



2014

# Use of the Response-Latency Paradigm for evaluating women's responses to threat of date rape

RaeAnn E. Anderson

*University of North Dakota*, [raeann.anderson@UND.edu](mailto:raeann.anderson@UND.edu)

Shawn P. Cahill

Follow this and additional works at: <https://commons.und.edu/psych-fac>



Part of the [Social Psychology Commons](#)

---

## Recommended Citation

Anderson, RaeAnn E. and Cahill, Shawn P., "Use of the Response-Latency Paradigm for evaluating women's responses to threat of date rape" (2014). *Psychology Faculty Publications*. 3.  
<https://commons.und.edu/psych-fac/3>

This Article is brought to you for free and open access by the Department of Psychology at UND Scholarly Commons. It has been accepted for inclusion in Psychology Faculty Publications by an authorized administrator of UND Scholarly Commons. For more information, please contact [zeinebyousif@library.und.edu](mailto:zeinebyousif@library.und.edu).

Use of the Response-Latency Paradigm for Eliciting and Evaluating Women's Responses to the  
Threat of Date Rape

RaeAnn E. Anderson and Shawn P. Cahill

University of Wisconsin-Milwaukee

Author Note:

RaeAnn E. Anderson, MS & Shawn P. Cahill, PhD, Psychology, University of Wisconsin-Milwaukee

Acknowledgements: Many thanks to the research assistants (Alison Bayne, Lindsay Kaad, Jennifer Milliken, Jordan Myers, Banu Oztuncer, Elizabeth Schneider, and Mary Sosalla) who helped me collect this data, including the project coordinator, Brittney Holcomb.

Correspondence concerning this article should be addressed to RaeAnn Anderson or Shawn Cahill, Department of Psychology, University of Wisconsin-Milwaukee, 2441 E. Hartford Avenue Milwaukee, WI 53211.

Ms. Anderson: [ander569@uwm.edu](mailto:ander569@uwm.edu), phone: 414-229-3188, fax: 414-229-5219

Dr. Cahill: [cahill@uwm.edu](mailto:cahill@uwm.edu), phone: 414-229-5099

### **Abstract**

This study evaluated 146 college women's responses to date rape risk in order to test an experimental paradigm for studying threat response. Participants were randomized to four conditions; in three conditions, the level of threat participants were initially exposed to was controlled experimentally, in the control condition, participants self selected the risk. Participant responses to the threat were scored for definiteness. There was a significant main effect for condition. To examine whether control of the threat had an effect on definiteness, a moderator analysis was conducted. The results were not significant, indicating increased threat was associated with greater definiteness regardless of condition. The results of this study indicate this paradigm can be used to examine women's threat responding, a core component of risk reduction programs.

## **Introduction**

### **Significance**

Sexual assault is a serious public health issue in the United States; it is estimated that approximately 27% of college women experience attempted or completed rape between age fourteen and their college years, most of which are perpetrated by someone known to the victim (Gross, Winslett, Roberts, & Gohm, 2006; Koss, Gidycz, & Wisniewski, 1987; Fisher, Cullen & Turner, 2000). Moreover, the experience of sexual assault is associated with broad, negative effects on health and social functioning; for about a quarter of victims these difficulties last for years (Koss, 1993; Thompson et al., 2003). Thus, the need for risk reduction and prevention programs is great and the impact on public health far reaching.

### **Background**

At least two sets of skills are hypothesized to be necessary to effectively manage the threat of sexual assault, recognition of threat and response to threat (Noll & Grynch, 2011). There are established experimental research paradigms available to investigate threat recognition and this research has yielded important results, such as the deleterious effects of alcohol and alcohol expectancies on threat detection (Marx, 2000; Marx, Gross, & Juergens, 1997). However, reviews of this literature have suggested that increasing women's ability to respond to these situations, rather than simply recognize them, may be more critical to decreasing sexual assault, yet effective response to threat "has been virtually unexplored" (Gidycz, McNamara, & Edwards, 2006). Notably, the existing literature has illustrated the merits of physical resistance strategies in response to the threat of sexual assault and begun examining the predictors and psychological barriers to utilizing these strategies (Bart & O'Brien, 1984; Clay-Warner, 2002, 2003; Norris, Nurius, & Dimeff, 1996; Nurius, Norris, Young, Graham, & Gaylord, 2000; Turchik, Probst,

Chau, Nigoff, & Gidycz, 2007). An important and relatively unexplored dimension of this research is identifying the characteristics of an effective response to the threat of rape (Fisher, Daigle, Cullen, & Santana, 2007; Kearns & Calhoun, 2010; Yeater, McFall, & Viken, 2011).

The sparse literature on women's responses to threat may be due to the dearth of available and tested experimental procedures. Tools to elicit and evaluate women's responses are critical in any effort to research and, eventually, to teach women the most effective responses to threat. Notably, there are few existing standardized self report measures that can be used to assess threat response, those that are available are generally weakly correlated with actual behavior, and there is a distinct lack of established experimental procedures for eliciting realistic responses (Livingston, Testa & VanZile-Tamsen, 2007; Macy, Nurius & Norris, 2006; an exception : Gidycz, Van Wynsberghe, & Edwards, 2008).

Review of the literature of women's responses to threat identified two experimental studies that were unique in eliciting and evaluating women's hypothetical responses to the threat of date rape. Byers, Giles, and Price (1987) conducted two experiments designed to examine how women's hypothetical responses change according to situational cues and how men react to these responses. In the first experiment college women were prompted to give open ended responses about what they would do in response to unwanted sexual advances depicted in written accounts of dating situations that varied in sexual intimacy and romantic interest. The responses were scored for verbal and nonverbal definiteness. Definiteness was conceptualized as the clarity and firmness with which participants described the actions they proposed to undertake; results indicated that women's verbal definiteness varied across situations according to levels of romantic interest. In scenarios where romantic interest was higher, women's hypothetical responses were less verbally definite; physical definiteness did not change across scenarios. A

follow-up experiment asked undergraduate men to rate the effectiveness of responses recorded in the prior experiment; responses higher in verbal definiteness were rated by undergraduate men as more likely to deter sexual advances. This study used a narrative audio recording, not scenes portrayed by actors thus potentially reducing the realism and intensity of the stimulus.

Pumphrey-Gordon and Gross (2007) conducted a similar study but extended the ecological validity of the task by utilizing the response-latency measure audio recording developed by Marx and colleagues (e.g., Marx & Gross, 1995) as a stimulus. The response-latency measure uses a brief (300 second) audio recorded depiction of an interaction between a heterosexual couple that culminates in rape. The incident is portrayed through dialogue by two voice actors, thereby providing a realistic and very engaging stimulus. In the standard use of this paradigm, participants are asked to listen to the recording and push a button to indicate when “the man has gone too far”. This paradigm has been used in several experimental studies of threat detection and is notable for including a realistic and intense stimulus (Marx & Gross, 1995; Marx, Calhoun, Wilson, & Meyerson, 2001; Pumphrey-Gordon & Gross, 2007; Soler-Baillo, Marx, & Sloan, 2005). Pumphrey-Gordon & Gross (2007) utilized the response-latency measure and administered alcohol to participants to investigate how women hypothetically respond to threat as well as threat detection. The researchers modified the standard procedure by asking participants, after having indicated recognition of threat, to generate a hypothetical response to the scenario by describing what they would say or do in that situation. Responses were assessed for resistance behavior/definiteness using Byers et al.'s method. Results indicated that women who expected to and did consume alcohol had significantly less definite responses. The study is further significant in illustrating that the response-latency measure recording can be used as a stimulus for evaluating responses to threat. However, the skills of threat recognition

and threat response were confounded in this study, thereby limiting the ability to draw conclusions specifically about how women respond to threat. Specifically, by following the conventional method for threat detection in the response-latency measure paradigm, the level of threat responded to by individual participants varied widely and was determined by participants' ability to detect it. Thus, participants with poorer threat detection responded to greater levels of threat and vice versa.

In research examining hypothetical threat response, the variability in latency denotes that each participant is likely to be responding to a different level of threat, thereby raising interpretive difficulties. Prior research has illustrated that the intensity of women's responses to threat varies widely and is influenced by a variety of factors including social context and alcohol consumption. As illustrated by Pumphrey-Gordon & Gross, 2007, threat detection and threat response are intertwined processes, thus the level of threat participants are presented must be controlled in order to learn about how women respond to threat specifically. The present study, thus, was designed to investigate and isolate the effect of increased risk on participant responding and to determine whether being in control of when the response assessment occurred moderated the relationship between threat level and hypothetical response definiteness.

### **Specific Aims of the Study**

This study has two primary aims related to testing the utility of the response-latency paradigm for eliciting and evaluating women's hypothetical responses to threat. The first primary aim is to measure the level of definiteness in college women's responses to three different experimentally controlled levels of date rape threat using a modification of the response-latency measure as the critical stimulus. Specifically, it is predicted that the level of definiteness in responses will increase as the threat level increases. The second primary aim is to determine if

the relationship between level of threat and degree of definiteness in response is moderated by whether the response is measured at a threat level selected by the investigator (in the three experimental conditions) or one selected by the participant through indicating that the man in the analog scenario should stop his sexual advances (in a fourth control condition).

## Method

### Participants

Participants were 146 women enrolled in psychology courses who were compensated with extra credit in their psychology course. Participants were all women who met the following inclusion criteria: 18 years of age or older and enrollment in a psychology course permitting extra credit for research participation. Men and those who met the following criteria were excluded from the study: age less than 18 years of age and prior participation in this study. Participants who identified their sexual orientation as exclusively homosexual were not excluded from participation, in order to remain non-discriminatory; however, it was determined *a priori* that data from exclusively homosexual participants would not be used in the primary analyses as it was theorized that women who identify as exclusively homosexual would have difficulty relating to the response-latency measure stimulus. No participants withdrew from the study; two participants were excluded from analysis because of sexual orientation, and one because of prior participation in the study, leaving a total of 143 participants for the present analyses. Three participants did not provide demographic data. Of the 140 participants with this information, the average age of the sample was 21.8 years, with a modal age of 19 and a range from 18-39 years. The sample was mostly Caucasian (76.9%) with a mix of other racial backgrounds. Ethnically, 10 participants identified as Hispanic (7.0%). The majority of Hispanic participants identified their race as other ( $n = 6$ ), whereas the remainder identified their race as Caucasian ( $n = 3$ ) and



biracial ( $n = 1$ ). Four participants (2.8%) identified as bisexual and the remainder identified as heterosexual.

## Measures

All participants completed the following self-report surveys: Impact of Events Scale-Revised (Weiss, 2004), the Marlowe-Crowne Social Desirability Scale (Crowne & Marlow, 1960), the Positive and Negative Affect Scales (Watson, Clark, & Tellegen, 1988), the Rathus Assertiveness Schedule (Quillin, Besing, & Dinning, 1977), the Sexual Assertiveness Scale (Morokoff et al., 1997), the Sexual Communication Scale (Hanson & Gidycz, 1993), and the Sexual Experiences Survey (Koss & Oros, 1982). Following completion of the surveys, all participants were administered the response-latency measure, and then interviewed about their hypothetical responses to the response-latency measure. All experimenters in this study were women. Measures critical to the results of the primary aim are described in detail below. There were no significant associations between total definiteness scores or latency with any of the other measures included in the study.

*Latency.* Prior research has demonstrated good test-retest reliability for the response-latency measure (Bernat, Calhoun, Stolp & Adams, 1997). In the present study, the latencies associated with actions taken by participants in the experimental conditions to pause or close the program before the pre-determined point were recorded using computer software during administration of the response-latency measure, as were the latencies to pause or close the program as per study instructions in the control condition. For the experimental groups, latencies were entered as the predetermined time points (80, 115 or 138 seconds for conditions 1 through 3, respectively; see procedures section for further detail) unless an earlier response was recorded. For all other participants, the latency was recorded as the time elapsed until the participant paused the

program. The latency data for three participants, one in each experimental condition, was not recorded due to experimenter error and was recorded for analyses as the latency corresponding to the assigned condition, although we do not have independent verification these participants did not pause the recording earlier. Two experimental participants, both in condition three (the “late” condition), stopped the recording before the automated pause (latencies = 114 and 129 seconds). These participants did not report this to the experimenter nor did they report feeling upset or give any other indication they wished to discontinue with the study. Moreover, due to the design of procedures, experimenters did not know whether participant’s stopped the recording early unless alerted by the participant. Thus, experimenters continued with the study per the protocol.

*Hypothetical response to threat.* The Verbal and Non Verbal Definiteness Rating Scale (VNDRS) (Byers Giles & Price, 1987) was used by experimenters to rate the definiteness of hypothetical responses generated by participants during the response-latency measure paradigm. The VNDRS is the only standardized interview measure available that allowed experimenters to collect hypothetical responses *in vivo* rather than relying on retrospective report (Byers et al., 1987, Pumphrey-Gordon & Gross, 2007). The original VNDRS utilized separate 1 to 5 and 1 to 4 scales to rate verbal and non-verbal definiteness. For the present study, a 5<sup>th</sup> level was added to the nonverbal subscale from the original scale to conceptually clarify the scale; leaving a risky situation is the ideal response but this option was not accounted for separately in the original measure.

Assessment occurred when the threat stimulus audio recording paused; pausing was automated in all three experimental conditions but was contingent on participant’s action only in the fourth condition. At the point the recording was paused, an experimenter interviewed the participant about their hypothetical response to the threat. Interviews were conducted rather than

relying on self-report in accordance with prior experimental studies using this measure (Byers et al., 1987, Pumphrey-Gordon & Gross, 2007). Responses that included information about what participants would say were coded as verbal responses, information or demonstrations about actions participants would take were coded as non verbal responses. For example a response such as, “I would say “no” and then get up and leave the apartment”, were coded as a 5 for verbal (saying no) and 5 for nonverbal (getting up and leaving) definiteness. A response such as, “I would continue [e.g., kissing, intimate touching] until he acted up again” would be coded as 1 for both verbal and nonverbal definiteness. The total definiteness score, the verbal (1-5) and nonverbal scores (1-5) summed, was the primary outcome measure in this study.

The average definiteness scores for the entire sample were: verbal definiteness  $M = 2.15$  (1.44), nonverbal definiteness  $M = 2.74$  (1.82), total definiteness  $M = 4.90$  (2.38). Scores of 2 correspond to example responses such as, “Let’s do that [e.g., kissing, intimate touching] some other time” and “I would turn away from him”. A second experimenter scored the responses based on the audio recording in order to assess inter-rater-reliability. Primary and secondary score ratings were highly correlated,  $r(140) = .78, p < .001$ , indicating the scoring system could be administered reliably. The primary ratings were used for all subsequent analyses. Verbal and nonverbal responses were not significantly correlated with one another,  $r(143) = 0.59, p = .487$ .

### **Procedures**

Participants were randomly assigned to one of four study conditions, three experimental conditions and one control condition. The experimental conditions were defined by the point at which the recording in the response-latency measure automatically paused, these points were determined using means and standard deviations taken from prior research (Pumphrey-Gordon & Gross, 2007; Soler-Baillo, Marx & Sloan, 2005; Wilson et al., 1999). The only difference

between conditions was the point at which the recording was paused and participants were asked to hypothetically respond to the threat. Because the level of threat increased over the course of the recording, later pausing points defined higher levels of threat to which participants were responding. Following the conventional use of the response-latency measure paradigm, the fourth condition was a control condition in which the participants themselves decided when to pause the recording by identifying the point at which the man in the story should stop his advances.

Experimenters, who were all women, programmed software designed for the study with information on the assigned condition and then provided participants with instructions to self-administer the response-latency measure. The experimenter gave context for the recording by saying, “This is an interaction between a couple, Jenny and Dan, who have just returned from a date to Dan's apartment. They have been on two dates before but never have had sex with one another.” The following instructions were then given to participants in the three experimental conditions:

*Your task is to listen to the situation as if you were on this date. Try to imagine how you would feel if you were Jenny. [At some point during this task, the recording will temporarily stop. Alert me through the intercom system when this happens. I will then enter the room and ask you to complete some additional questions]. After completing the questions, you will be able to listen to the remainder of the tape in private if you wish to do so. Do you have any questions?*

For participants in the control condition, the instructions appearing within brackets above were replaced with the following:

*Listen and signal, by pressing the button “response” on the screen, if you feel that the man should stop his advances. Simply press the button one time, if you feel the man should stop his advances. If you press the button, the tape will pause. If you press the button, alert me through the intercom system. If you do not press the button, please alert me when the tape is completed. After you have alerted me, I will then enter the room and ask you to complete some additional questions.*

Upon communication from the participant, the experimenter then entered the room and asked, “What would you do now if you were Jenny? Please say and/or show what your response would be in this situation. There are no right or wrong answers and please be as honest as possible.” The experimenter then recorded and scored the response; follow up questions were limited to queries clarifying vague responses. Clarifying queries followed prompts such as, “You said you would do X, can you tell me more about that?” Participants were able to make as many or as few statements as desired. If participants described more than one response, the response indicated to be temporally the last or the most definite response was the one that was scored for analysis. The following is an example of an exchange between a participant (P) and an experimenter (E). This example was scored 5 on the nonverbal and 1 on the verbal scale as the participant suggested the most extreme nonverbal response possible (e.g., leaving the situation) but did not elaborate any verbal responses.

*P: Uh well she told him don't do that she shoulda got up and left.*

*E: Ok so you would leave?*

*P: Yah*

*E: Is there anything else?*

*P: It sounded like she lead him on, kinda, with the kissing, but when she got uncomfortable she shoulda left”*

Participants completed the experiment at individual appointments, arranged prior to their arrival. With the exceptions of the response interview and the debriefing, participants completed the entire study in private. The order of administration of study materials was decided based on practical issues and the inability to avoid possible priming effects, as our IRB approved informed consent procedures explicitly warned participants of the exposure to violent and/or sexual material in the response-latency measure stimulus and questionnaires. It was of greater concern that completing questionnaires after the response-latency measure, due to the intensity of the stimulus, would possibly change the self report attitudes of participants. Because all participants completed consent and surveys before the response-latency measure, any priming effects were equally distributed across groups.

### **Power Analysis and Sample Size**

This design employed a novel use of the response-latency measure procedures. Accordingly, comparisons with existing studies for the purposes of calculating effect sizes are difficult. Previous research has shown effect sizes of Cohen's  $d = .39$  based on mean latencies as close as 20 seconds apart with 25 participants in each experimental group (Marx & Gross, 1995). Based on this, we chose *a priori* to power the study to detect an effect size of .4 for definiteness at any pair wise comparison of the three experimental conditions (1 vs. 2, 2 vs. 3, 1 vs. 3). To achieve 80% power at  $\alpha = .05$ , a minimum of 34 participants per experimental condition were needed ( $3 \times 34 = 102$ ) based on analyses using G\*Power (Faul, Erdfelder, Lang, & Buchner, 2007). For our control group, we decided to include a similar number of participants as in one of the experimental conditions. All effect sizes reported in the results section were calculated using

G\*Power software which provides Cohen's  $d$  to estimate *post-hoc* implied power; effect sizes were interpreted using Cohen's guidelines (Cohen, 1992; Faul, Erdfelder, Buchner, & Lang, 2009; Faul et al., 2007).

## Results

### Primary Outcomes

For the first primary aim, definiteness scores of how participants would hypothetically respond to the scenarios in the three experimental conditions were analyzed using a single factor between groups analysis of variance (ANOVA). There was a significant main effect for condition,  $F(2, 104) = 5.70, p = .004, d = .31$  (estimated power = 0.91). The means (SDs) for each condition were: Condition 1 = 4.42 (1.98), Condition 2 = 4.03 (2.23), and Condition 3 = 5.78 (2.64); the means are displayed in Figure 1. Inspection of the figure suggests that definiteness increased at the highest level of threat. Follow up  $t$ -tests for independent samples corresponding to each of the three possible pair wise comparisons were then computed. Definiteness scores in the third condition were significantly greater than scores in the first  $t(70) = -2.48, p = .016$  and second conditions  $t(69) = -3.02, p = .004$ . There was no statistical difference between definiteness scores in the first and second conditions  $t(69) = .78, p = .441$ .

The second primary aim investigated if the relationship between threat level and definiteness scores was moderated by whether the definiteness of response was measured at a threat level imposed by the investigator or one selected by the participant. The level of threat was operationally defined as the latency score. Latency scores varied widely in the control condition, with a range of 76-364 seconds and a mean of 120.64 seconds. Approximately three quarters of the control condition latency scores fell in a similar range to the constrained latencies of the first three conditions. Definiteness scores were analyzed using multiple regression, in which

definiteness scores served as the dependent variable with latency and experimental control of threat (dummy coded, 1 = participant control) as predictor variables. The two participants in the late experimental condition who chose to stop the recording before the predetermined time were excluded from this analysis<sup>1</sup>. Following Baron and Kenny (1986), the analysis utilized hierarchical multiple regression in which main effects were first entered into the model, one in each block. The order of the main effects was determined by initially entering both variables simultaneously and examining which effect explained the most variance, and then re-entering them in stepwise fashion; latency was thus entered in the first step and control was entered in the second step. The interaction product for latency and experimental control was then entered in the third and final step. Table 1 presents descriptive statistics (*Ms*, *SDs*, and intercorrelations [Pearson *rs*]) for the variables. Latencies were significantly correlated with total definiteness scores and with the latency X control interaction.

Table 2 presents the results of the moderator analysis. Latency was found to be a significant predictor of definiteness in Step 1. In Step 2, latency continued to predict definiteness, but the addition of experimental control did not account for significant additional variance. Latency continued to be a significant predictor of outcome in the final step, whereas neither experimental control nor the interaction of latency and experimental control accounted for significant additional variance. Thus, the experimental manipulation vs. participant control of threat did not appear to moderate the relationship between latency and definiteness,  $d = .06$  (estimated power level = 0.83).

An exploratory analysis was also conducted to examine how using multiple experimenters may have influenced definiteness. Variation of definiteness scores across the eight experimenters was analyzed using one way analysis of variance (ANOVA), no experimenter effects on total



definiteness scores were found,  $F(7,120) = .691, p = .679, d = .20$  at the estimated power level of .73. Finally, it was of interest to examine if social desirability affected how participants responded. A correlation was conducted between total definiteness scores and total social desirability scores and was not significant,  $r(142) = .084, p = .32$ .

### **Discussion**

The experience of sexual assault can have broad and serious consequences. Effective behavioral response to the threat of rape has been identified as an important research area and skill for women; yet, little is known about threat response and what skills contribute to more effective responses. Much of the current research on prevention programs attempts to improve both sets of skills in women through education about sexual assault and self defense training, but our current evaluative tools do little to assess whether the specific skills of threat detection or threat response are influenced by these interventions, though innovative approaches and technology may offer new tools (Jouriles, Rowe, McDonald, Platt, & Gomez, 2011).

The aim of this study was to explore whether a commonly used threat detection paradigm, the response-latency measure, could also be used to examine women's hypothetical responses to threat. The development of valid ways to measure women's hypothetical responses to threat will better allow us to evaluate interventions designed to modify how women respond to threat, and determine whether modifying women's responses to threat contribute to the efficacy of intervention programs. Accordingly, the first primary aim of this study was to determine whether women responded with greater definiteness as the level of realistic threat stimulus increased. Level of threat was increased by experimental manipulation to eliminate the confound between level of threat and ability to detect threat in prior research (Pumphrey-Gordon & Gross, 2007). The second primary aim was to determine if the relationship between the stimulus level of threat

and threat response definiteness was moderated by whether the assessment point was selected by the investigator or was determined by the participant as the point in which the man in the scenario should stop his advances. The latter is important in determining whether researchers can control threat without changing responding in order to study related threat variables in future research, such as prior victimization, social and/or environmental cues, etc.

As predicted, this study found that women's hypothetical responses to threat became more definite as the level of threat increased. Further, this study found no differences in the relationship between level of threat and threat response definiteness across methods of administration. This indicates that women responded to threat in similar manner whether they themselves identified the threat or it was experimentally controlled, and illustrates that women naturalistically increase their response to increased threat. Prior research examining women's responses to threat has not identified whether behavioral responses meaningfully match the level of threat; this is an important theoretical and conceptual point as creating an effective behavioral response includes matching response to the current threat. In this regard, it is notable that response definiteness scores were in the low to moderate range (5.8 on the VNDRS) even at the high level of risk. This finding suggests that women may recognize the need for a response but be unsure what type of response is necessary or appropriate. This relates to prior research that has demonstrated women respond to the threat of sexual assault not just with concerns for their own safety, but also for concerns about the relationship and other social conventions (Macy, Nurius, & Norris, 2006; VanZile-Tamsen, Testa, & Livingston, 2005). Thus, our findings support the validity of the response-latency measure as an experimental paradigm for studying hypothetical threat responses elicited in real time, using a realistic stimulus in an ethical manner. This is important for stimulating further research on women's hypothetical responses to threat

and training women to effectively respond to the threat of sexual assault in ways that are both useful and practical.

### **Limitations**

The results of this study may be limited by the use of definiteness as the primary outcome measure. Definiteness is a proxy for assertiveness but likely taps only a limited area of this broad construct. The VNDRS was modified slightly from its original version which may have changed the functionality of the instrument. Additionally, the levels of threat to which participants were initially exposed in the experimental conditions may not have been high enough to elicit truly assertive responses. Only in the third condition was the threat unquestionably high; this is further supported by examining the average latency of the control condition which was 121.73 seconds, slightly lower than the latency of condition three (138 sec.), but higher than condition two (115). In addition, the informed consent procedures and the threat detection task instructions for the response- latency measure in the control condition may have cued participants to heighten their attention to threat related stimuli and artificially increased responding. However, if this is speculation is true, women's hypothetical responses to threat, which were already at a low to moderate level, may have been *overestimated* in this study.

### **Conclusions**

These findings highlight the need for further research into women's hypothetical responses to threat. Qualitative or linguistic approaches may be especially useful to identify what strategies women perceive to be effective. Future research should investigate the use the response-latency measure paradigm to predict future experiences of victimization. The potential of the response-latency measure paradigm to predict future victimization based on threat response, rather than threat detection (Marx, Calhoun, Wilson & Meyerson, 1999) would lend further support to its

utility as an evaluative tool, which is needed to accurately learn about threat response and to assess the potential benefits of interventions. Though this study illustrates that the response-latency measure is a potentially valid method for assessing women's responses to threat, much more research is needed into the factors that influence how women respond and what types of responses are adequate for avoiding assault.

### **Footnotes**

<sup>1</sup>Alternate analyses which included the experimental group participants who chose to pause the recording before the pre-determined time were also conducted. One of these analyses included the participants and their latencies as if they had behaved similarly to the other participants in their experimental groups (no experimental control), another recoded these participants as having experimental control. Neither of these analyses yielded evidence of moderation.

### References

- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182. doi: 10.1037/0022-3514.51.6.1173
- Bart, P. B., & O'Brien, P. H. (1984). Stopping rape: Effective avoidance strategies. *Signs, 10*(1), 83-101. doi: 10.1086/494115
- Bernat, J. A., Stolp, S., Calhoun, K. S., & Adams, H. E. (1997). Construct validity and test–retest reliability of a date rape decision-latency measure. *Journal of Psychopathology and Behavioral Assessment, 19*(4), 315-330. doi: 10.1007/bf02229024
- Byers, E. S., Giles, B. L., & Price, D. L. (1987). Definiteness and effectiveness of women's responses to unwanted sexual advances: A laboratory investigation. *Basic and Applied Social Psychology, 8*(4), 321-338. doi: 10.1207/s15324834basp0804\_5
- Clay-Warner, J. (2002). Avoiding rape: The effect of protective actions and situational factors on rape outcome. *Violence and Victims, 17*(6), 691-705. doi: 10.1891/vivi.17.6.691.33723
- Clay-Warner, J. (2003). The context of sexual violence: Situational predictors of self-protective actions. *Violence and Victims, 18*(5), 543-556. doi: 10.1891/vivi.2003.18.5.543
- Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155.
- Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology, 24*(4), 349-354. doi: 10.1037/h0047358
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A. (2009). Statistical power analyses using G\*Power 3.1: tests for correlation and regression analyses. *Behav Res Methods, 41*(4), 1149-1160. doi: 10.3758/BRM.41.4.1149

- Faul, F., Erdfelder, E., Lang, A., & Buchner, A. (2007). G\*Power 3: a flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behav Res Methods*, *39*(2), 175-191.
- Fisher, B. S., Daigle, L. E., Cullen, F. T., & Santana, S. A. (2007). Assessing the efficacy of the protective action-completion nexus for sexual victimizations. *Violence and Victims*, *22*(1), 18-42. doi: 10.1891/vv-v22i1a002
- Fisher, B. S., Cullen, F. T., & Turner, M. G. (2000). The Sexual Victimization of College Women. Series: Research Report. *NCJ*.
- Gidycz, C. A., McNamara, J. R., & Edwards, K. M. (2006). Women's risk perception and sexual victimization: A review of the literature. *Aggression and Violent Behavior*, *11*(5), 441-456. doi: 10.1016/j.avb.2006.01.004
- Gidycz, C. A., Van Wynsberghe, A., & Edwards, K. M. (2008). Prediction of women's utilization of resistance strategies in a sexual assault situation: A prospective study. *Journal of Interpersonal Violence*, *23*(5), 571-588. doi: 10.1177/0886260507313531
- Gross, A. M., Winslett, A., Roberts, M., & Gohm, C. L. (2006). An Examination of Sexual Violence Against College Women. *Violence Against Women*, *12*(3), 288-300. doi: 10.1177/1077801205277358
- Hanson, K. A., & Gidycz, C. A. (1993). Evaluation of a sexual assault prevention program. *Journal of Consulting and Clinical Psychology*, *61*(6), 1046-1052. doi: 10.1037/0022-006x.61.6.1046
- Jouriles, E. N., Rowe, L. S., McDonald, R., Platt, C. G., & Gomez, G. S. (2011). Assessing women's responses to sexual threat: Validity of a virtual role-play procedure. *Behavior Therapy*, *42*(3), 475-484. doi: 10.1016/j.beth.2010.11.005

Kearns, M. C., & Calhoun, K. S. (2010). Sexual revictimization and interpersonal effectiveness.

*Violence and Victims, 25*(4), 504-517. doi: 10.1891/0886-6708.25.4.504

Koss, M. P. (1993). Rape: Scope, impact, interventions, and public policy responses. *American*

*Psychologist, 48*(10), 1062-1069. doi: 10.1037/0003-066x.48.10.1062

Koss, M. P., & Oros, C. J. (1982). Sexual Experiences Survey: A research instrument

investigating sexual aggression and victimization. *Journal of Consulting and Clinical*

*Psychology, 50*(3), 455-457. doi: 10.1037/0022-006x.50.3.455

Livingston, J. A., Testa, M., & VanZile-Tamsen, C. (2007). The Reciprocal Relationship Between

Sexual Victimization and Sexual Assertiveness. *Violence Against Women, 13*(3), 298-313.

doi: 10.1177/1077801206297339

Macy, R. J., Nurius, P. S., & Norris, J. (2006). Responding in Their Best Interests:

Contextualizing Women's Coping With Acquaintance Sexual Aggression. *Violence*

*Against Women, 12*(5), 478-500. doi: 10.1177/1077801206288104

Marx, B., & Gross, A. (1995). An analysis of two contextual variables. *Behavior Modification,*

*19*(4), 451-463. doi: 10.1177/01454455950194003

Marx, B. P., Gross, A. M., & Juergens, J. P. (1997). The effects of alcohol consumption and

expectancies in an experimental date rape analogue. *Journal of Psychopathology and*

*Behavioral Assessment, 19*(4), 281-302. doi: 10.1007/bf02229022

Marx, B. P., Calhoun, K. S., Wilson, A. E., & Meyerson, L. A. (2001). Sexual revictimization

prevention: An outcome evaluation. *Journal of Consulting and Clinical Psychology,*

*69*(1), 25-32. doi: 10.1037/0022-006x.69.1.25

Morokoff, P. J., Quina, K., Harlow, L. L., Whitmire, L., Grimley, D. M., Gibson, P. R., &

Burkholder, G. J. (1997). Sexual Assertiveness Scale (SAS) for women: Development



- and validation. *Journal of Personality and Social Psychology*, 73(4), 790-804. doi: 10.1037/0022-3514.73.4.790
- Noll, J. G., & Grych, J. H. (2011). Read-react-respond: An integrative model for understanding sexual revictimization. *Psychology of Violence*, 1(3), 202-215. doi: 10.1037/a0023962
- Norris, J., Nurius, P. S., & Dimeff, L. A. (1996). Through her eyes: Factors affecting women's perception of and resistance to acquaintance sexual aggression threat. *Psychology of Women Quarterly*, 20(1), 123-145. doi: 10.1111/j.1471-6402.1996.tb00668.x
- Nurius, P. S., Norris, J., Young, D. S., Graham, T. L., & Gaylord, J. (2000). Interpreting and defensively responding to threat: Examining appraisals and coping with acquaintance sexual aggression. *Violence and Victims*, 15(2), 187-208.
- Pumphrey-Gordon, J. E., & Gross, A. M. (2007). Alcohol consumption and females' recognition in response to date rape risk: The role of sex-related alcohol expectancies. *Journal of Family Violence*, 22(6), 475-485. doi: 10.1007/s10896-007-9104-0
- Quillin, J., Besing, S., & Dinning, D. (1977). Standardization of the Rathus Assertiveness Schedule. *Journal of Clinical Psychology*, 33(2), 418-422. doi: 10.1002/1097-4679(197704)33:2<418::aid-jclp2270330217>3.0.co;2-y
- Soler-Baillo, J. M., Marx, B. P., & Sloan, D. M. (2005). The psychophysiological correlates of risk recognition among victims and non-victims of sexual assault. *Behaviour Research and Therapy*, 43(2), 169-181. doi: 10.1016/j.brat.2004.01.004
- Thompson, K. M., Crosby, R. D., Wonderlich, S. A., Mitchell, J. E., Redlin, J., Demuth, G., et al. (2003). Psychopathology and sexual trauma in childhood and adulthood. *Journal of Traumatic Stress*, 16(1), 35-38. doi: 10.1023/a:1022007327077

- Turchik, J. A., Probst, D. R., Chau, M., Nigoff, A., & Gidycz, C. A. (2007). Factors predicting the type of tactics used to resist sexual assault: A prospective study of college women. *Journal of Consulting and Clinical Psychology, 75*(4), 605-614. doi: 10.1037/0022-006x.75.4.605
- VanZile-Tamsen, C., Testa, M., & Livingston, J. A. (2005). The Impact of Sexual Assault History and Relationship Context on Appraisal of and Responses to Acquaintance Sexual Assault Risk. *Journal of Interpersonal Violence, 20*(7), 813-832. doi: 10.1177/0886260505276071
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*(6), 1063-1070. doi: 10.1037/0022-3514.54.6.1063
- Weiss, D. S. (2004). The Impact of Event Scale - Revised. In J. P. Wilson & T. M. Keane (Eds.), *Assessing Psychological Trauma and PTSD* (2nd ed.). New York, NY: The Guilford Press.
- Wilson, A. E., Calhoun, K. S., & Bernat, J. A. (1999). Risk recognition and trauma-related symptoms among sexually revictimized women. *Journal of Consulting and Clinical Psychology, 67*(5), 705-710. doi: 10.1037/0022-006x.67.5.705
- Yeater, E. A., McFall, R. M., & Viken, R. J. (2011). The relationship between women's response effectiveness and a history of sexual victimization. *Journal of Interpersonal Violence, 26*(3), 462-478. doi: 10.1177/0886260510363425

**Tables**

Table 1

*Means, Standard Deviations and Intercorrelations for Moderator Analysis (N = 141)*

Variable	<i>M</i>	<i>SD</i>	Correlations (Pearson's <i>r</i> )		
			Latency	EC	Interaction
Total Definiteness Score	4.91	2.39	.183*	.10	.12
Latency (Predictor)	113.1	35.5	—	.13	.49**

Note. EC=Experimental Control; Latency indicates the level of threat to which participants responded, operationalized as the number of seconds elapsed in the response-latency measure prior to obtaining definiteness ratings. \* $p < .05$ , \*\* $p < .001$

Table 2

*Moderator Analysis of Definiteness Model Coefficients and Summary Statistics (N = 141)*

Step and Predictors	B	SE B	$\beta$	R <sup>2</sup>	R <sup>2</sup> $\Delta$
Step 1 (Constant)	3.53	.664			
Latency	.012	.006	.183*	.033	.033*
Step 2 (Constant)	3.49	.665			
Latency	.012	.006	.172*		
EC	.444	.458	.081	.040	.007
Step 3 (Constant)	2.30	1.08			
Latency	.022	.010	.333*		
EC	2.32	1.43	.425		
Latency*EC	-.016	.012	-.413	.053	.013

Note. EC=Experimental Control; Latency indicates the level of threat to which participants responded, operationalized as the number of seconds elapsed in the response-latency measure prior to obtaining definiteness ratings. The two participants from the “late group” (condition 3) who paused the recording early were not included in this analysis (see text and Endnote 1 for additional details).

\*  $p < .05$

## Figures

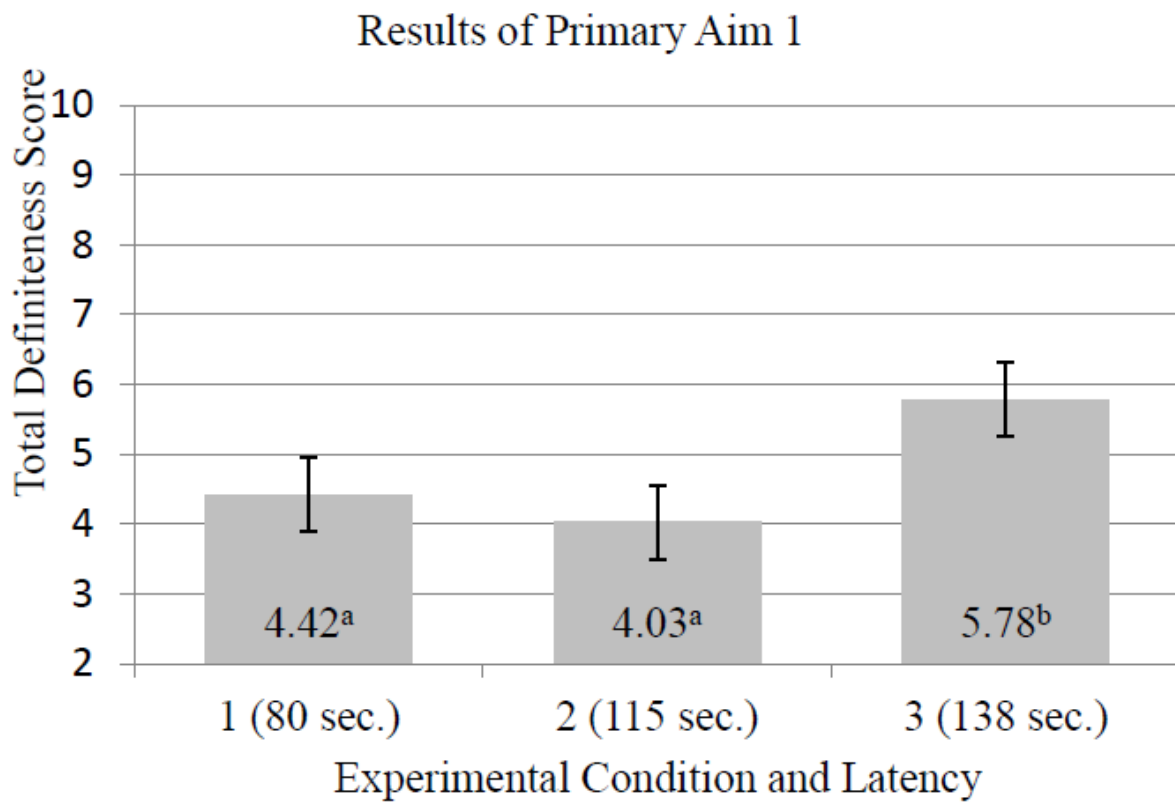


Figure 1. Mean definiteness total scores by condition; mean scores that share a superscript are not significantly different from one another,  $p = .441$ . Means that do not share a superscript are significantly different from one another,  $p < .05$ . Total definiteness scores range from 2-10. Brackets indicate standard errors.