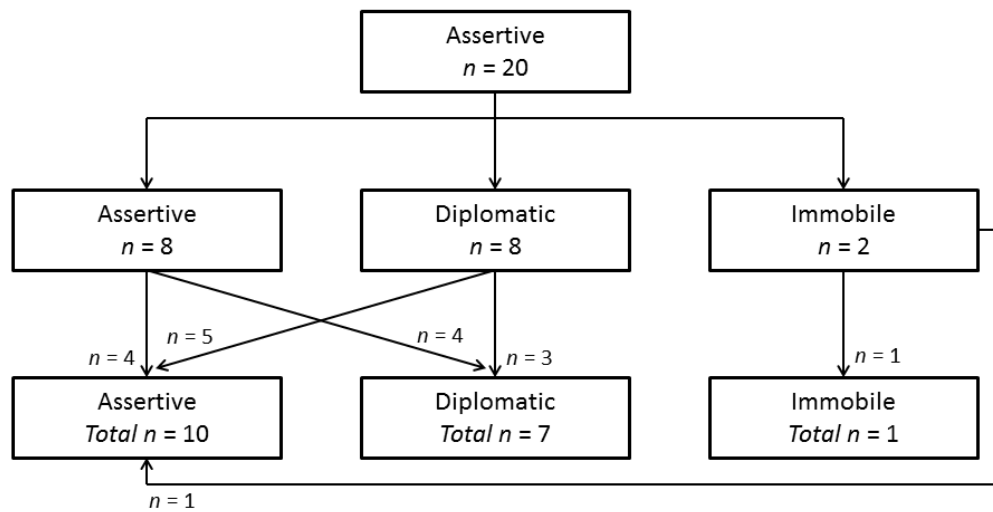


Figure 4

Diplomatic Start Ranking Patterns, N = 22 Complete Pathways

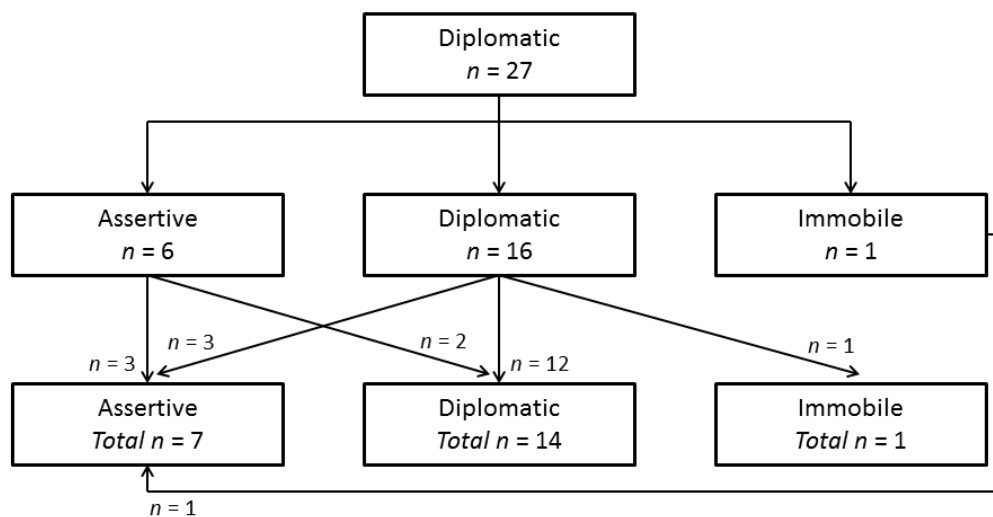


Figure 5

Immobile Start Ranking Patterns, N = 3 Complete Pathways

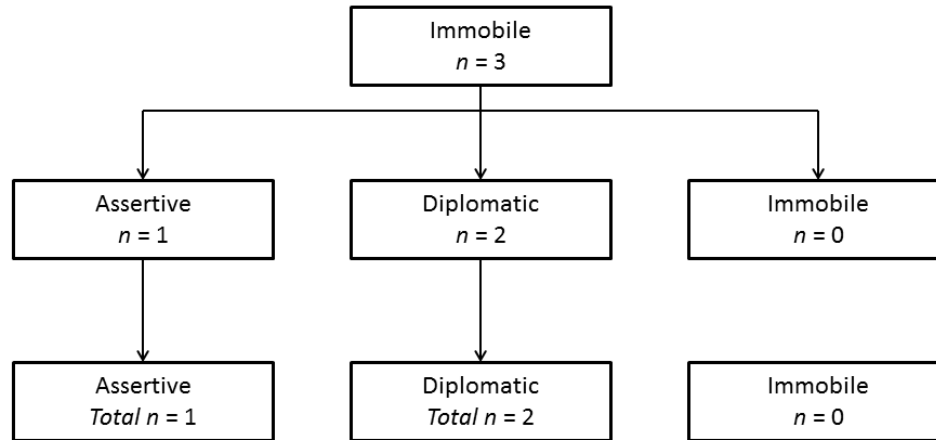


Table 11

Selected Specific BRQ items and Rank Data

BRQ item and scale	Number of times ranked #1	Number of times ranked in top three	Range of ranks
1. Jokingly tell him that he is coming on too strong (D)	12	15	1 - 11
2. Nicely or apologetically tell him that I didn't want to have sex (D)	5	15	1 - 12
8. Tell him I had to leave (D)	5	14	1 - 8
9. Tell him that I liked him, or found him attractive, but that I wasn't ready for this (A)	5	18	1 - 9
13. Tell him clearly and directly that I wanted him to stop (A).	13	18	1 - 12

Finally, an exploratory 2 (non-victim vs. repeat victims) by 2 (pre vs post) repeated measures ANOVA was conducted to examine whether there were group differences in emotional response to completing the behavioral response task as measured by the PANAS. Results indicate a significant effect for change in positive affect for time

with positive affect decreasing at the second assessment, $F(1, 47) = 15.41, p < .001$ and no effect for group or time X group interaction. Similar results were seen for negative affect, a significant effect for time such that negative affect increased at the second assessment $F(1, 47) = 8.15, p < .006$ with no effect for group or time X group interaction. Additionally, no effects were detected regarding changes over time, group differences, or the interaction of time X group in AP.

Discussion

The goal of this study was to explore the relationship between the experience of repeated sexual victimization and behavioral response to threat within the ecological framework theory utilizing an analogue self-defense task to elicit behavioral responses. This study sought to utilize standardized measurement procedures to learn more about women's behavioral responses, the target behavior of feminist risk-reduction interventions for sexual assault. By recruiting participants with either a) no history of sexual victimization or b) a history of repeated sexual victimization and assigning all participants the same analogue task differences in behavioral responses would be magnified and easily compared between groups.

Consistent with hypotheses of the primary aim, predicting that women with a history of repeated victimization would be more likely to hypothetically engage in diplomatic and immobile style responses, significant differences were found between the two groups in two specific behavioral response styles, diplomatic and immobile coping styles. These response styles include behaviors such as trying to distract the aggressor and freezing, respectively. Women with a history of victimization hypothetically endorsed these styles of behavioral response more than women without a history of

victimization; notably, these are less effective means of coping with threat and in some research these behavioral response styles were associated with increased likelihood of experiencing rape (Clay-Warner, 2002). Remarkably, joking about stopping the behavior was one of the most frequently selected behaviors across participants who provided ranking data (N = 50), indicating this type of response may be common for all college aged women.

This study also found that the assertive self-defense behaviors selected during the analogue task were moderately correlated with assertive behaviors utilized in prior assaults; learning or utilizing assertive behavior early may facilitate ease of enacting these behaviors later. This relationship was not consistent for diplomatic or immobile style behaviors; however, the context of the specific assault may change behavior and the context of past assaults for study participants may have been too variable to examine this relationship adequately.

The secondary aim of this study was to explore how factors predicted by ecological framework theory were related to behavioral response style in the analogue task. This study found that greater interpersonal skills and approach orientation were significant predictors of assertive responding during the analogue task. This finding highlights a potential avenue for future risk-reduction interventions; it may be that an interpersonal skills intervention is necessary for some women to utilize the benefits of a feminist self-defense intervention. This is especially promising because some empirically grounded interpersonal skills interventions already exist and could potentially be implemented or adapted with less effort than creating a new intervention. Interventions such as dialectical behavior therapy (DBT) emphasize the intertwining nature of emotion

and interpersonal skills; such an approach would easily incorporate the results identified in this study that emotional responses, i.e., approach orientation or arousal and ability to downregulate, and interpersonal responses, like assertive behavior are linked.

Furthermore, interpersonal skills and feminist self-defense interventions have themes like determining personal values and needs in common that would easily facilitate transition from one intervention to the other.

No significant predictors were identified for diplomatic or immobile responding although emotion regulation, relationship expectancies, interpersonal skills, and other common reported psychological difficulties and barriers were explored. It is unclear why interpersonal skills were a predictor for assertive responding but not other styles of behavioral responses. Additionally, this study did not find group differences in emotional responding during the task as measured by the PANAS, participants in general experienced a decrease in positive affect and an increase in negative affect over the course of the behavioral response task regardless of group status. It is unclear whether this lack of finding is due to a true lack of group differences, or the small number of participants in the control group ($n = 12$), or that emotional responses to the task are more tied to psychopathology rather than victimization history. However, because diplomatic and immobile style responses are associated with experiencing rape and are commonly utilized (Masters et al., 2006; Anderson et al., *unpublished*), future research should further explore the factors that facilitate these behaviors to design interventions to modify or deter their use in risky situations. For example, it is possible that cultural/familial values about gender may be predictors of diplomatic and immobile style behaviors.

Exploring the sequence of behaviors selected during the task, most participants opted for a diplomatic behavior first and consistent diplomatic behavior was the most common sequence of behaviors selected. Furthermore, most participants who started with assertive behaviors downgraded to less effective behaviors at their second hypothetical selection. Thus, it appears college women are most confident and/or comfortable hypothetically executing diplomatic style behaviors in a sexual assault threat scenario such that they are the first behaviors of choice, the most consistent behaviors, and the behaviors to which many women who start assertive subsequently revert. Thus, even in a hypothetical scenario where the psychological barriers to being assertive are likely weakened, college women are less likely to hypothetically engage in effective self-defense behavior. This is particularly alarming given data that diplomatic and immobile type behaviors are associated with increased rates of experiencing rape (Clay-Warner, 2002). Future research should explore how the sequence of behaviors affects the outcome of sexual assault risk situations, for example, does one have to respond assertively at the very beginning of an attack in order to reduce threat or are these behaviors effective at any point? Is an initial assertive response enough or is consistency paramount to reducing risk? Reinforcement and behavioral theory would suggest that downgrading from initially assertive behavior could potentially increase risk and that the most effective strategy to stop unwanted behavior is to intervene consistently at a level of intensity that immediately suppresses the behavior.

In sum, women with a history of repeated victimization are more likely to utilize diplomatic and immobile style behavioral responses in an analog self-defense situation. One implication of the success of this analog assessment is that this approach could be

utilized as a risk assessment to identify women at risk for sexual assault and in greater need of intervention. Prior research has found that response to analog or hypothetical tasks corresponds well to responses in real life (Turchik et al., 2007). Thus, this task may be useful as a risk assessment; women who opt for predominantly diplomatic and immobile style responses would be identified as at-risk and directed towards further risk reduction intervention such as interpersonal skills training and/or feminist self-defense.

Although this study did not identify predictors of diplomatic or immobile behavioral responses it did identify interpersonal difficulties and approach orientation as predictors of assertive responses. These findings indicate interpersonal skills intervention may be a possible target for future sexual assault risk reduction interventions. It could be that young, college aged women do not have the interpersonal skills to overcome psychological barriers such as concerns about relationships to utilize feminist self-defense skills like assertively saying no. Finally, this study found that college women in general more often rated diplomatic behaviors as their first choice of response and were more likely to hypothetically employ diplomatic behaviors consistently over time.

These findings highlight a possible mechanism for repeated sexual victimization, changes in behavioral responding to threat but also note that college women in general are more likely to hypothetically utilize less effective response behaviors. In other words, the women at greatest risk for future sexual assaults are perhaps the least equipped to deal with threats thru no fault of their own and are in need of effective intervention options. It is likely that the psychological consequences of abuse limit the ability to learn or change learned behavior regarding self-worth and self-protection. However, given that college women in general hypothetically utilize less effective response behaviors it is also likely

that gender role socialization plays a part in teaching women what kinds of self-protective behavior are socially “acceptable” i.e., downplaying their own needs and feelings of discomfort. These findings also highlight a possible additional intervention route, interpersonal skills intervention for sexual assault risk reduction that could increase college women’s ability to utilize assertive behaviors in risky situations. This is a potentially powerful intervention route as empirically based interpersonal skills interventions (such as DBT) already exist and are thematically similar to feminist self-defense interventions facilitating easy implementation of an additional module of interpersonal skills intervention and transition from interpersonal skills to self-defense skills.

Limitations

The results of this study are limited by the use of selection criteria based in historical events, i.e., abuse history, and cannot provide knowledge into how prior environmental factors such as family upbringing, context of prior assaults, et cetera, may influence how participants responded in the analogue self-defense task. The results are most pertinent to the threat of date and/or acquaintance rape which is common among the college population, the population that was the focus of this study. Because college women were the participants of this study, behavioral responses described here may be most relevant to this population; women in other age groups and with greater life experience may opt for different kinds of responses. The recruitment of college women may have resulted in a sample that is more psychologically resilient and thus diminish the ability to examine factors related to difficulties in psychological adjustment that may influence behavioral responding. For example, perhaps women who experience sexual

abuse and do not persist to attending college are more likely to utilize immobile responses, which were relatively uncommon in this study making it difficult to examine factors associated with this style of response.

A few methodological aspects of this study may also limit the findings. The composition of the experimental and control groups were quite lopsided numerically with repeat victims outnumbering non-victims approximately 3:1 as detailed above in the participants section. These group numbers may have magnified responses specific to women with a history of victimization and minimized those unique to non-victims. Notably, the incomplete assessment of vaginal rape during the laboratory appointment likely underestimates the extent of sexual violence in this sample as vaginal rape is the most common form of sexual violence experienced by college women. Thus, especially in the victim group sexual violence is likely underestimated and thus analyses related to factors stemming from the severity of sexual victimization were limited methodologically. There is also the possibility that some participants identified as non-victims are in actuality victims of sexual violence although given the otherwise comprehensive nature of the sexual violence assessment, the inclusion of the vaginal rape item during screening, and the multiple opportunities for participants to identify themselves as victims (the general ending question and the SES-SFV acknowledgment item) this is considered unlikely.

Conclusions

This study indicates that women with a history of sexual victimization engage in different behavioral responses than women with no prior experiences of sexual victimization. Specifically, women with a history of repeated sexual victimization were

more likely to hypothetically utilize ineffective behaviors such as joking about the threat or drinking alcohol. This is likely because the negative psychological sequelae of their prior experiences of sexual victimization changed their abilities/skills such that they are less likely to have developed the skills to effectively engage in threat, having previously been abused. This points to behavioral response as a possible mechanism of repeated sexual victimization as specific kinds of behavioral responses are associated with experiencing completed rather than attempted rape in epidemiological research (Clay-Warner, 2002). Future research should examine prospectively how behavioral responses elicited in the laboratory with this specific stimulus are related to responses in real life as this and/or similar paradigms could potentially be used to identify women at risk. This study also found interpersonal skills were predictive of utilizing assertive behaviors, thus, interpersonal skills are potentially potent intervention target for risk-reduction interventions. Future research should examine the effectiveness of interpersonal skills interventions for reducing violence risk and how women with a history of victimization view these interventions. As noted in the White House Council on Women and Girls Report (2014), sexual assault is a serious problem on college campus and, “Despite the important and unprecedented work being done, there is much more to do” (p. 33) for both the people who experience sexual assault and those who perpetrate it. The results of this study highlight potential areas for future sexual assault risk reduction research and intervention but notably to really change the rates of sexual violence and challenge the environments that facilitate sexual violence, research with college men regarding sexual aggression is equally important as providing empowering interventions for college women.

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Footnote

¹ The CTS2 sexual coercion scale item regarding condom use was not utilized to detect sexual assault from a partner due to its ambiguity. Including this item would identify four additional participants as victims of intimate partner violence who would not have otherwise been identified. However, all of these participants were classified in the repeated victimization group on the basis of other questionnaires; thus, their group status would not change.

CURRICULUM VITAE

RaeAnn E. Anderson

Education:

2014 – 2015 **Ann Arbor Veteran’s Administration Medical Center/University of Michigan**

Predoctoral Intern in Clinical Psychology, APA and APPIC accredited

2009 –
present

University of Wisconsin – Milwaukee (UWM), Milwaukee, WI
 Doctoral Program in Clinical Psychology, APA accredited, Member of
 The Academy of Psychological Clinical Science (APCS)
 Dissertation Defended May 2014: *Not Getting Out While There is Still
 Time? Behavioral Response to Threat as a Possible Mechanism of Sexual
 Revictimization*
 Unanimous Pass on all Preliminary Examination items, February 2013
 Master of Science, 2011 with Thesis: *Women’s Responses to Risk in a
 Date Rape Analogue Study*
 Minor: Quantitative Methods
 Cumulative GPA 3.96/4.0
 UWM Advanced Opportunity Fellowship Awardee 2012-2014
 UWM Distinguished Graduate Student Fellowship Awardee 2010-2011
 Chancellor’s Award for Outstanding Incoming Graduate Student

2005 - 09

The University of Kansas (KU), Lawrence, KS

Bachelor of Arts, Psychology

Minor in African and African American Studies

Cumulative GPA 3.93/4.0

Honors of the Highest Distinction (top 3% GPA) (equivalent to *summa
 cum laude*)

Departmental Honors with Thesis: *Neuropsychological Measurement of
 Cognitive Gains Associated with Exercise in Older Adults*

Completion of University Honors Program

Dean’s Scholar

Certifications:

Certification in Service Learning, Global Awareness & Research Experience Programs
 (KU)

HIPPA, IRB Training (UWM, San Diego State University), Responsible Conduct of
 Research (UWM)

Honors, Awards, and Scholarships:

2013 ABCT Women’s SIG Student Research Award – Honorable Mention
 Milwaukee Area Psychological Association Student Professional Award
 UWM Nominee (1 of 2) for APA Dissertation Research Award

- Wisconsin Psychological Association Graduate/Post-Doctoral Poster
Presentation Finalist
- 2012 UWM Advanced Opportunity Fellowship Award Winner
- 2011 Anxiety Disorders Association of America Graduate Poster Presentation
Finalist
- Psychology Department Nominee for UWM Advanced Opportunity
Fellowship
- 2010 UWM Distinguished Graduate Student Fellowship Awardee
Chancellor's Award for Outstanding Incoming Graduate Student - \$7000
Phi Beta Kappa Society nominee
KU Graduating Senior Scholarship - \$600
KU Psychology Department's Annual Award for Outstanding
Undergraduate Researcher
- KU nominee for national Jack Kent Cooke Graduate Fellowship
Warren E. Bottenberg Memorial Scholarship - \$500
State of Kansas Scholarship - \$1000
Dean's List
- 2008 Jessie Marie Cramer Scholarship - \$2000
Harley Nelson Departmental Scholarship - \$1200
University Women's Club Scholarship - \$1350
State of Kansas Scholarship - \$1000
Dean's List
- 2007 Dean's Scholar Program/ Dean's Scholar's Program Scholarship - \$2000
English Faculty 1925-1937 Memorial Scholarship - \$1000
State of Kansas Scholarship - \$1000
Dean's List
- 2006 University Scholar's Finalist (top 40 sophomores)
Association of University Residence Halls top GPA Commendation (1%)
State of Kansas Scholarship - \$1000
Dean's List
- 2005 University of Kansas Alumni Scholar - \$2000
Lion's Club Community Service Scholarship - \$500
Reba M. Benaka Dupree Scholarship - \$770
State of Kansas Scholarship - \$1000
Dale E. Dennis Character Award
- Grants and Competitive Applications:**
- 2013 UWM Graduate School Travel Grant - \$400
Group Development Grant for Violence Against Women Interdisciplinary
Research Group from Century for 21st Century Studies - \$300
- 2011 UWM Graduate School Travel Grant - \$400
- 2010 UWM Student Association Group Travel Grants (co-writer) \$2000
American Psychology Association (APA) Science Directorate Travel
Grant - \$325
- 2009 University of Kansas Honors Program Undergraduate Research Award -
\$750

2008 KU Women to Women Development Grant - \$400
 University of Kansas Honors Program Development Grant - \$750
 University of Kansas Honors Program Undergraduate Research Award -
 \$2500
 University of Kansas Honors Program J. Michael Young Opportunity
 Award - \$300
 KU Tuition Grant - \$8500

Training Seminars and Workshops Attended:

Working Together to Make it Better: Communities, Academics, & IRBs. (2014) Clinical & Translational Science Institute of Southeast Wisconsin/Healthier Wisconsin Partnership Program. Milwaukee, WI.

Introduction to Motivational Interviewing. (2013) Facilitator: Daniel W. McNeil. Association for Behavioral and Cognitive Therapies Annual Convention. Nashville, TN.

Virtual Webinar: Psychotropic Drug Use During Pregnancy, Postpartum & Lactation. (2013) Speakers: Lee S. Cohen, MD. & Bruce Levine, MD. Veteran's Administration Learning University. Washington, DC.

Virtual Webinar: Women's Health Emergency Care: Acute Sexual Assault. (2013) Panelists: Dr. Lisa Nocera, MD., Kelly Vance, MD., & William Alt, MD, Moderator: Aimee Sanders, MD., MPH. Veteran's Administration Learning University. Washington, DC.

APA Science Directorate Advanced Training Institute on Research Methods with Diverse Racial and Ethnic Minorities. (2010) Training Director: Frederick Leong, PhD. East Lansing, Michigan.

Mini International Neuropsychiatric Interview. (2010) Trainer: J. Janavas, MD. Milwaukee, WI.

Hamilton Rating Scale for Depression. (2010) Trainer: Paula Young, PhD. Milwaukee, WI.

Research Experience:

Publications:

Anderson, R. E. & Cahill, S. P. (2014) The Utility of the Response-Latency Paradigm for Evaluating Women's Responses to Threat. *Violence & Victims*, 29(2), 248-261.

Cahill, S. P. & **Anderson, R. E.** (2013) Treatment of PTSD: Empirically Based and Ethical Clinical Decision Making, *FOCUS: The Journal of Lifelong Learning in Psychiatry: Special Issue on PTSD*, 11(3), 362-367. Guest Editors: Rothbaum, B. O. & Ressler, K.

Ham, L. S. & **Anderson, R. E.** (2012) Spotlight on Special Interest Groups: Women's Issues in Behavior Therapy. *The Behavior Therapist*, 35(7), 131-132.

Johnson, D. K., Harsha, A., Honea, R., **Anderson, R. E.** & Burns, J. M. (2011) Neuropsychiatric personality profiles in Dementia. *Alzheimer's Disease and Associated Disorders*, 25(4), 326-332.

Johnson, D. K., Barrow, W., **Anderson, R. E.**, Harsha, A., Honea, R., & Burns, J. M. (2010) Diagnostic Utility of Cerebral White Matter Integrity in Early Alzheimer's Disease. *The International Journal of Neuroscience*, 120(8), 544-550.

Conference Presentations:

- 2014 **Anderson, R. E.** (2014, April) *Not Getting Out While There is Still Time? The Relationships Among Prior Victimization and Psychological Barriers to Performance in an Analogue Self-Defense Task.* Association of Graduate Students in Psychology Research Symposium. University of Wisconsin-Milwaukee. Milwaukee, WI.
- Voith, L. A., **Anderson, R. E.**, & Cahill, S. P. (2014, July) *The Cycle of Violence: Males' Experience of Childhood Victimization and Later Revictimization and Perpetration.* International Family Violence and Child Victimization Research Conference. Portsmouth, NH.
- 2013 Bridges, A. J., Hawkins, A. O., Hetzel-Riggin, M., Keenan, N. K., (2013, November) *Sharing Multidisciplinary Success Stories: Creating a Coordinated Community Response to Interpersonal Violence.*
- Anderson, R. E. (Moderator, Chair)** Association of Behavioral and Cognitive Therapies Annual Meeting. Nashville, TN.^a
- Anderson, R. E.**, Hernandez, J. J., Lopez, J. J., Miliston, M., Mueller, L., Nagy, G. A., Thomas, C., & Voith, L. A. (2013, July) *Advanced Opportunity Fellowship Graduate Student Panel: Advice for Future Students.* Wisconsin McNair Research Symposium. Milwaukee, WI.^a
- Anderson, R. E.** (2013, April) *What's Measurement Got to do with it?: Validity and Reliability of the Revised Sexual Experiences Survey.* Association of Graduate Students in Psychology Research Symposium. University of Wisconsin-Milwaukee. Milwaukee, WI.
- Anderson, R. E.** (2013, March) *Asking About the Worst: Why Psychometric Issues in Sexual Assault are Really Important.* Sigma Xi International Student Research Showcase.
<http://raeannthepsychologist.tumblr.com>
- Anderson, R. E.**, Chen, C., Cortes, N., Milli, J., Voith, L. A. (2013, February) *Violence Against Women, Interdisciplinary Approaches and Failure at University of Wisconsin-Milwaukee (UWM): A Discussion Panel.* Halinka Malcoe, L. (Moderator) Milwaukee Interdisciplinary Graduate Conference. Milwaukee, WI.^a
- Anderson, R. E.**, Blazek, N., Calhoun, C.D., Feinstein, B. (2013, January) *Multi-culturally Competent Clinicians, The Trainee Perspective: CUDCP Student Report.* Craighead, L. E., (Chair) Council of University Directors of Clinical Psychology Midwinter Meeting. Austin, TX.^a
- 2012 **Anderson, R. E.**, Blazek, N., Docherty, A., Meyerson, D. (2012, January) *Student and Faculty Perceptions of Utilization, Costs, and Benefits of New Media in Clinical Psychology*

- Training Programs: CUDCP Student Report Survey.* Klonoff, E. A. (Chair) Council of University Directors of Clinical Psychology Midwinter Meeting. San Diego, CA.^a
- 2011 **Anderson, R. E.** (2011, April) *Women's Responses to Date Rape Risk in an Analogue Study.* Association of Graduate Students in Psychology Research Symposium. University of Wisconsin-Milwaukee. Milwaukee, WI.
- 2010 **Anderson, R. E.** (2010, April) *Epidemiological Associations between Time Spent in Detention and Post-Traumatic Stress Disorder: A Research Proposal.* Association of Graduate Students in Psychology Research Symposium. University of Wisconsin-Milwaukee. Milwaukee, WI.
- Anderson, R. E.** (2010, May) *Epidemiological Associations between Discrimination and Post Traumatic Stress Disorder: A Research Proposal.* Multicultural Graduate Students Association Research Forum. University of Wisconsin-Milwaukee. Milwaukee, WI.
- 2009 **Anderson, R. E.** (2009, April) *Neuropsychological Measurement of Cognitive Gains Associated with Exercise in Older Adults.* Undergraduate Research Symposium. University of Kansas, Lawrence, KS.
- 2008 **Anderson, R. E. & Johnson, D.K.** *Neuro-anatomical Changes Associated with Alzheimer's Disease.* Provost's Invited Presentation for State Legislators at Schiefelbusch Institute for Life Span Studies.

^a indicates authors listed alphabetically

Poster Presentations:

- 2014 **Anderson, R. E. & Cahill, S. P.** (2014, April) *Concordance between Two Measures of Interpersonal Violence for Detecting Cases of Sexual Aggression and Victimization in College Men.* 1st Annual Milwaukee Area Symposium for Interpersonal Violence Research. Milwaukee, WI.
- Klossner, S. C., **Anderson, R. E. & Cahill, S. P.** (2014, May) *Sexual Victimization Among Self-Identified Heterosexual and Other Sexual Orientations in College Men.* Midwestern Psychological Association. Chicago, IL.
- Anderson, R. E., Omelian, S. C. & Cahill, S. P.** (2014, May) *Labeling of Sexually Aggressive Behavior as Rape Among College Men.* Association for Psychological Science. San Francisco, CA.
- Anderson, R. E. & Cahill, S. P.** (2014, July) *Not Getting Out While There is Still Time? The Relationship Between Psychological Barriers and Sexual Victimization in an Analog Self-Defense Task.* International Family Violence and Child Victimization Research Conference. Portsmouth, New Hampshire.
- 2013 ***Anderson, R.E. & Cahill, S. P.** (2013, March) *Testing the Common Wisdom: Do the Abused Abuse?* Wisconsin Psychological Association. Middleton, WI.

- Anderson, R.E.,** Geier, T. J., & Cahill, S. P. (2013, May) Initial Validity and Reliability of the Revised Sexual Experiences Scale in a Sample of College Men. Midwestern Psychological Association. Chicago, IL.
- Geier, T. J., **Anderson, R.E.** & Cahill, S. P. (2013, May) Prevalence and Consequences of Rape Against Men in the Collaborative Psychiatric Epidemiology Surveys (CPES). Midwestern Psychological Association. Chicago, IL.
- Anderson, R. E.** & Cahill, S. P. (2013, November) Assessment of Behavioral Response to Sexual Assault Threat in College Women. Association for Behavioral and Cognitive Therapies Special Interest Group (Women's Issues) Poster Exhibition. Nashville, TN.
- 2012 Geier, T. J., **Anderson, R.E.** & Cahill, S. P. (2012, March) Epidemiological Associations between PTSD and the Experience of Incarceration in the National Survey of American Life (NSAL) . Wisconsin Psychological Association. Middleton, WI.
- Geier, T. J., Grout, K.M., **Anderson, R. E.,** & Cahill, S. P. (2012, November) Clinical Characteristics of Posttraumatic Stress Disorder among Black and White Adults in the US Population. Association for Behavioral and Cognitive Therapies. National Harbor, MD.
- 2011 **Anderson, R. E.,** Wendorf, A. R., Brouwer, A., Mosack, K. & Cahill, S. P. (2011, November) Threat detection and decision-making in a date rape scenario: Exploring qualitative themes. Association for Behavioral and Cognitive Therapies. Toronto, Ontario, CAN.
- Geier, T. J., **Anderson, R. E.,** & Cahill, S. P. (2011, November) Comparison of Assessment Methodologies on the Prevalence Rates of Sexual Victimization in a Sample of College Women. Association for Behavioral and Cognitive Therapies Special Interest Group (Methodology and Statistics) Poster Exhibition. Toronto, Ontario, CAN.
- Oztuncer, B., Milliken, J. M., **Anderson, R. E.** & Cahill, S. P. (2011, November) Women's Specific Emotional Responses to Date Rape Threat. Association for Behavioral and Cognitive Therapies Special Interest Group (Women's Issues in Behavior Therapy) Poster Exhibition. Toronto, Ontario, CAN.
- *Milliken, J. M., Oztuncer, B., **Anderson, R. E.** & Cahill, S. P. (2011, November) Assessment of Emotional Response to Risk of Sexual Assault Using the PANAS Scales. Association for Behavioral and Cognitive Therapies Special Interest Group (Women's Issues in Behavior Therapy) Poster Exhibition. Toronto, Ontario, CAN.
- Anderson, R. E.,** Geier, T. J. & Cahill, S. P. (2011, May) Epidemiological Associations between PTSD and Detention. Midwestern Psychological Association. Chicago, IL.
- Geier, T. J., **Anderson, R. E.** & Cahill, S. P. (2011, May) Complex Trauma: Is There an Empirical Basis? Midwestern Psychological Association. Chicago, IL.

- Anderson, R.E. & Cahill, S. P.** (2011, March) “No Thanks; I Don’t Think So; Back Off!”: Women’s Responses to Date Rape Risk in an Analogue Study. Wisconsin Psychological Association. Middleton, WI.
- ***Anderson, R. E., Geier, T. J. & Cahill, S. P.** (2011, March) Epidemiological Associations between PTSD and Detention in the National Survey of American Life (NSAL). Anxiety Disorders Association of American. New Orleans, LA.

*indicate poster award winners

Research Projects:

3/2013 – Behavioral Response to Threat as a Possible Mechanism of Sexual Revictimization

Present **Fear, Exposure and Anxiety Research Center, UWM** directed by Shawn P. Cahill

Principle Investigator

Stage: Active data collection, manuscript preparation

The goal of my dissertation study is to examine whether women with a history of repeated sexual victimization respond differentially, compared to non-victimization women, to an analogue behavioral response to sexual assault threat task. Participants also complete assessments of hypothesized correlates of revictimization following the ecological framework theory. Additionally, this study aims to examine whether specific types of behavioral responses, e.g., immobilized vs. assertive responses, are associated with experiencing violence during a follow-up period as part of an additional study distinct from the dissertation requirements. Prior to proposing this quasi-experimental study I conducted a critical literature review on women’s behavioral responses to threat; a manuscript based on this analysis is being prepared for publication.

1/2013 – Critical Literature Review of Complex Trauma and Related Constructs

Present **Fear, Exposure and Anxiety Research Center, UWM** directed by Shawn P. Cahill

Principle Investigator

Stage: Active data collection

The goal of this study is to describe and evaluate using a meta-analytic style the academic literature on complex trauma, complex PTSD, and DESNOS published since 1992. Stage one processing of this study describes the basic characteristics of the approximately 400 academic publications/products identified. Stage two processing evaluates the products identified in stage one as empirical using structured validated assessments of research methodology quality.

1/2012 – Survey Assessment and Psychometric Analysis of Sexual Victimization and Sexual Present Aggression in College Men

Fear, Exposure and Anxiety Research Center, UWM directed by Shawn P. Cahill

Principle Investigator

Stage: one manuscript under review, additional data analysis in progress

The goal of this study is to describe the prevalence of sexual victimization and aggression in college men as well as evaluate the psychometric properties of two forms of the revised Sexual Experiences Survey (SES) in this sample. Initial data analysis indicates college men experience approximately 25% of participants reported sexual victimization and 16% reported perpetrating sexual aggression. Additionally, the SES-Perpetration showed adequate reliability but lower validity correlations than expected with the sexual violence subscale of the Revised Conflict Tactics Scale.

3/2011 – **Association between Incarceration and PTSD Among Black Americans in the National Survey of American Life**
Present
Cahill

Principle Investigator

Stage: Manuscript under review

The goal of this study was to examine how the experience of incarceration may be related PTSD in the communities most affected by incarceration. Analyses indicate that respondents with a history of incarceration were twice as likely to meet criteria for PTSD even after controlling for demographic covariates and trauma exposure.

3/2011 – **Student Therapist Perceptions of and Use of Social Media in Clinical Work**

Present
Elizabeth Klonoff

Collaborator, Principle Investigator: David Meyerson, Supervisor:

Elizabeth Klonoff, PhD

Stage: Completed data collection, data analysis in progress

This study surveyed students of CUDCP member programs to examine students' knowledge of ethics regarding social media use, perceptions of appropriate ways to social media, and actual use of social media in their clinical work. Initial analyses indicate limited understandings of the ethical implications of social media in clinical work.

2011 **Women's Participation in Scholarly Presentations at the Annual Meeting of the Association for Behavioral and Cognitive Therapies (ABCT)**

Project Commissioned by the Women's Special Interest Group, Chair:
Alyssa M. Ward

Collaborator, Principle Investigator: Lindsay S. Ham, PhD

Stage: Completed and published

This study was commissioned to examine how women's participation in presentations at ABCT has changed during a ten year span, comparing participation in the year 1998 to 2008. We found that in most areas women's participation had increased, ranging from three to eighteen percent increases in the percentage of female participation.

3/2009 – **Women's Behavioral Responses to Date Rape Risk in an Analogue Study**

Present **Fear, Exposure and Anxiety Research Center, UWM** directed by Shawn P. Cahill

Principle Investigator

Stage: Completed and published, second manuscript under review

My master's thesis study explored whether the response-latency paradigm, originally designed for assessing risk perception skills, could be modified to evaluate behavioral responses to threat. This experimental study randomly assigned college women to three conditions each representing different levels of risk and one additional self-selected risk condition. This study found moderate increases in the intensity of behavioral responses in accordance with increases in the level of threat stimulus presented. A follow-up study analyzed qualitatively women's behavioral responses and found assertion to be the most common theme described by women but an unexpected number of non-assertive themes also emerged including conditional decision making, avoidance, and compliance.

Departmental and Professional Service:

2011-2012 **Council of University Directors of Clinical Psychology (CUDCP) National Board, Student Representative**

2012-2014 **Violence Against Women Interdisciplinary Research Group at UWM Co-Chair, Co-Founder**

2013 **Women's Special Interest Group, ABCT**
Co-Chair

Editorial Activities:

2/2012 – present Ad-hoc reviewer, *Violence Against Women*, Editor-in-Chief: Claire Renzetti, PhD

5/2012 – present Ad-hoc reviewer, *Violence and Victims*, Editor-in-Chief: Roland Maiuro, PhD

3/2014 Student Research Awards Grant reviewer, *Association for Psychology Science - Student Caucus*

4/2014 – present Ad-hoc Reviewer, *Translational Issues in Psychological Science*, Editor-in-Chief: Mary Beth Kenkel, PhD

Total number of completed manuscript reviews: 6, mentored reviews: 2

Areas of reviewing expertise: posttraumatic stress disorder, trauma, interpersonal violence, rape, mixed-methods research, women's health, college students, measurement

Professional Societies and Organizations:

American Psychological Association (APA), Student affiliate since 2007

Association for Behavioral and Cognitive Therapies (ABCT), Student member since 2010

Association for Psychological Science (APS), Student member since 2013

Psi Chi, National Honors Society in Psychology, Member Chapter: 0001, since 2008

Sigma Xi: The Scientific Research Society, Student member since 2009

