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The Effects of Instigation, Anger, and Emotion Regulation on Intimate Partner Violence Related Behaviors: Examination of the Perfect Storm Theory

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The Effects of Instigation, Anger, and Emotion Regulation on Intimate Partner Violence Related Behaviors:
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For the degree of Doctor of Philosophy

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THE EFFECTS OF INSTIGATION, ANGER, AND EMOTION REGULATION ON
INTIMATE PARTNER VIOLENCE RELATED BEHAVIORS: EXAMINATION OF
THE PERFECT STORM THEORY

A Dissertation

Submitted to the Faculty

of

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Erica L. Birkley

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ABSTRACT

Birkley, Erica L. Ph.D., Purdue University, August 2015. The Effects of Instigation, Anger, and Emotion Regulation on Intimate Partner Violence Related Behaviors: Examination of the Perfect Storm Theory. Major Professor: Christopher I. Eckhardt.

The present study was an empirical evaluation of I³ “perfect storm” theory (“I-Cubed”; Finkel & Eckhardt, 2013; Finkel, 2014), in which the interactive risk processes of instigation, emotion regulation, and trait anger were examined in the prediction of intimate partner violence (IPV) related behaviors. In a 2 X 4 between subjects design, a sample of college undergraduates ($N = 180$) with a history of IPV were randomly assigned to use 1 of 4 emotion regulation strategies (cognitive reappraisal, distraction, suppression, or no instruction) while listening to either a anger arousing (instigation) or neutral (no instigation) imagined relationship scenario presented using the Articulated Thoughts in Simulated Situations (ATSS) paradigm. IPV-related behaviors were assessed via participants’ coded aggressive verbalizations during the imagined relationship scenario and self-reported desire to engage in IPV-related behaviors following the ATSS. Results supported the “perfect storm” hypothesis that greatest risk for IPV-related behaviors occurred when participants who endorsed high (versus low) levels of trait anger experienced provocation and engaged in suppression as a weak inhibitory strategy for emotion regulation $\chi^2(1) = 20.34, p < .001 (r = .62)$. In addition, the prosocial outcome of negotiation with one’s partner was endorsed most frequently

following the use of cognitive reappraisal without provocation ($F(3, 164) = 2.903, p < .05$). Implications for future research and intervention are discussed in the context of “perfect storm” theory.

INTRODUCTION

Intimate partner violence (IPV) is an alarmingly common occurrence of physical, psychological, or sexual harm perpetrated within current or former romantic dyads (Saltzman, Fanslow, McMahon, & Shelley, 2002), with 82% of undergraduate dating couples perpetrating verbal aggression and over 1 out of 5 partners perpetrating instances of physical aggression over the course of 1 year (Shook, Gerrity, Jurich, & Segrist, 2000). Notably, more than 1 in every 3 women (35.6%) and 1 in every 4 men (28.5%) will experience physical violence, rape, and/or stalking by an intimate partner within their lifetime (Black, Basile, Breiding, Smith, Walters, et al., 2011). In a crucially important effort to better understand IPV etiology and inform early intervention, risk factors for IPV perpetration have been examined including difficulties in emotion regulation and managing angry arousal (Baker & Stith, 2008; Shorey, Cornelius, & Idema, 2011). In addition, while provocation appears to be a strong acute predictor of IPV risk, there is no guarantee that provocation alone will be met with an aggressive response (Eckhardt, Barbour, & Davison, 1998). The mechanisms by which identified risk factors interact to confer acute risk for IPV perpetration demands further empirical evaluation. The purpose of this investigation was to examine, at the process level, whether the interaction between instigation (i.e., provocation) and emotion regulation varied based on self-reported dispositional levels

of anger in predicting likelihood for IPV perpetration. The current study evaluated for whom, and under what circumstances, differential and greatest risk for IPV-related behaviors was observed.

Association Between Anger and IPV-Related Behaviors

There is a moderate association between anger-related constructs and IPV perpetration across sex (Birkley & Eckhardt, 2015), and these associations appear strongest for those who report more severe acts of IPV. Anger is a multidimensional¹ concept comprised of physiological (general sympathetic nervous system arousal), cognitive (irrational beliefs, automatic thoughts), phenomenological (labeling of angry feelings, self-awareness), and behavioral variables (verbal/behavioral anger expression strategies; Berkowitz, 1993; Eckhardt, Barbour, & Stuart, 1997; Eckhardt & Deffenbacher, 1995). While there exists clear evidence for the role of anger-related constructs as acute and long-term risk factors for IPV-related behaviors (Dodge & Pettit, 2003; Eckhardt & Jamison, 2002; Hellmuth & McNulty, 2008; Hershorn & Rosenbaum, 1991; Moffitt, Krueger, Caspi, & Fagan, 2000), theoretical approaches vary in defining the mechanisms by which anger confers risk for IPV perpetration. Cognitive script models posit that situational stimuli activate hostile scripts that promote angry and aggressive responding in the acute experience of negative affect (Berkowitz, 2012; Beck 1999), and that biased attitudes toward aggressive stimuli are associated with less competent decision making and greater likelihood of engaging in IPV-related responding (Eckhardt, Samper, Suhr, & Holtzworth-Munroe, 2012). Alternatively, interpersonal approaches point to the importance of focusing on the dyadic interaction in which repeated exchanges of anger, hostility, and belligerence

constitute patterns of negative reciprocity that prime aggressive responding within the couple (Cordova et al., 1993; Hellmuth & McNulty, 2008). Furthermore, longitudinal studies have pointed to developmental components of attachment (Dutton, 2010) and long-standing intrapersonal patterns of negative affect and antisocial traits (Moffitt, Krueger, Caspi, & Fagan, 2000) in predicting the anger-IPV association. Thus, across several empirically supported theoretical models that explore interpersonal and intrapersonal cognitive, dispositional, and situational risk factors, anger appears to be associated with IPV perpetration. Specifically, elevated trait anger, the dispositional tendency to respond to many situations with anger arousal, appears particularly salient as an IPV-risk process especially when examined in the context of other risk factors, such as emotion regulation (Murphy, Taft, & Eckhardt, 2007). Trait anger has mediated the relationship between emotion regulation difficulties and the perpetration of psychological IPV among females (Shorey, Cornelius, & Idema, 2011). In addition, undergraduates high in dispositional levels of anger have evidenced significant difficulties in emotion regulation (Asberg, 2013). Thus, it is important to further evaluate the interactive processes between trait anger and emotion regulation when determining risk for IPV perpetration by defining the unique and differential role of emotion regulation strategies in conferring risk for IPV-related behaviors.

Emotion Regulation Strategies and Risk for IPV

Perpetrators of IPV evidence emotion regulation difficulties (Babcock, Johnson, Gottman, & Yerington, 2000; Holtzworth-Munroe & Stuart, 1994) and would likely benefit from skills-based practice of adaptive emotion expression skills (Murphy & Eckhardt, 2005), particularly among those high in levels of dispositional anger

(Murphy, Taft, & Eckhardt, 2007). Emotion regulation difficulties uniquely accounted for 18% of the variance in reported partner abuse among over 100 men enrolled in batterer intervention programs across three cities (Tager, Good, & Brammer, 2010). Emotion regulation is distinct from anger-related constructs as it is defined as a series of processes in which affective states are evaluated and responses are generated that often results in the modification of affective experiences and/or expression (Gross, 1998; Stappenbeck & Fromme, 2013). Usage of certain regulation strategies, such as the antecedent-focused strategies of attentional deployment and cognitive control, has been linked to notable decreases in risk for aggressive responding (Finkel, 2007). Attentional deployment is of particular importance in the prediction of aggressive behavior, such that attention to provocation and anger-promoting stimuli is likely to increase one's urge to aggress (Giancola et al., 2010) via activation of cognitive scripts that focus hostile attitudes toward the source of provocation (Berkowitz, 1993). Giancola and colleagues (2010) argue that distraction away from attention on provocative cues in the environment likely facilitates a decrease in acute negative affect (i.e., anger arousal) and thus risk for aggression perpetration. The emotion regulation strategy of distraction, the generation of thoughts and/or images unrelated to the scenario and neutral affective content (Paul, Simon, Kniesche, Kathmann, & Endrass, 2013), likely acts as a strong inhibitor of IPV-related behaviors via focused attention on affectively neutral versus anger-provoking stimuli.

Numerous studies have also illustrated the role of cognitive reappraisal in promoting prosocial, adaptive responses (Gross, 2002; Robertson, Daffern, & Bucks, 2012), even in situations where instigation and impellance processes are present, such

as a partner's perpetration of violence (McNulty & Hellmuth, 2008), a history of IPV perpetration (Maldonado et al., 2014), or desire for revenge-focused aggression (Barlett & Anderson, 2011). During cognitive reappraisal a cognitive change process occurs when the initial appraisal of a person/situation (e.g., my boyfriend didn't wave to me on the street and *this means he is upset with me*) is re-evaluated and alternative, less-negative thoughts about the situation or person are considered (e.g., *if he had seen me he would have likely waved*; Gross, 2002).

In contrast, the response-focused emotion regulation strategy of suppression, characterized by voluntary inhibition of the expression of affect (Paul et al., 2013), has been shown to increase risk for IPV perpetration. Suppression is posited to prime aggressive responding via increased physiological arousal in response to stimuli that contains negative affect (Gross & Levenson, 1993; 1997). Furthermore, engagement in a pattern of suppression as an inhibitory emotion regulation response increases reliance on maladaptive conflict resolution strategies such as verbal and physical aggression (Bushman, Baumeister, & Phillips, 2001; Jakupcak, 2003).

I³ (“I-Cubed”) and Perfect Storm Theory

Although many risk factors, such as trait anger and emotion regulation difficulties, have been identified to place individuals at greater likelihood for IPV perpetration, the exploration of the interactive effects of risk factors for IPV has posed an organizational challenge to the field. A theoretically informed structure is needed to provide necessary clarity and focus in the empirical investigation of mechanisms of IPV risk, particularly when evaluating for whom and under what circumstances IPV perpetration is most likely to occur. This structure would provide a necessary

framework to investigate the differential associations between trait anger, instigation, and various emotion regulation strategies in predicting likelihood of IPV-related behaviors.

I³ is a process-driven, meta-theoretical model designed with the specific intention of providing an organizational structure for exploring mechanisms of IPV risk; and this framework allows for hypotheses testing across theoretical models for IPV perpetration (Finkel et al., 2012). The I³ framework is comprised of three processes that predict risk for IPV perpetration: instigation (situational factors that normatively potentiate an urge to aggress; i.e. provocation), impellance (disposition or situational factors that promote a strong urge to aggress; i.e. trait anger), and inhibition (factors that increase the likelihood that the urge to aggress will be over-ridden; i.e. emotion regulation strategy of cognitive reappraisal). This framework allows researchers to examine the interactive effects between processes that promote or lessen an urge to aggress in order to test IPV-risk models in a systematic and theoretically-informed manner (Finkel & Eckhardt, 2013). A component of the I³ model known as the “perfect storm theory” (Finkel et al., 2012; Finkel & Eckhardt, 2013) posits that the greatest likelihood for IPV would occur when instigation and impellance processes are strong and inhibitory processes are weak. Several prior investigations have found empirical support for the three-way “perfect storm” I³ interaction by examining a variety of IPV risk processes (i.e., IPV history, acute alcohol intoxication; Eckhardt, 2007; Finkel et al., 2012). Drawing on I³ theory, Finkel and colleagues (2012) conducted four studies that explored the interactive effects of the robust risk process of dispositional aggressiveness (impellance) by weak inhibitory strategies (i.e., poor

executive control) and strong instigation via provocation. Of paramount importance was the demonstration of the flexibility of the use of I³ “perfect storm” theory in providing a framework for the evaluation of IPV risk processes across diverse samples, measurement and assessment techniques, and aggression paradigms (Finkel et al., 2012). Further comprehensive empirical tests of “perfect storm” theory are essential in informing IPV etiology and intervention by exploring how interactions between processes that confer risk predict greatest likelihood of IPV.

Prior studies have very recently begun to explore the effects of cognitive reappraisal and suppression on IPV or general aggression perpetration (Maldonado et al., 2014; McRae et al., 2011; Stappenbeck & Fromme, 2013). Maldonado and colleagues (2014) used I³ theory as a framework to evaluate the use of emotion regulation among those with and without a history of IPV in response to angry arousing imagined relationship scenarios. Results indicated that those with a history of IPV who used cognitive reappraisal made fewer aggressive verbalizations during the imagined relationship scenario than individuals without an IPV history. “Perfect storm” associations between IPV history, suppression, and instigation unfortunately fell short of statistical significance (Maldonado et al., 2014). The existing literature has yet to investigate the role of attention allocation or examine whether the relationship between emotion regulation and IPV varies based on levels of dispositional anger or the presence of provocation. In addition, prior studies have almost exclusively examined self-reported tendencies to either engage in emotion regulation strategies more generally (i.e., emotion regulation at times of increased arousal is not measured) or experience difficulty in regulation emotions (e.g., via lack of emotional awareness or

non-acceptance of negative affect). More precise evaluation of emotion regulation strategies during provocation within the context of a romantic relationship is needed to evaluate emotion regulation as a differential predictor of IPV-related behavior.

Present Study

The present investigation examined the effects of instigation and the use of various emotion regulation strategies *during* imagined relationship scenarios that are affectively neutral and anger arousing in order to more discriminately predict acute risk for IPV-related behaviors (i.e., articulated aggressive verbalizations and self-reported desire to behave aggressively toward one's partner). This investigation examined whether short-term use of specific emotion regulation strategies during anger arousal following provocation conferred differential risk for IPV-related behaviors, particularly for those high in trait anger. Participants were randomly assigned to use one of four emotion regulation strategies (distraction, cognitive reappraisal, suppression, or no instruction) prior to listening to either an instigating or non-instigating imagined relationship scenario involving their current or recent past romantic partner. IPV-related behaviors consisted of aggressive verbalizations articulated during the scenario and self-reported intentions to behave aggressively assessed immediately following the relationship scenario. Prosocial outcomes, such as negotiation and desire to continue to engage in cognitive reappraisal with one's partner, were also evaluated as dependent variables.

Primary Hypothesis

A three-way interaction is predicted such that the interaction between instigation and emotion regulation strategy will vary based on the level of reported trait

anger. As the present study is designed to test perfect storm theory, the primary hypothesis is that higher IPV-related behaviors will be observed for those who experienced instigation (i.e., ATSS jealousy scenario), reported high levels of trait anger, and used weak inhibitory emotion regulation strategies (i.e., suppression or no instruction).

Secondary Hypotheses

(1a) Instigation and inhibition processes will interact such that among individuals who experience instigation, those who used weak inhibitory emotion regulation strategies (i.e., suppression and no instruction conditions) will endorse more IPV-related behaviors than those who engaged in strong inhibitory emotion regulation strategies (i.e., cognitive reappraisal or distraction conditions); (2) Within emotion regulation condition, greatest risk for IPV-related behaviors is predicted among those who use suppression or received no instruction on emotion regulation²; and (3) individuals who use cognitive reappraisal or distraction emotion regulation strategies will engage in more prosocial behaviors with their romantic partner (i.e., negotiation, continued cognitive reappraisal) than those who used suppression or were given no instruction on emotion regulation.

METHOD

Participants

Participants were undergraduates ($N = 180$) recruited from an introductory psychology courses at Purdue University. Participants were given course credit for study participation (two credits for one hour of participation). An a priori power analysis indicated that 184 subjects (23 subjects per independent group) were needed to detect a medium-sized effect at approximately 80% power ($\alpha = .05$). All participants were either (a) currently in a committed, heterosexual romantic relationship (mean relationship length = 22.70 months; see Table 1 for all demographic information), or (b) had been in a committed, romantic relationship within the past year (mean length of past relationship = 14.63 months) and reported an average of 4.11 months since the last romantic relationship. The majority of participants were approximately 19 years of age, White (83%), single/never married (93%), female (62%) domestic students (94%).

In order to meet inclusion criteria for this study participants had to endorse: (a) that they were in a heterosexual romantic relationship currently or within the past 12 months; and (b) a history of IPV perpetration within the past year. Undergraduate participants were administered several screening questions to assess eligibility for this study including: “Are you currently, or have you been in a heterosexual romantic relationship within the last 12 months (yes/no)?” IPV history was assessed via

self-reported endorsement of psychological and/or physical IPV within the past year (Revised Conflict Tactics Scale–2; CTS-2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996) for the current or most recent romantic relationship that occurred within the past 12 months. Four participants were excluded from data analysis for the following reasons: participant observed using their phone following the ATSS, participant accidentally skipped the first segment of the ATSS, and two incidences of equipment malfunction.

Design

The proposed study is a 4 x 2 between-subjects design in which participants were randomly assigned to use one of four emotion regulation strategies (i.e., cognitive reappraisal, suppression, distraction, and no instruction) while listening to one of two imagined relationship scenarios, either a scenario that is likely to provoke an urge to aggress (i.e., ATSS jealousy) or a scenario that does not promote an urge to respond aggressively (i.e., ATSS control).

Measures

Revised Conflict Tactics Scale: Physical Assault Subscale (CTS-2; Straus et al., 1996)

Participants reported the frequency with which they have committed acts of psychological (*stomped out of the room*) or physical (*slapped him/her*) aggression toward their partner on a scale from 0-6 (0 – *never* to 6 – *more than 20 times*) within the past year on the CTS-2. Only the psychological aggression and physical assault items will be used, for a total of 20 items. This measure was used to exclude any participants that have not endorsed psychological or physical aggression toward a

romantic partner within the past year from this study. This measure has demonstrated good consistency and reliability (Straus et al., 1996). Coefficient alpha for this sample was for .66 for psychological aggression, .70 for minor physical aggression and .95 for severe physical aggression.

State-Trait Anger Expression Inventory 2nd Edition (STAXI-II; Spielberger, 1999)

The STAXI is a 57-item assessment designed to measure anger from a state-trait personality perspective. The STAXI-II is comprised of six scales and five subscales and each item is rated on a 4-point scale of anger intensity or frequency ranging from 1 (*not at all or almost never*) to 4 (*very much so or almost always*). In the present study, the State and Trait Anger Scales were examined. The State Anger scale assess situation-specific feelings of anger. Higher scores on this scale indicate more intense, “in the moment” experiences of anger. The Trait Anger scale assesses dispositional differences in the way anger is experienced across multiple situations, and is comprised of the Angry Temperament and Angry Reaction subscales. Broadly, trait anger refers to the tendency to respond to a variety of situations with elevated levels and anger (Spielberger, 1988). The STAXI-2 has demonstrated good internal reliability and validity (Spielberger, 1999).

Mood Rating Scale (MRS)

The Mood Rating Scale was completed by participants immediately before and following the ATSS scenario in order to assess self-reported, current mood. This scale contains 15 items taken directly from the Positive and Negative Affective Schedule-Expanded Form (PANAS-X; Watson & Clark, 1994). Five of the items that

assesnyanger (e.g. *angry, hostile, irritable, disgusted, annoyed*) have been shown to produce an averaged anger summary score (Eckhardt & Crane, 2008; Eckhardt & Jamison, 2002) with good validity ($\alpha=.88$). This score was used to determine whether anger arousal was present following an instigating ATSS condition (i.e., jealousy), in comparison to the ATSS non-instigating condition (i.e., control).

Hostile Automatic Thoughts (HAT) Scale (Snyder et al., 1997)

Eleven items that comprise the physical aggression subscale of this self-report measure were included. This subscale was administered following the ATSS imagined relationship scenario, and participants were asked whether each thought occurred toward their partner after listening to the scenario (e.g., *I want to smack this person!; I hate this person so much I could kill him/her!; If someone really wants to mess with me, then they deserve to get roughed up*). Reliability among an undergraduate introduction to psychology participant pool was .94 for the physical aggression subscale (Snyder et al., 1997).

Articulated Thoughts in Simulated Situations (ATSS; Davison, Robins, & Johnson, 1983)

The ATSS paradigm was used to manipulate instigation within this study as participants were randomly assigned to listen to one of two imagined relationship scenarios, one of which is designed to increase anger arousal and promote an urge to respond aggressively while the other scenario serves as an affectively neutral or no instigation condition. In the ATSS jealousy scenario, anger is aroused by having participants imagine that they arrive home unannounced to overhear their romantic partner overtly flirting with a member of the opposite sex. In contrast, during the ATSS

control scenario participants overhear an affectively neutral conversation between another dyad while waiting for a friend at a restaurant (see Appendix C for complete ATSS instructions for each scenario by participant sex). Results from several prior studies have indicated that those in the ATSS jealousy condition experienced significantly greater anger arousal than those in the ATSS control condition (across sex; Eckhardt, 2007; Eckhardt & Crane, 2008; Maldonado et al., 2014) via self-reported changes in reported angry affect assessed before and after ATSS administration.

Participants were randomly assigned to listen to one of two short audio clips of an imagined relationship scenario (i.e., jealousy or control) and were instructed to imagine that the situation is actually occurring. Participants were then instructed to articulate their thoughts and feelings into a microphone during a pause after each scenario clip. Each ATSS scenario (i.e., control and jealousy) was divided into five short segments (15-25 seconds) separated by 30 second pauses during which participants were instructed to “talk out loud” about their true feelings and thoughts. Articulated verbalizations were recorded using MediaLab (Jarvis, 2012) software.

Recorded articulated verbalizations were transcribed and coded by six trained undergraduate research assistants that were blinded to the ATSS condition (Eckhardt, 2007; Eckhardt & Crane, 2008). These advanced undergraduate research assistants completed 20 hours of group and individual coding training on approximately 25 practice (non-participant) examples using an adapted ATSS coding manual (Eckhardt, 2007). An interclass correlation was calculated to evaluate inter-rater reliability, which was good ($r_{IC} = .83$). Articulations of verbal aggression (i.e., “*statements that put*

down, demean, insult, or that verbally engage the imagined character in an aggressive manner”), physical aggression (i.e., “*expressed desire...to push, shove, or hit*”) and belligerence (i.e., “*threatening, challenging, provoking, and strongly cynical statements that are designed to entice an altercation*”) were coded as count variables. An aggregate count variable comprised of the sum of physical aggression, belligerence, and verbal aggression articulations constituted the dependent variable of articulated aggressive verbalizations (Eckhardt, 2007; Eckhardt & Crane, 2008; Maldonado et al., 2014). The ATSS paradigm has demonstrated good validity and reliability in undergraduate samples (Eckhardt & Crane, 2008).

Desired Behaviors Inventory

Participants completed this self-report measure in order to assess their desire to behave aggressively or non-aggressively following both ATSS scenarios. This measure was completed after administration of the ATSS scenario, the MRS, and the HAT. Participants were asked to rate on a 5-point scale (1-*not at all* to 5-*very much*) how much they would like to engage in a variety of aggressive (e.g. *shove your partner*) and non-aggressive (e.g. *take a walk*) behaviors after listening to an ATSS scenario, if they had the opportunity to react. This measure is in the process of validation among a sample of undergraduates (see Appendix D for full measure).

Procedure

After informed consent was obtained (including consent for audio-recording), participants reported demographic information and indicated their responses to a variety of self-report measures on a computer via MediaLab software (Jarvis, 2012). The self-report questionnaire battery included several measures (in addition to several

others not used in the present analyses) in order to assess anger and hostile thoughts of physical and verbal aggression (STAXI-II; Spielberger, 1999; Hostile Automatic Thoughts (HAT) scale; Synder, et al., 1997) and physical IPV perpetrated within the last year (Revised Conflict Tactics Scale; CTS-2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996). Next, participants were administered the Mood Rating Scale (subset of items from the PANAS-X; Watson & Clark, 1994) to assess anger-related affect at baseline.

Participants were randomly assigned to one of four emotion regulation strategy conditions (distraction, reappraisal, suppression, or no instruction) and following completion of the MRS, an experimenter provided participants with emotion regulation instructions (see Appendix E for instructions by condition). Those assigned to the no instruction condition did not receive any additional information before listening to one of the two ATSS scenarios. Instructions for the cognitive reappraisal condition, in which participants were instructed to re-evaluate a situation in a less negative way, were drawn directly from work by Gross and colleagues (1998) and adapted to be employed during the ATSS scenario, and the concept for the distraction task was adapted from work by Paul and colleagues (2013) in which participants focused on the affectively neutral task of thinking of their route to and from class. Instructions for the suppression scenario were adapted from Gross and colleagues (1998) with the addition of explicit instructions to maintain an emotionally neutral facial expression³ (used in Burns, Isbell, & Tyler, 2008; Gross & Levenson 1993; 1997). In the present study, participants in the suppression condition (across ATSS scenarios) were instructed to not express any emotion (regardless of valence; Cole, Martin, & Dennis, 2004).

After listening to either instructions for employing an emotion regulation strategy or no instructions, participants were provided with an example scenario and were asked to respond based on the emotion regulation instructions they received. Experimenters provided participants with feedback on their accuracy in understanding the emotion regulation instructions in a structured manner (see Appendix F). Next, verbal instructions for the ATSS task were displayed on the computer screen and were also read aloud to participants by the experimenter. Participants were asked if they had any questions regarding the ATSS task, and if so, the experimenter provided clarification of the ATSS and/or emotion regulation tasks by restating either script as appropriate to the participant's question (see Appendix F).

Participants then listened to one of two ATSS scenarios (control or jealousy) and during five 30-second pauses throughout the scenario participants were reminded to articulate their authentic feelings and related thoughts during these pauses (versus engaging in their emotion regulation strategy while listening to the imagined scenario; see Appendix F) via a typed message on the screen that was consistent across all conditions: “‘Think out loud’ and share your *true* thoughts and feelings about the scenario.” Completion of the ATSS paradigm was followed immediately by the MRS, and then participants indicated their responses on the HAT and the Desired Behaviors Inventory. In order to offset any remaining negative affect following the experiment, participants viewed a brief comedy clip. At the conclusion of the experiment, participants were asked the following two questions as a manipulation check: “Now that you have completed the study, do you have any idea what the study was about?” and “How did the scenario make you feel?” Responses to these questions were

recorded by the experimenter. Finally, participants were verbally debriefed on the details of the study (including the specific purpose of assessing partner-direction aggression), and received a copy of a written debriefing form signed by the experimenter.

Data Analyses

A three-way interaction was predicted, informed by “perfect storm” theory (Finkel et al., 2012; Finkel & Eckhardt, 2013), such that the interaction between instigation and emotion regulation strategy will vary based on self-reported level of trait anger. In order to examine the primary three-way interaction hypothesis, and the secondary two-way hypotheses, generalized linear modeling (GLM) was used.

Examination of the residuals of hostile thoughts of physical aggression and aggressive verbalizations indicated non-normal distribution of the data with positive skew. In order to account for this distribution, two types of general linear modeling (GLM) were used: negative binomial, a model which allows the residual variance to exceed the predicted dependent variable mean (over-dispersion) if necessary; and Poisson, a model which assumes that the dependent variable mean is equal to its residual variance (Field, 2013). Both models were examined using maximum likelihood estimation within IBM SPSS Statistics Version 22.0 with Fisher parameter estimation. These GLM models were run separately with two different dependent variables: aggressive verbalizations and desire to engage in IPV-related behaviors toward one’s current or recent past romantic partner. The model for desired IPV-related behaviors included the main effects of instigation (dichotomous), emotion regulation strategy (categorical), and trait anger (continuous) and all interactions (including 2- and

3-way). Unfortunately, there was limited variability in the ATSS aggressive verbalizations dependent variable as 76% of participants did not verbalize any aggressive statements. Several statistical approaches were used in an attempt to fit these data to an appropriate model including the use of a variety of GLM models with and without bootstrapping (i.e., zero-inflated, log-link) and logistic regression in which endorsement of any aggressive verbalization was examined as a dichotomous variable. Only models that included the main effects exclusively met convergence criteria in predicting aggressive verbalizations. Entry of any interaction effects into tested models rendered the Hessian matrix singular and validity of the model uncertain and thus these results were not reported. The Akaike Information Criteria (AIC) and Bayesian Information Criteria (BIC) values were examined across models to compare fit such that smaller AIC and BIC values indicate better fit. A negative binomial model was the ultimately best fit for ATSS aggressive verbalizations, $-2\Delta LL(5) = 100.74$, $p < .0001$ (AIC = 379.83; BIC = 411.70) and a Poisson model was found to fit significantly better than a negative binomial model for self-reported IPV-related behaviors, $-2\Delta LL(21) = 227.45$, $p < .0001$ (AIC = 1089.54; BIC = 1153.34).

RESULTS

ATSS Anger Arousal Manipulation Check

Anger summary scores from the Mood Rating Scale (MRS) completed before and after the ATSS jealousy scenario were examined using MANOVA to determine whether listening to the ATSS jealousy scenario was related to increases in anger arousal. An anger arousal over time by instigation interaction was observed $F(1,171) = 67.98, p < .01$, such that participants randomly assigned to the ATSS jealousy scenario, but not the ATSS control scenario, reported a significant increase in angry arousal following the ATSS paradigm (see Table 2). This finding confirmed that the manipulation of the I³ processes of instigation and no instigation was successful. Anger arousal ratings over time did not differ by emotion regulation condition $F(3,171) = 1.18, p = .32$. No additional interaction effects were found for instigation by emotion regulation condition $F(3,171) = 1.70, p = .17$, or time, instigation, and emotion regulation strategy $F(3,171) = 1.55, p = .21$. Furthermore, results from pairwise comparisons did not indicate any differences in anger arousal between emotion regulation conditions. Adding gender as a covariate to these analyses did not impact the results.

Examination of Gender as a Covariate

ATSS Aggressive Verbalizations

Results did not indicate a significant main effect for gender, $\chi^2(1) = 2.40, p = .121$, when examined as a covariate main effect alongside instigation, emotion regulation, and trait anger. Thus gender was not included in the model as a covariate for the dependent variable of aggressive verbalizations.

Hostile Automatic Thoughts (HAT) of Physical Aggression

Results indicated a significant main effect for gender, $\chi^2(1) = 4.68, p < .05$, and interactive effects for gender by emotion regulation condition, $\chi^2(3) = 8.04, p < .05$, and gender by ATSS scenario, $\chi^2(1) = 15.34, p = .94$ on self-reported HAT physical aggression. Three-way interactions that included gender (i.e., gender by ATSS scenario by emotion regulation condition) were all non-significant (see table 3). The interaction for gender by trait anger was also not significant, $\chi^2(1) = .53, p = .47$. Further examination of significant 2-way interactions involving gender revealed that women in the instigation condition endorsed more hostile automatic thoughts of physical aggression than men in the instigation condition $\chi^2(1) = 15.34, p < .001$. Women in the cognitive reappraisal condition reported fewer hostile automatic thoughts of physical aggression than men in the same condition $\chi^2(1) = 3.70, p = .054$. Gender remained in the models as a main effect and all two-way gender interactions were included as well. The 3-way interactions involving gender were excluded from the models as they were not predictive of outcome, were not included in a priori hypotheses, and their removal makes for more parsimonious interpretations.

ATSS Aggressive Verbalizations

A significant main effect was found for emotion regulation condition $\chi^2(3) = 14.48, p = .002$, on ATSS Aggressive Verbalizations, such that significantly fewer aggressive verbalizations were articulated among those in the cognitive reappraisal condition $\chi^2(1) = 8.67, p = .003$ ($\beta = -1.41$, 95% Wald CI = -2.35 - -0.47). A significant main effect was also observed for instigation $\chi^2(1) = 39.03, p < .001$ ($\beta = 3.35$, 95% Wald CI = 2.30 – 4.40) such that those who experienced instigation articulated more aggressive verbalizations than those in the no instigation condition. The estimated marginal mean number of aggressive verbalizations by instigation and emotion regulation strategy is displayed in Table 4. The main effect of trait anger was also significant $\chi^2(1) = 4.83, p = .028$ ($\beta = .31$, 95% Wald CI = .03 – .58), such that higher dispositional anger was associated with more aggressive verbalizations.

Endorsed Hostile Automatic Thoughts (HAT) of Physical Aggression

Results supported a significant 3-way interaction (i.e., the primary hypothesis of “perfect storm” theory) between instigation, emotion regulation condition, and trait anger, $\chi^2(1) = 20.34, p < .001, r = .62$, such that “perfect storm” conditions were found exclusively for those who experienced instigation, were in the suppression condition, and endorsed high (versus low) levels of trait anger, $\chi^2(1) = 5.65, p = .017, \beta = .31$, 95% Wald CI = [.06 - .57] (see Figure 1). Several significant 2-way interactions were also found, notably instigation by emotion regulation strategy, $\chi^2(3) = 10.38, p < .02$, such that among those who experienced instigation (versus no instigation), participants in the suppression condition endorsed significantly more hostile automatic thoughts of physical aggression $\chi^2(1) = 6.87, p = .009, \beta = .32$, 95% Wald CI = [.08 - .57] (see

Figure 2), than those in any other condition (i.e., no instruction, cognitive reappraisal, distraction). Data reflecting the estimated marginal mean number of hostile automatic thoughts of physical aggression by instigation and emotion regulation strategy is displayed in Table 4. The interaction effect of instigation by trait anger was also significant, $\chi^2(1) = 10.38, p = .016$, such that the positive association between instigation and hostile automatic thoughts of physical aggression was significantly more pronounced for those who endorsed high versus low dispositional anger. Emotion regulation condition by trait anger was also a significant interaction, $\chi^2(1) = 22.34, p < .001$, such that the positive association between emotion regulation strategies and endorsement of hostile automatic thoughts of physical aggression was more pronounced among those who endorsed high versus low trait anger. Within this interaction, there were no significant differences between emotion regulation conditions. Significant main effects were also found for instigation, $\chi^2(1) = 45.12, p < .001$, and trait anger, $\chi^2(1) = 28.82, p < .001$, but not for emotion regulation condition, $\chi^2(3) = 6.32, p = .097$.

Prosocial Outcomes

Desire to engage in negotiation with one's romantic partner was endorsed most frequently (on the Desired Behaviors Inventory) following the use of cognitive reappraisal in the no instigation ATSS scenario, $F(3, 164) = 2.90, p = .037$. A significant main effect for instigation was also observed such that greater desire to engage in negotiation was observed for those in the no instigation condition, $F(1, 164) = 10.30, p = .002$. Neither emotion regulation condition nor instigation predicted desire to engage in cognitive reappraisal following completion of the ATSS paradigm.

DISCUSSION

Results provided support for the primary hypotheses that “perfect storm” conditions for IPV-related desired behavior (i.e., hostile automatic thoughts of physical aggression) would be observed for individuals with high levels of trait anger who responded to provocation in the context of an imagined relationship scenario by engaging in the weak inhibitory strategy of suppression. Of note, those that were given no instruction on emotion regulation prior to experiencing instigation endorsed fewer hostile automatic thoughts of physical aggression than those in the suppression condition across 3-way and 2-way moderation analyses (this was not predicted). Results also confirmed a secondary hypothesis that greatest risk for hostile automatic thoughts of physical aggression occurred for those in the suppression condition who experienced provocation. The secondary hypothesis of a main effect for emotion regulation, such that those in the suppression and no instruction conditions would endorse more hostile automatic thoughts of physical aggression than those in the cognitive reappraisal and distraction conditions was not supported. Those who used cognitive reappraisal, but not distraction (contrary to prediction), endorsed a greater desire to engage in negotiation with their romantic partner than those in the no instruction or suppression conditions. Surprisingly, distraction was not an adaptive strategy for emotion regulation, as estimated marginal mean values for hostile

automatic thoughts of physical aggression for those in the distraction condition were comparable to those in the no instigation condition and were elevated in comparison to those who use cognitive re-appraisal. While gender moderated the effect of instigation and emotion regulation on hostile automatic thoughts of physical aggression, “perfect storm” conditions for IPV-related behaviors observed in this study were present across sex. Prior research has generally found equivalent rates across sex for IPV perpetration in the context of many processes that confer risk for aggressive responding (Archer, 2000; Birkley & Eckhardt, 2015; Eckhardt & Crane, 2008; Maldonado et al., 2014).

The effects of emotion regulation condition and trait anger on IPV-related responding varied in this study between the HAT physical aggression scale and ATSS verbalizations. An explanation for the difference in findings across dependent variables may be attributed to extended engagement in emotion regulation during the imagined relationship scenario. Although participants were reminded to share their true thoughts and feelings during pauses in the imagined relationship scenario via displayed prompts and detailed instructions from experimenters, it is possible that they continued to engage in an emotion regulation strategy (i.e., suppression) in a way that dampened their articulated aggressive verbalizations (Maldonado et al., 2014). The use of a between subjects design for the ATSS paradigm, versus a within subjects design (Eckhardt & Crane, 2008; Maldonado et al., 2014), may have reduced variability within the data necessary to assess interactions between I³ processes. Furthermore, the manner in which participants reported desire to engage in IPV-related behaviors may have influenced the results. Activation of aggressive scripts and schemas is a highly automatic process (Beck, 1999; Berkowitz, 2012), and it is possible that articulating

this chain of cognitions and related affect may prove difficult or feel unnatural for some. Finally, the cognitive demand of engaging in emotion regulation strategies throughout the ATSS paradigm may have influenced the articulation of noticed thoughts and feelings as posited by Maldonado and colleagues (2014).

Implications

Findings in support of “perfect storm” theory illustrate the complex nature by which risk factors for IPV perpetration interact, and demonstrate the need for further investigation of mechanisms of risk using I³. Engagement in weak inhibitory emotion regulation strategies, such as suppression, places vulnerable individuals at greater risk for engaging in other processes likely to promote aggressive responding such as activation of hostile and aggressive cognitive scripts (Beck, 1999; Berkowitz, 2012) or engagement in disinhibitory behaviors (i.e., alcohol consumption) in order to cope with mood states. When individuals prone to experience elevated anger arousal are provoked in the context of a romantic relationship, numerous interactive processes may confer risk for aggressive responding including past use of IPV (Maldonado et al., 2014), aggressivity (Eckhardt & Crane, 2008), restrictive emotionality (Cohn, Jakupcak, Seibert, Hildebrandt, & Zeichner, 2010), and internalizing negative emotions (Kim & Capaldi, 2004). Therefore further investigation of “perfect storm” theory, in which a variety of risk factors for IPV perpetration are examined, is paramount to informing IPV etiology, assessment, and intervention as use of this organizational framework will help indicate for whom and under what circumstances IPV-related behaviors are most likely to occur.

Processes shown to decrease the likelihood of IPV-related behaviors are also important in informing IPV assessment and intervention efforts. Interventions designed to reduce risk for IPV perpetration would likely benefit from discussing how use of cognitive reappraisal, suppression, and distraction in managing anger arousal is likely to either reduce or promote IPV-related behavior, particularly in the context of acute anger arousal. Practiced use of more adaptive strategies for emotion regulation (i.e., cognitive reappraisal) that promote re-evaluation of aggressive scripts for behavior, appears particularly warranted (Murphy & Eckhardt, 2005), as engagement in maladaptive emotion regulation is often an automatic, reflexive process. In addition, discussion of attention allocation would likely be a novel but important addition to IPV interventions as it appears to confer risk for IPV such that perpetrators of IPV display implicit attitudes that favor attention to aggressive stimuli (Eckhardt, Samper, Suhr, & Holtzworth-Munroe, 2012). Distraction of attention away from aggression-promoting cues in the environment likely reduces acute risk for IPV responding, while narrowed focus on aggression-promoting cues (i.e., provocation; partner's criticisms of you) alongside weak inhibition (i.e., alcohol consumption and thought suppression; Gallagher, Lisco, Parrott, & Giancola, 2014) and a tendency to respond to many situations with anger facilitates "perfect storm" conditions that predict greatest risk for IPV-related behaviors.

There is monumental work to be done in refining intervention approaches for IPV perpetration as current treatments (i.e., CBT, Duluth Model) are no better than probation-only meetings in reducing IPV recidivism (Babcock, Green, & Robie, 2004; Labriola et al., 2008). In the midst of this desperate need to improve current IPV

interventions, the predominant model of IPV, power and control theory (Pence & Paymar, 1993), posits that anger and emotion regulation targets for treatment would be providing offenders with “excuses” for their IPV-related behaviors (Gondolf, 2012; Pence & Dasgupta, 2006). Proponents of the Duluth Model, an intervention largely informed by power and control theory (Pence, 1983), argue that addressing patriarchal socialization patterns should be the focus of intervention efforts. However, largely as a function of the ineffectiveness and sometimes confrontational nature of current IPV intervention approaches, momentum has been building in consideration of other types of treatment, particularly those that have shown promise among high-risk, treatment-resistant populations (see Eckhardt et al., 2013 for review). Motivational interviewing approaches (Alexander et al., 2010), cognitive-behavioral therapy for substance use disorder (Easton et al., 2007; Stuart et al., 2013), and dialectical behavior therapy (DBT; Linehan, 2003; Cavanaugh, Solomon, & Gelles, 2011) would provide a solid framework for integrating the processes of anger, emotion regulation, and attention allocation, and are particularly well-suited for treatment-resistant populations at higher risk for severe IPV recidivism. Of note, *practice* of cognitive reappraisal *within* the dyad among those reporting low to moderate IPV severity would likely promote negotiation (Babcock, Johnson, Gottman, & Yerington, 2000; Stith, Rosen, McCollum, & Thomsen, 2004) within the couple alongside cognitive flexibility in responding to provocation within the relationship. Further investigation of the efficacy of couple-based cognitive-behavioral interventions in reducing risk for IPV-related behaviors appears warranted and logical as IPV occurs within the context of the dyad, however, this form of IPV intervention is hotly contested across theoretical perspectives

(Gondolf, 2014). Theoretical and socio-political disagreements in identified targets for further IPV research and intervention can stymie the progression of the field and block the refinement of current approaches in the goal of reducing IPV recidivism and promoting adaptive responding to arousal within dyads. The use of I³ as a process-oriented approach for the prediction of IPV will ultimately promote empirical investigation of complex mechanisms of risk across theoretical orientations, thereby informing intervention by targeting conditions that create the “perfect storm” for IPV perpetration.

Limitations & Future Directions for Research

There were several limitations to the present study that highlight avenues for further research. Findings are somewhat limited by the use of an undergraduate, heterosexual, primarily White sample with a self-reported history of low-to-moderately severe psychological IPV perpetration. As observed in other studies with a college undergraduate population, the majority of participants articulated and endorsed a limited range of IPV-related behaviors in terms of frequency and severity, even in the context of provocation (Maldonado et al., 2014). While more minor acts of psychological IPV perpetration are the most commonly observed across dating populations (Johnson, 1995), it is important to also examine the interactive roles of provocation, trait anger, and emotion regulation among those with a history of moderate-to-severe IPV perpetration. Notably, replication of this investigation among populations at higher risk for IPV perpetration, such as individuals seeking substance use treatment and Veterans with PTSD (Schumm, O’Farrell, Murphy, & Fals-Stewart, 2009; Murphy & O’Farrell, 1996; Taft et al., 2011), would likely inform common

underlying mechanisms of externalizing behavior and psychopathology through the exploration of trait anger and emotion regulation.

Another limitation of the present study is that participants were assigned to engage in various emotion regulation strategies that did not allow for examination of *choice* of strategy within the context of anger arousal and provocation over time, an important distinction requiring further investigation (Sheppes, Sheibe, Suri, & Gross, 2011). Findings from daily diary studies, in which risk factors for IPV perpetration are evaluated within dyads and across sex, have identified anger arousal as an acute impellance process (Crane & Eckhardt, 2013; Crane & Testa, 2014), such that reports of angry arousal within the dyad were closely followed in time by IPV perpetration. Longitudinal daily diary designs that examine choice of emotion regulation strategies during *acute* provocation and angry arousal within romantic relationships would allow for a more ecologically valid examination of causal interactive I³ processes for IPV risk. A longitudinal design would also promote further investigation of flexibility in use of emotion regulation as an adaptive mechanism (Westphal, Seivert, & Bonanno, 2010) for coping with anger arousal in response to provocation within romantic relationships.

In conclusion, the present study provided evidence that even short-term use of suppression is a *weak* inhibitory emotion regulation strategy that *potentiates* IPV risk following provocation, particularly for those with high levels of dispositional anger, thus creating “perfect storm” conditions for IPV perpetration. In addition, results provided support for the use cognitive reappraisal (and not distraction) as a prosocial approach that facilitates negotiation within romantic relationships, thereby reducing

risk for IPV perpetration. IPV interventions would likely benefit from using “perfect storm” theory as a framework to discuss for whom (i.e., those prone to respond to many situations with increased anger arousal) and under what conditions (i.e., provocation, suppression) one is at greatest risk for IPV perpetration. A cognitive-behavioral skills-based approach to treatment that involves assessment of: (a) the activation of hostile scripts that promote responding with angry arousal and (b) emotion regulation difficulties, alongside practice of *adaptive* strategies (i.e., cognitive reappraisal) for emotion regulation *during* anger arousal, would likely be most beneficial in mitigating risk for IPV-related behaviors.

NOTES

¹The process of defining emotional constructs in general can be particularly difficult (Izard, 2010), especially as anger appears to be a somewhat heterogeneous as it is comprised of several variables that seem to hold relatively equal weight in representing the construct (Barrett, 2013).

²This main effect is of importance theoretical significance as evaluation of distraction in relationship to the other emotion regulation conditions in predicting IPV-related behavior has yet to be empirically investigated.

³Measurement of behavioral (facial expressions) and physiological processes (skin conductance, cardiac interbeat interval, late positive potential) during employment of these instructions offer evidence that participants comply with these emotion regulation directions (Paul et al., 2013); however, people likely vary in the degree to which they are effective in regulating their emotions, particularly if they are asked to suppress positive or negative emotions (Butler & Gross, 2004; discussed in Burns, Isbell, & Tyler, 2008).

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APPENDICES

Appendix A

Table 1

Demographic Variables for Total Sample (N = 180)

	<u>Mean (SD)</u>	<u>Percentage of Sample</u>
Age	19.32 (.18)	
Education (Years)	10.51 (.43)	
Duration of current relationship*	22.70 (1.13)	
Duration of most recent past relationship*	14.63 (12.58)	
Months since end of last relationship*	4.11 (2.83)	
Gender		
Female		62%
Male		38%
Ethnicity		
Hispanic or Latino		4%
Non-Hispanic or Latino		96%
Race		
Black or African American		3%
East Asian		6%
Southeast Asian		2%
White		83%
More than one race		4%
Other**		2%
Marital Status		
Single/Never married		93%
Married		2%
Not married & Cohabiting		4%
Divorced, widowed, or separated		1%

(table continues)

	<u>Mean (SD)</u>	<u>Percentage of Sample</u>
Number of Children		
0		91%
1 - 4		9%
Student Status		
Domestic		94%
International		6%

Note. *Relationship refers to romantic relationship. **Other racial categories included American Indian or Native Alaskan and Hawaiian or Pacific Islander.

Table 2

Participant Ratings of Angry Arousal Before and After ATSS Paradigm by Scenario and Emotion Regulation Condition

ATSS Scenario	<u>Angry Arousal MRS Composite Score</u>	
	<u>Pre-ATSS</u>	<u>Post-ATSS</u>
	Mean (SD)	Mean (SD)
Emotion Regulation Condition		
No Instigation	11.64 (6.46)	9.69 (5.46)
No Instruction	13.18 (8.02)	11.32 (6.82)
Cognitive Reappraisal	13.12 (6.45)	11.31 (6.05)
Suppression	10.86 (5.65)	8.90 (4.01)
Distraction	9.00 (4.62)	6.81 (2.60)
Instigation	10.66 (6.37)	16.37 (8.73)
No Instruction	11.38 (7.70)	14.25 (8.81)
Cognitive Reappraisal	9.91 (5.00)	17.03 (8.31)
Suppression	11.05 (6.12)	16.81 (8.94)
Distraction	10.29 (6.64)	17.33 (9.06)

Note. MRS = Mood Rating Scale. ATSS =Articulated Thoughts in Simulated Situations.

Table 3

Estimated Marginal Mean of Hostile Automatic Thoughts (HAT) of Physical Aggression and Aggressive Verbalizations by Instigation and Emotion Regulation Condition at Mean Standardized Trait Anger Score

ATSS Scenario	N	HAT Physical Aggression			Aggressive Verbalization		
		M	SE	95% Wald CI	M	SE	95% Wald CI
No Instigation							
Emot. Reg. Condition							
No Instruction	22	11.44	.74	10.07 - 12.98	.03	.02	.01 - .12
Cognitive Reappraisal	26	12.33	.75	10.95 - 13.88	.01	.01	.00 - .04
Suppression	22	11.18	.72	9.86 - 12.68	.07	.04	.03 - .21
Distraction	21	10.55	.78	9.14 - 12.19	.04	.03	.01 - .14
Instigation							
No Instruction	24	13.56	.83	12.03 - 15.29	1.24	.36	.85 - 2.48
Cognitive Reappraisal	23	14.62	.82	13.10 - 16.33	.35	.14	.16 - .77
Suppression	21	18.33	1.03	16.41 - 20.47	2.07	.53	1.24 - 3.43
Distraction	21	15.18	.90	13.51 - 17.05	1.24	.36	.71 - 2.18

Note. N = number of participants. M = mean. SE = Standard Error. CI = Confidence Interval. ATSS = Articulated Thoughts in Simulated Situations. Emot. = Emotion. Reg. = Regulation. Use of an estimated marginal mean adjusted for the covariates of trait anger and gender.

Table 4

Hostile Automatic Thoughts of Physical Aggression by Instigation, Emotion Regulation, Trait Anger and Gender

	Wald chi-square	df	p
Main Effects			
Gender	14.68	1	.03
Emotion Regulation	6.32	3	<.001
Instigation	45.15	1	<.001
Trait Anger	28.82	1	.03
Two-Way Interactions			
Instigation x gender	15.34	1	<.001
Emotion Regulation x gender	8.04	3	.05
Trait anger x gender	.66	1	.42
Instigation x emotion regulation	10.38	3	.02
Instigation x trait anger	10.78	1	.001
Emotion Regulation x trait anger	22.34	3	<.001
Three-Way Interaction*			
Instigation x emotion regulation x trait anger	20.34	3	<.001

Note. Standardized scores for trait anger were used within the model.

Appendix B

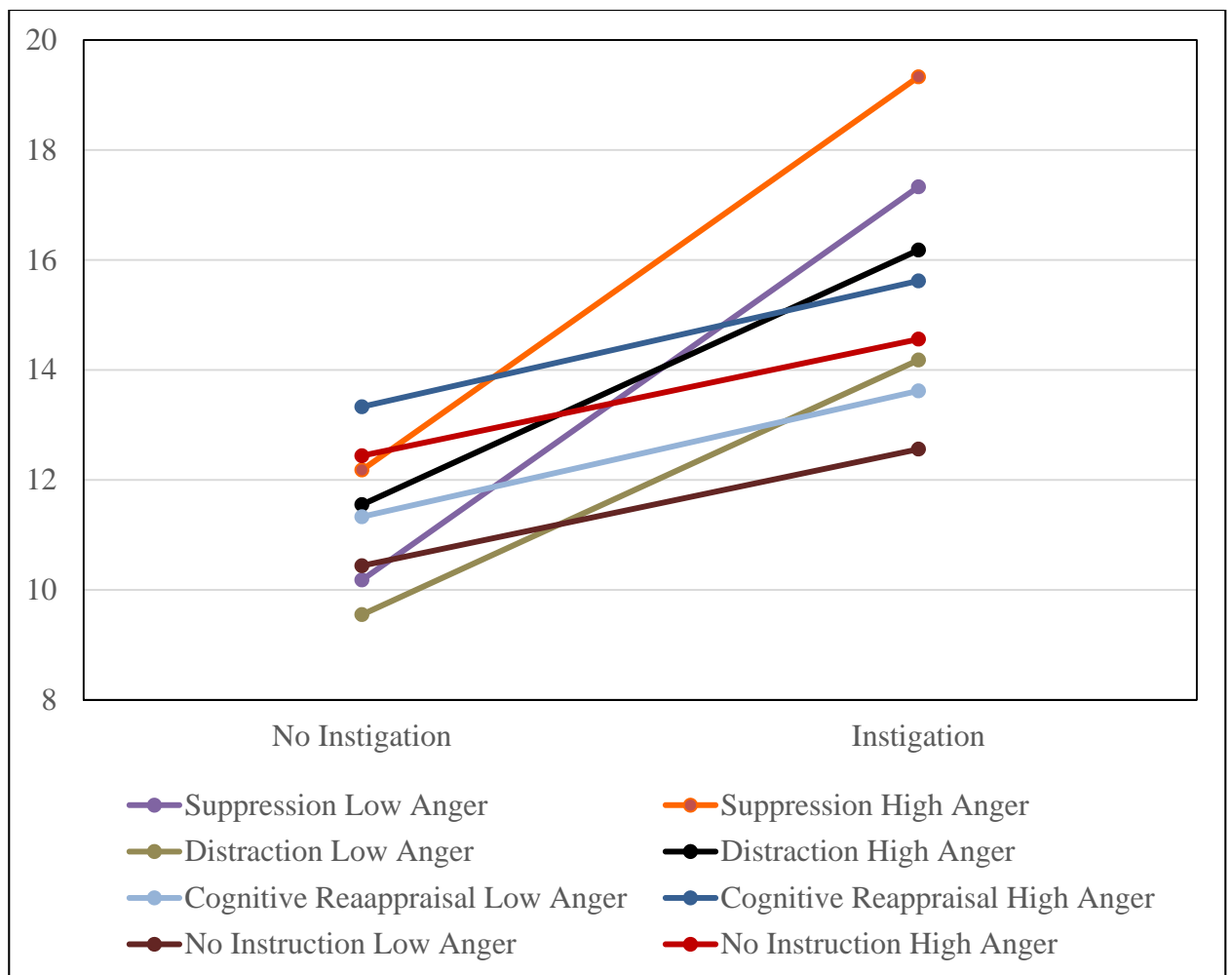


Figure 1. “Perfect storm” conditions observed in a three-way interaction between instigation, emotion regulation, and trait anger in the prediction of hostile automatic thoughts of physical aggression.

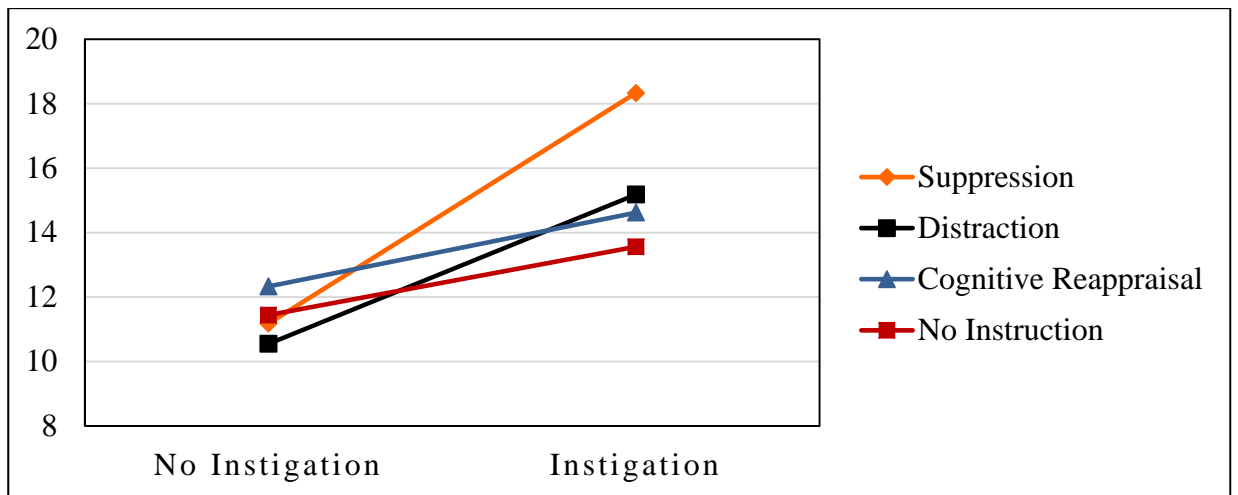


Figure 2. Effects of emotion regulation and instigation on hostile automatic thoughts of physical aggression.

Appendix C

ATSS transcripts by scenario and gender.

CONTROL SCENARIO – (BOTH GENDERS)

Narrator: You are meeting your partner at a restaurant for dinner and are seated before they arrive. While you are waiting for your partner, you notice you can hear the couple at the table next to you having a conversation. You decide to listen to what they are talking about while waiting. Listen now as a couple you do not know are talking.

Segment 1

Male: What do you feel like doing this weekend?

Female: I'm not sure, what's the weather going to be like. Have you heard?

Male: I think I heard this morning that it's supposed to be sunny all weekend with a chance of rain on Sunday.

Female: Great, because I heard that on Saturday there's a concert in the park.

Segment 2

Male: Is it in the afternoon or the evening? I have to work till 2:00, but I have the rest of the day free.

Female: I don't think it's till late afternoon and it runs all evening.

Male: Great! What time should I pick you up?

Segment 3

Female: How about around 5, I'll pack a picnic.

Male: That sounds great! Hey, do you want to see a movie on Sunday?

Female: Sure, what do you feel like seeing?

Male: I don't know, how about a comedy?

Female: That sounds great.

Segment 4

Male: Hey this place is great. How's your food?

Female: It's really good, I'm glad you picked this restaurant. Wasn't it written up in the paper last week?

Male: No, actually my roommate told me about it.

Segment 5

Female: Do you want some coffee or should we just get the check?

Male: Why don't we just get the check, I'm pretty full.

Female: Yeah, it's getting kind of late, we should go.

JEALOUSY SCENARIO – MALE

Narrator: It's Friday and you have just gotten out of class. Usually on Friday night you go out after class with the guys, and don't get home until late at night. Tonight, however, you're not really up to going out and you decide to go to your girlfriend's apartment instead. As you get there, you notice a strange car in the driveway. Entering her house quietly, you hear your girlfriend talking to a guy you know in the living room. They are sitting next to each other on the sofa. They didn't hear you come in, and don't know that you are in the next room. You decide to keep yourself hidden and just listen to their conversation. Listen now as your girlfriend talks to a guy you know on the sofa. Remember, you have decided to just listen to your girlfriend and this guy, and not interrupt their conversation.

Segment 1

Girlfriend: I'm so glad you came over tonight!

Man: Me too. So what would you like to do tonight? Go get something to eat? See a movie?

Girlfriend: You know what I was thinking? It would be *so* much better if we could just stay in tonight. OK?

Segment 2

Man: It's really nice of you to invite me over for dinner tonight.

Girlfriend: I love to cook for someone who appreciates good food.

Man: This is really great.

Girlfriend: And I've got a "SPECIAL" dessert planned for you too!

Segment 3

Girlfriend: Man, my classes were really rough today. My chem class is killing me!

Man: Awww.. Can I give you a backrub?

Girlfriend: Oh yeah.. that feels so good. Right there! I haven't felt this relaxed in a long time.

Segment 4

Girlfriend: Damn! I can't figure out what's wrong with this stupid Wii!

Man: Here let me take a look at it. (man fixes it). There we go, all set!

Girlfriend: I swear, I've asked my boyfriend at least ten times to fix this thing. Thank God you're here tonight. Let's see what's on Netflix. Will you hand me the controller?

Man: Yeah sure. So what should we watch tonight? How about a nice romantic movie?

Girlfriend: A romantic movie? What would YOU know about romance?

Man: I think I know a few things about that area.

Girlfriend: Oh really!

Segment 5

Girlfriend: Can I get you something to drink? Beer, wine, pop, anything?

Man: Beer sounds good.

Girlfriend: Here you go. (Hands him a beer)

Man: Thanks a lot. Boy, I wouldn't mind this kind of attention everyday!

Girlfriend: Yeah? The way my relationship is going who knows what will happen.

JEALOUSY SCENARIO – FEMALE

Narrator: It's Friday and you have just gotten out of class. Usually on Friday night you go out after class with the girls and don't get home until late at night. Tonight, however, you're not really up to going out and you decide to go to your boyfriend's apartment instead. As you get there, you notice a strange car in the driveway. Entering his house quietly, you hear your boyfriend talking to a girl you know in the living room. They are sitting next to each other on the sofa. They didn't hear you come in, and don't know that you are in the next room. You decide to keep yourself hidden and just listen to their conversation. Listen now as your boyfriend talks to a girl you know on the sofa. Remember, you have decided to just listen to your boyfriend and this girl, and not interrupt their conversation.

Segment 1

Boyfriend: I'm so glad you came over tonight!

Woman: Me too. So what would you like to do tonight? Go get something to eat? See a movie?

Boyfriend: You know what I was thinking? It would be so much better if we could just stay in tonight. OK?

Segment 2

Woman: It's really nice of you to invite me over for dinner tonight.

Boyfriend: I love to cook for someone who appreciates good food.

Woman: This is really great.

Boyfriend: And I've got a "SPECIAL" dessert planned for you too!

Segment 3

Boyfriend: Man, my classes were really rough today. My chem class is killing me!

Woman: Awww.. Can I give you a backrub?

Boyfriend: Oh yeah.. that feels so good. Right there! I haven't felt this relaxed in a long time.

Segment 4

Boyfriend: Damn! I can't find the batteries for this stupid controller!

Woman: Here, let me see what kind of batteries it takes. (woman looks at it). I've got extra batteries in my purse. Yeah, here we go, all set!

Boyfriend: I swear, I've asked my girlfriend at least ten times to get new batteries for this thing. Thank God you're here tonight. Let's see what's on Netflix. Oh, hey, will you hand me the controller now?

Woman: Yeah sure. What should we watch tonight? How about a nice romantic movie?

Boyfriend: A romantic movie? What would YOU know about romance?

Woman: I think I know a few things about that area.

Boyfriend: Oh really!

Segment 5

Boyfriend: Can I get you something to drink? Beer, wine, pop, anything?

Woman: Wine would be nice.

Boyfriend: Here you go. (Hands her a glass of wine)

Woman: Thanks a lot. Boy, I wouldn't mind this kind of attention everyday!

Boyfriend: Yeah? The way my relationship is going who knows what will happen.

Appendix D

Desired Response Inventory

The following is a list of actions that you may wish to perform at this moment, but are not possible at this time. Please use the scale provided below to indicate, if you had the chance right now, how much you would like to do each of the following actions after listening to the relationship scenario.

Not At All		Maybe		Very Much
1	2	3	4	5

After listening to the scenario, how much would you like to...

1. Take a walk
2. Hold in your true feelings
3. Leave the room
4. Shove your partner
5. Think about something other than the scenario
6. Show your partner you care about them
7. Think of the scenario in a less negative way
8. Stomp out of the room
9. Keep your thoughts about the scenario to yourself

10. Shout at your partner
11. Reconsider your initial thoughts about the scenario
12. Respect your partner's feelings
13. Think about your partner's motives in a less negative way
14. Keep your thoughts about your partner to yourself
15. Work out the problem with your partner

Scoring

Suppression: 2 + 9 + 14

Distraction/Avoidance: 1 + 3 + 5

Cognitive Reappraisal: 7 + 11 + 13

*Negotiation: 6 + 12 + 15

*Intimate Partner Violence Perpetration (IPV): 4 + 8 + 10

*IPV and negotiation items were adapted from the CTS-2 (Straus et al., 1996)

Appendix E

Those randomly assigned to the distraction condition were given the following instructions:

“We will now have you listen to an audio-recorded scenario. Some people may find these scenarios to be upsetting or frustrating. But, like in many situations, there are different ways to think about it. Please imagine your way to and from your introduction to psychology course as soon as the scenario begins. In other words, during the scenario you will be imagining your route to and from this class, including your mode of transportation, what streets you travel down, and who and what you may see along the way. Try to focus on thoughts and images related to your route to and from this class and not on the content of the scenario. Continue to think about the thoughts and images of your route to class for the entire duration of the scenario, including after pauses where we will ask you to share your thoughts and feelings out loud.”

Participants randomly assigned to the cognitive reappraisal were administered the following instructions:

“We will now have you listen to an audio-recorded scenario. Some people may find these scenarios to be upsetting or frustrating. But, like in many situations, there are different ways to think about it. We would like you to think of the scenario in a less negative way. Specifically, we ask that you try to think of the scenario objectively and try to reconsider any initial thoughts about the scenario in a way that is less upsetting or frustrating to you. Again, please try to think of the scenario in a less negative way.”

Those randomly assigned to the suppression condition listened to the following instructions:

“We will now have you listen to an audio-recorded scenario. Some people may find these scenarios to be upsetting or frustrating. But, like in many situations, there are different ways to think about it. If you have feelings as you listen to the scenario, please try your best not to let those feelings show. In other words, as you listen to the scenario, try to behave in such a way that a person watching you would not know that you were feeling anything. Try to keep your face emotionally neutral by maintaining a neutral facial expression. Listen to the scenario carefully, but please try to behave so that someone watching you would not know that you are feeling anything at all.”

Appendix F

Emotion Regulation Strategy of Suppression: Experimenter Script

Experimenter Say: **“We will now have you listen to an audio-recorded scenario. Some people may find these scenarios to be upsetting or frustrating. But, like in many situations, there are different ways to think about it. If you have feelings as you listen to the scenario, please try your best not to let those feelings show. In other words, as you listen to the scenario, try to behave in such a way that a person watching you would not know that you were feeling anything. Try to keep your face emotionally neutral by maintaining a neutral facial expression. Listen to the scenario carefully, but please try to behave so that someone watching you would not know that you are feeling anything at all.”**

“As an example of what I’m talking about, imagine that you are driving with a friend when someone in another car cuts in front of you without warning. What might you do that would be an example of acting in a way that someone wouldn’t know what you were feeling?”

Have the participant generate at least one example.

Then say: “Exactly” and repeat or paraphrase the example she/he provided.

Then say: “You could also say <pick two DIFFERENT examples from the “acceptable examples” list below.

If participant cannot come up with an example, say: “Well, for example, you might keep thinking about the situation even though you’re not talking about it.” Can you think of any other examples like that?”

If they generate an example here, repeat the step above.

If they cannot generate an example, say: “Here are some other things you may do so that someone watching you wouldn’t know what you were feeling...” and then list of the remaining examples in the “acceptable examples” list below. Be sure to make a note on the Participant Appointment Notes form if the participant cannot generate an example of her/his own.

Acceptable examples:

You might grip the steering wheel tighter and stop talking for a bit.

You might hold in your feelings and stare ahead blankly.

You might have thoughts about the driver but you won’t say them out loud.

Experimenter Say: **“The main thing here is to act so that someone looking at you wouldn’t be able to tell what you were feeling. Some people call this suppressing or burying your emotions. It is important that you suppress your emotions while listening to the scenario, but when you are asked to talk out loud about your thoughts and feelings, really tell us what you are thinking and feeling.”**

Experimenter Say: **“Do you have any questions?”**

Answer the participant’s questions to clarify what they are being asked to do during this task.

Experimenter Say: **“Okay, we’ll get started with the scenario now. You will also complete some questionnaires and watch a brief film clip. Remember try to behave so that someone watching you would not know that you are feeling anything at all and try to maintain a neutral facial expression.”**

Experimenter Say: “When you are ready select ‘Continue’ to begin.

Some possible participant questions may be:

“Why do I have to respond in a certain way?”

Experimenter Say: “People have different ways of dealing with emotions, and we want to see what happens when people are asked to suppress their feelings. So, please do your best to try to behave so that someone watching you would not know that you are feeling anything at all.”

“What if I forget or can’t respond to my emotions like that?”

Experimenter Say: “We just ask that you try your best to follow those instructions.”

VITA

VITA

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Preliminary Examination Title: *Anger, Hostility, Negative Emotions and Intimate Partner Violence Perpetration: A Meta-Analytic Review*
- 2011 Master of Science in Clinical Psychology
University of Kentucky, Lexington, KY
(APA Accredited)
GPA: 3.8/4.0
Thesis Title: *Psychopathy and the prediction of alcohol related physical aggression: The roles of impulsive antisociality and fearless dominance*
- 2009 Honors Bachelor of Arts in Psychology
Behavioral Neuroscience Concentration
Purdue University, West Lafayette, IN
GPA: 3.8/4.0
Honors Thesis Title: *Evaluating the role of alcohol and psychopathy in predicting intimate partner violence*
- 2009 Honors Bachelor of Arts in Sociology
Purdue University, West Lafayette, IN
GPA: 3.8/4.0

Honors and Awards

- 2014 Arthur F. Krueger Research Award, travel and expenses grant to present research at the Association for Behavioral and Cognitive Therapies Annual Conference, Department of Psychology, Purdue University
- 2014 James D. Linden Award Recipient, given annually to the graduate student whose achievements and performance best exemplify the scientist-practitioner model, Purdue University
- 2013 Arthur F. Krueger Research Award, travel and expenses grant to present research at the Association for Behavioral and Cognitive Therapies Annual Conference, Department of Psychology, Purdue University
- 2013 Arthur F. Krueger Research Award, travel and expenses grant to present research at the International Society for Traumatic Stress Studies Annual Meeting, Department of Psychology, Purdue University
- 2012 Arthur F. Krueger Research Award, travel and expenses grant to present research at the Association for Behavioral and Cognitive Therapies Conference, Department of Psychology, Purdue University
- 2012 Battlemind to Home Symposium III Scholarship Recipient
Indianapolis, IN
Awarded to a select group of graduate students
- 2012 1st Place Manuscript Presentation Award Winner
Awarded to one graduate student for spoken presentation of research
Kentucky Psychological Association (KPA)
Spring Academic Conference
- 2011 2nd Place Manuscript Presentation Award Winner
Kentucky Psychological Association (KPA)
Spring Academic Conference
- 2011 Art of Governance Award
Recognized all KPA Board Members
- 2009 Golden Key International Honors Program Member
- 2006-2009 Psi Chi Member
- 2007-2009 Purdue Research Focused Honors Program in Psychology
- 2008-2009 Purdue Liberal Arts Honors Merit Scholarship

- 2005-2009 Purdue University Honors Program Member
- 2006-2009 Purdue Liberal Arts Honors Council Member
- 2005-2006 Purdue Dean's Scholar Academic Scholarship and Research Program

Peer-Reviewed Publications

- Birkley, E. L.,** Zapolski, T. C. B., & Smith, G. T. (in press). Race differences in the transactional relationship between depression and alcohol use from elementary school to middle school. *Journal of Studies on Alcohol and Drugs*.
- Birkley, E. L.,** & Eckhardt, C. I. (2015). Anger, Hostility, Negative Emotions and Intimate Partner Violence Perpetration: A Meta-Analytic Review. *Clinical Psychology Review*, 37, 40-56.
- Birkley, E. L.,** Giancola, P. R., & Lance, C. E. (2012). Psychopathy and the prediction of alcohol related physical aggression: The roles of impulsive antisociality and fearless dominance. *Drug and Alcohol Dependence*, 128, 58-63.
- Birkley, E. L.,** & Smith, G. T. (2011). Recent advances in understanding the personality underpinnings of impulsive behavior and their role in risk for addictive behaviors. *Current Drug Abuse Reviews*, 4, 215-27.

Book Chapter

- Pearson, C. M., Guller, L., **Birkley, E. L.,** & Smith, G. T. (2012). Multiple personality dispositions to engage in rash, impulsive action. In M. A. Cyders (Ed.), *The Psychology of Impulsivity*. New York: Nova Science Publishers.

Manuscripts in Submission

- Birkley, E. L.,** Eckhardt, C. I., & Dykstra, R. Posttraumatic Stress Disorder Symptoms, Intimate Partner Violence and Relationship Functioning: A Meta-Analytic Review. *Journal of Consulting and Clinical Psychology*.
- Birkley, E. L.,** Eckhardt, C. I., & Sprunger, J. The Effects of Instigation, Anger, and Emotion Regulation on IPV-related Behaviors: Examination of the Perfect Storm Theory.

Manuscripts in Preparation

- Birkley, E.L.,** Luedtke, B.L., Eicher, A.C., Davis, L.W. Mindfulness-based cognitive behavioral couples therapy (MB-CBCT) for PTSD: Associations with partner aggression and anger among returning OEF/OIF veterans.

Oral Presentations Given at Scientific Meetings

- Birkley, E. L.,** Dykstra, R., Hennessey, C. M., & Eckhardt, C. I. (2014, November). *Posttraumatic Stress Disorder Symptoms, Intimate Partner Violence and Relationship Functioning: A Meta-Analytic Review*. Presented this symposium talk at the Association for Behavioral and Cognitive Therapies (ABCT) Annual Conference, Philadelphia, PA.
- *Birkley, E.L.,** Roth, L.A., & Eckhardt, C. (2013, November). *A meta-analytic review of anger, hostility, and self-regulation of emotions among partner abusive men and women*. Presented this symposium talk at the Association for Behavioral and Cognitive Therapies (ABCT) Annual Conference, Nashville, TN.
***Symposium chair and presenter**
- Birkley, E.L.,** Luedtke, B.L., Eicher, A.C., Davis, L.W. (2013, November). *Mindfulness-based cognitive behavioral couples therapy (MB-CBCT) for PTSD: Associations with partner aggression and anger among returning OEF/OIF veterans*. Presented this symposium talk at the International Society for the Traumatic Stress Studies (ISTSS) Annual Conference, Philadelphia, PA.
- Eckhardt, C., Sprunger, J., & **Birkley, E.** (2012, November). Instigating, impelling, and inhibiting factors in intimate partner violence: The effects of anger arousal, cognitive distortions, and alcohol use. Presented this symposium talk at the Association for Behavioral and Cognitive Therapies (ABCT) Annual Conference, National Harbor, MD.
- *Birkley, E. L.,** Zapolski, T. C. B., & Smith, G. (2012, March). *Race differences in the prospective relationship between depression and alcohol use from elementary school to middle school*. Paper presented at the Kentucky Psychological Association (KPA) Spring Academic Conference, Lexington, KY.
***Received first place award for graduate student paper presentation.**
- *Weber, E. L.,** Giancola, P. R. (2011, March). *Psychopathy as a Moderator for Alcohol Related Aggression*. Master's thesis presented at the Kentucky Psychological Association (KPA) Spring Academic Conference, Frankfurt, KY.
***Received second place award for graduate student paper presentation.**
- Weber, E.L.** Eckhardt, C. I. (2009, April). *Evaluating the Role of Alcohol and Psychopathy in Predicting Intimate Partner Violence*. Honors thesis presented at the annual Midwestern Psychological Association (MPA) Conference, Chicago, IL.
- Weber, E. L.** (2008, April). *Antisocial Personality Disorder: Treatment Strategies based on Primary Intervention through the Identification of Comorbid Risk Factors, Multi-Systemic Therapy and Family-based Intervention*. Honors paper presented at the annual Purdue University Honors Colloquium, West Lafayette, IN.
- Weber, E. L.** (2007, April). *Advertising Race as a Cultural Icon in the Music Industry*. Honors paper presented at the annual Purdue University Honors Colloquium, West Lafayette, IN.

Posters Presented at Scientific Meetings

Weber, E. L. & Giancola, P.R. (2011, June). *Psychopathy as a Moderator for Alcohol Related Aggression*. Poster presented at the annual meeting of the Research Society on Alcoholism (RSA), Atlanta, GA.

Weber, E. L., Zapolski, T., & Smith, G. T. (2011, April). *Elementary School Depression Predicts Middle School Alcohol Consumption*. Poster presented at the first annual meeting of the Child and Adolescent Risk conference, Lexington, KY.

Samper, R. E., **Weber, E. L.**, & Eckhardt, C. I. (2008, May). *Do Hyperarousal Symptoms Predict Intimate Partner Violence?* Poster presented at the annual meeting of the Midwestern Psychological Association (MPA), Chicago, IL.

Samper, R. E., Denham, A., Blandford, J., **Weber, E. L.**, Harker, A., & Eckhardt, C. I. (2007, November). *Examining the Relationships between Hyperarousal, Alcohol Use, and Intimate Partner Violence: A Daily Diary Study*. Poster presented at the annual meeting of the Association for Behavioral and Cognitive Therapies (ABCT), Philadelphia, PA.

Research Experience

2014-2015

Dissertation

The Effects of Instigation, Anger, and Emotion Regulation on IPV-related Behaviors: Examination of the Perfect Storm Theory

Purdue University, West Lafayette, IN

Committee: Christopher Eckhardt, Ph.D., Susan South, Ph.D., Douglas Samuel, Ph.D., James Tyler, Ph.D.

Activities: Designed and conducted an experimental study that examined the effects of anger, hostility, and emotion regulation strategies on intimate partner violence behaviors. Trained and supervised 15 undergraduates in data collection and coding procedures. Facilitated weekly lab meetings and journal article reviews. Close mentorship of two undergraduates in the Research Focused Honors Program. Dissertation was successfully defended on May 8, 2015.

2013-2014

Research Assistant

Purdue Institute for Relationship Research

Indianapolis, IN

PI: Christopher Eckhardt, Ph.D.

Activities: Served as an experimenter in a laboratory study that broadly examines the effects of alcohol intoxication on attention allocation and romantic partner aggression. Specific responsibilities included: Training other RA's and staff, attending weekly lab meetings, revising protocols and contributing to IRB reviews, and aiding in recruiting and retaining subjects.

- 2013 **Preliminary Examination**
A Meta-analytic Review of Anger, Hostility, and Negative Emotions among Partner Abusive Men and Women
 Purdue University, West Lafayette, IN
Committee: Christopher Eckhardt, Ph.D., Susan South, Ph.D., Douglas Samuel, Ph.D., James Tyler, Ph.D.
- Activities: Conducted a meta-analysis of 60 empirical articles on the association between anger, hostility, other negative emotions and IPV. Specific responsibilities included: proposed and successfully defended this preliminary examination project to a committee, conducted a comprehensive review of relevant literature, independently compiled over 120 articles and coded over 60 articles, trained research assistants on coding process and met weekly to assess progress and accuracy, conducted meta-analysis, and manuscript is in final review for publication.
- 2012-2013 **Project Coordinator**
 Purdue Institute for Relationship Research
 Indianapolis, IN
Supervisor/Principal Investigator: Christopher Eckhardt, Ph.D.
- Activities: Project coordinator for a multi-site 5 year grant from NIAAA. Specific responsibilities included: Locating a lab space, facilitating contracting processes with Purdue University, outfitting lab space, editing and revising all study documents, preparing IRB revisions, training incoming research assistants and staff.
- 2010-2012 **Research Assistant**
 Adolescent Risk Behavior Laboratory
Supervisor: Gregory Smith, Ph.D.
- Activities: Assisted with a longitudinal study of factors predicting risky behavior in adolescents. Specific responsibilities included: Prepared and organized data collection materials; collected data at middle schools; data entry and analysis; co-authored a published review on impulsive behavior; received instruction on use of MPLUS; and consulted on grant renewal projects.
- 2009-2011 **Master's Thesis**
Examining the Role of Psychopathy and Acute Alcohol Intoxication on Aggression
 University of Kentucky, Lexington, KY
Committee: Peter Giancola, Ph.D., Gregory T. Smith, Ph.D., Mark Fillmore, Ph.D.
- Activities: Proposed and completed a master's thesis based on analyzing risk factors for aggressive behavior. Specific responsibilities included: library research, data analysis including Exploratory Factor Analysis, and writing, presenting and defending the thesis manuscript in front of a review board. Additionally, presented thesis at the Research Society on Alcoholism 2011

Annual Conference and at the Kentucky Psychological Association Spring Academic Conference.

- 2008-2009 **Honors Research Thesis Project**
Evaluating the Role of Alcohol and Psychopathy in Predicting Intimate Partner Violence
 Purdue University, West Lafayette, IN
Supervisors: Christopher Eckhardt, Ph.D., Rita Samper, doctoral candidate
- Activities: Proposed, conducted and analyzed an original thesis within the research focused honors program in psychology. Specific responsibilities included: aided in data analyses, wrote a thesis and presented results at professional conferences.
- 2007-2009 **Research Assistant, Implicit Attitudes Test: Violent vs. Non-Violent Males**
 Purdue University, West Lafayette, IN
Supervisors: Christopher Eckhardt, Ph.D., Rita Samper, doctoral candidate
- Activities: Assisted with research on the implicit attitudes of violent versus non-violent males. Specific responsibilities included: participant recruitment, phone screenings, scheduling participants, consenting participants, conducting experiments, paying participants, data entry, and data analysis.
- 2006-2009 **Lead Research Assistant**
 Emotional Arousal and Interpersonal Behavior
 Purdue University, West Lafayette, IN
Supervisors: Chris Eckhardt, Ph.D., Rita Samper, doctoral candidate
- Activities: Assisted with research involving a daily diary study which evaluated alcohol intake and intimate partner violence among dating couples. Specific responsibilities included: participant recruitment, screenings, scheduling participants, consenting participants, data entry, data analysis, and assisted with the creation, submission, and presentation of a professional poster at a major conference.
- 2005-2006 **Dean's Scholar Research Assistant**
 Early Conceptual Development and Categorization Lab
 Purdue University, West Lafayette, IN
Supervisor: Barbara Younger-Rossman, Ph.D.
- Activities: Conducted videotaped participant model-play sessions between mothers and their infants; and transcribed video-recorded parent and infant model-play sessions.

Clinical Experiences

2014-present **Psychology Intern, Trauma Track**
 Cincinnati Veterans Affairs Medical Center (VAMC)
 Cincinnati, OH
 Clinical Supervisors: Tobias Weiss, PsyD; Nicole Pukay-Martin, PhD

Responsibilities and Training: Administered empirically-supported/evidence-based interventions in individual and couple therapy sessions with adult veterans; received extensive training on CBCT, CPT, and PCT for PTSD; applied for CPT provider status; collaborated with treatment teams on complex cases; received weekly individual and group supervision which included regular review of video-recorded sessions. Worked primarily with Veterans within Trauma Recovery Center clinic and will work extensively with Veterans in the Domiciliary during second major rotation.

Intervention hours: 162 to date; 450 anticipated by completion

Assessment hours: 41 to date; 120 anticipated by completion

Clinical/Research Project: Wrote an anger management manual for use among Veteran's in residential treatment for PTSD. Collaborated with on-site staff and external experts in the treatment of anger management to tailor empirically supported CBT-based anger management materials to this population. Collecting data on anger, hostility, and aggression using the Buss Perry Aggression Questionnaire. Will apply for research funding in the spring of 2015 in order to refine clinical assessment and the treatment manual and expand treatment to outpatient PTSD groups.

Research Minor Rotation: Currently collaborating on a manuscript with Drs. Schumm and O'Farrell on IPV among women seeking treatment for substance use disorders. Planned collaboration with Dr. Dickstein on anger as a potential moderator for CPT treatment across multiple samples. Reviewed several manuscript submissions under the supervision of Dr. Schumm for the Journal of Traumatic Stress and the Journal of Consulting and Clinical Psychology. Research Supervisor: Jeremy Schumm, PhD

2013-2014 **Psychology Student, Practicum Placement**
Richard L. Roudebush Veterans Affairs Medical Center (VAMC),
 Indianapolis, IN
Supervisor: Brandi L. Luedtke, Psy.D.

Responsibilities and Training: Administered empirically-supported/evidence-based interventions in individual and couple therapy sessions with adult veterans; received extensive training on MB-CBCT, CBCT, and CPT for PTSD; gained proficiency in assessment of PTSD using CAPS; collaborated with treatment teams on complex cases; received weekly individual and group supervision which included regular review of video-recorded sessions. Worked primarily with Veterans within OEF/OIF/OND clinic.

Research Exposure: Participated as a member of the clinical team in a randomized controlled trial for a mindfulness-based extension of CBCT;

administered, scored, and provided feedback on multiple assessments to veterans, including CAPS; administered the first half of MB-CBCT in a group format during two weekend retreats; provided the remaining MB-CBCT sessions to couples with the co-PI (co-therapy); and analyzed data and presented findings in a symposium at ISTSS in November of 2013. ***Ongoing research collaboration on anger and IPV as outcomes and potential moderators of MB-CBCT.***

2012-present

Graduate Student Clinician

Purdue Psychology Treatment and Research Clinics (PPTRC):
Adult Services Clinic, West Lafayette, IN
Supervisor: Doug Samuel, Ph.D

Responsibilities and Training: Administered empirically-supported interventions in individual therapy sessions with adult clients; conducted initial intake interviews; provided CBT-oriented therapy including manualized empirically supported treatments (ESTs) when appropriate; conducted, scored and provided client feedback on multiple assessments; wrote progress notes including treatment plans, assessments, and terminations; and attended weekly supervision meetings which include review of video-recorded sessions along with additional instruction and supervision in the administration of ESTs for adults.

Clinical Case Presentation: Presented a complex adult case to the clinical department and discussed assessment, treatment, and client outcome.

Supervision of other students: Currently conduct weekly supervision of another graduate clinician.

Presentation on Risk Assessment for Suicide: Presented guidelines for ethical practice of risk assessment for suicide to all clinical faculty and graduate students, which included practice of skills in a group format.

2012-2013

Graduate Student Clinician

Purdue Psychology Treatment and Research Clinics (PPTRC):
Child Behavior Disorders Clinic, West Lafayette, IN
Supervisor: Elizabeth Akey, Ph.D.

Activities: Conducted assessments and empirically-supported treatments for child behavior disorders with child clients and/or their parents/guardians. Specific responsibilities included: administration of empirically supported behavioral management training to parents of children presenting for treatment; conducted, scored and provided feedback on multiple assessments of the child client; wrote integrated assessment reports and progress notes including treatment plans and terminations; and attended weekly group supervision meetings which included review of video-recorded sessions along with additional instruction and supervision in the administration of parent training for childhood behavior disorders.

- 2011-2012 **Therapy Groups Coordinator, Practicum Placement**
 Jesse G. Harris Psychological Services Center, Lexington, KY
Supervisor: David T. Susman, Ph.D.
- Responsibilities and Training: Coordinated group therapy services; facilitated recruitment, formation, and ongoing issues related to child therapy groups; handled group therapy issues/concerns with clients, parents, and community members; and attended weekly staffing meetings.
- 2010-2012 **Graduate Student Clinician**
 Jesse G. Harris Psychological Services Center, Lexington, KY
Supervisors: Mary Beth McGavran, Ph.D., Heather Risk, Psy.D., Lindsey Jasinski, Ph.D.
- Activities: Conducted empirically-based interventions in individual therapy sessions with clients. Specific responsibilities included: administration of CBT-oriented empirically supported treatments (ESTs) when appropriate; conducted, scored, and provided client feedback on multiple assessments; wrote progress notes including 4 week and 6 month treatment assessments and terminations; and attended weekly supervision meetings which included review of video-recorded sessions along with additional instruction and supervision in the administration of ESTs.
- Diversity Initiative Member: As a member of a team of graduate students, contributed to a diversity manual for our departmental clinic. Compiled a diversity guide for working with members of the military and their families.
- 2011 **Parenting Skills Psychoeducation Course Co-Leader**
 Salvation Army, Lexington, KY
Supervisor: Richard Milich, Ph.D.
- Activities: Co-lead a required parenting skills course at the Salvation Army for a diverse group of clients. Co-developed a new course segment on bullying. Specific responsibilities included: Co-lead skills classes including self-care, time-outs, setting boundaries, attending to positive behavior, etc.; attended supervision meetings as needed for consultation; coordinated services and client issues with Salvation Army staff.
- 2011 **Going for Goals: Goal Attainment and Affect Management Intervention Group**
 Bryan Station Middle School, Lexington, KY
Supervisor: Gregory T. Smith, Ph.D.
- Activities: Co-lead a group for youth ages 13-14 on goal attainment and affect management; prepared group materials; met with participants to assess goal progress; and attended regular supervision meetings.

- 2010-2011 **Counseling Center, Practicum Placement**
University of Kentucky Counseling Center, Lexington, KY
Supervisors: Jamie Hopkins, Ph.D., Linda Hellmich, Ph.D.
- Activities: Conducted intake interviews; applied interpersonal and CBT oriented empirically supported treatments to individual therapy with clients; and met weekly for supervision during which video recorded sessions were reviewed.
- 2011 **Interpersonal Process Group Co-Leader**
University of Kentucky Counseling Center, Lexington, KY
Supervisors: Susan Mathews, Ph.D., Tina Bryant, Ph.D.
- Activities: Co-lead an adult therapy group by providing empirically supported interpersonal process therapy to a diverse group of clients, which met for 1.5 hours a week for 10 weeks. Specific responsibilities included: Referring individual therapy clients to group; performing intakes with clients; co-leading each group by directing the therapeutic process; debriefing after each session with a supervisor, writing clinical notes for all clients; and meeting for 2 hours of weekly group supervision in which videotape, content and process themes were discussed.
- 2010 **Interpersonal Process Group Observer**
University of Kentucky Counseling Center, Lexington, KY
Supervisors: Susan Mathews, Ph.D., Linda Hellmich, Ph.D.
- Activities: Silently observed and recorded interpersonal group process. Specific responsibilities included: Debriefed with group leaders and a supervisor after each session; wrote and edited a weekly process note (to be read by group members the following session); met weekly for two hours of group supervision in which videotape, content and process themes were discussed; and observed group screenings.
- 2010 **Co-Leader of Anger Control Group for Children**
Jesse G. Harris Psychological Services Center, Lexington, KY
Supervisor: Richard Milich, Ph.D.
- Activities: Co-lead a group focused on anger control for children ages 11-13. Specific responsibilities included: goal-setting, introduction and review of relevant topics (such as anger recognition and coping skills), and role-playing with child clients; conducted group screening intakes with children and parents; identified positive and negative behaviors for coding; met with parents to discuss child progress and behaviors; prepared activities and process notes for group; and met weekly for supervision.

- 2010 **Volunteer Outreach Assistant, Counseling Center**
University of Kentucky, Lexington, KY
Supervisor: Felito Aldarondo, Ph.D.
- Activities: Provide outreach to incoming freshman and their parents about services offered at the UK Counseling Center. Specific responsibilities include: observation of presentations, speaking about ways to succeed in college, presenting UK Counseling Center service materials to students and parents at information sessions, and distributing materials related to suicide prevention.
Outreach Hours: 8
- 2008-2009 **Crisis Hotline Volunteer Counselor**
YMCA Domestic Violence Intervention & Prevention Program, Lafayette, IN
Supervisors: Rita Smeyak, M.S., Norah Ashcraft
- Activities: Completed crisis counseling training; counseled crisis callers, assisted with client needs within the domestic violence shelter, helped coordinate community resources for clients, and assisted clients with obtaining and completing orders of protection.
- 2008-2009 **Clinical Childcare Worker**
Purdue Psychology Treatment and Research Clinics (PPTRC)
Purdue University, West Lafayette, IN
Supervisor: Candace Best, M.S.
- Activities: Provided childcare for child clients and adult clients with children, reported to clinicians on children's activities, and met with clinicians to discuss family/child cases.

Teaching Experiences

- 2013 **Primary Instructor, PSY 120Y, Introduction to Psychology Online Course**
Purdue University
- Activities: Facilitated an online course of 60 students, graded weekly discussion posts and two written essay assignments, responded to student questions, gained skill in administering a course using Blackboard Learn and an online course pack.
- 2011 **Course Developer, PSY100: Introduction to Psychology Online Course**
University of Kentucky
- Activities: Created and prepared an online clinical psychology lab segment of PSY100 pilot online course, reviewed and edited online course, provided suggestions for course improvement, attended regular course organization meetings, submitted an original and complete online course lab segment on clinical psychology
Supervisor: Tamara Brown, Ph.D.

- 2010 **Graduate Teaching Assistant**, PSY 215: Experimental Psychology Lab
University of Kentucky
- Activities: Created and prepared PowerPoint presentations and supplemental material for lab lessons, taught 25 students in 2 two-hour sections per week for 8 weeks, encouraged an interactive discussion-based environment, graded and provided feedback on written assignments and quizzes, and held weekly office hours.
- Supervising Primary Instructor: David R. Schurtz, M.S.
- 2009-2010 **Graduate Teaching Assistant**, PSY 100L: Introduction to Psychology Lab,
University of Kentucky
- Activities: Prepared supplemental material for lab lessons, created and graded weekly lab quizzes, taught over 125 students total in 5 two-hour sections per week for 10 weeks, encouraged an interactive discussion-based environment, proctored exams for over 250 students, held weekly office hours, organized and entered grades using Blackboard, and hosted textbook-based exam review sessions for students.
- Supervisor: Tamara Brown, Ph.D.

Specific Training through Coursework and Workshops

- 2014 Motivational Interviewing 2-day Workshop,
Jonathan Steinberg, Ph.D., Motivational Interviewing Network of Trainers
(MINT), Cincinnati VA Medical Center, Cincinnati, OH
- 2014 Cognitive Processing Therapy 2-day Training,
Ric Munroe, Ph.D. & Jennifer Lewis, Ph.D., Cincinnati VA Medical Center,
Cincinnati, OH
- 2013 Motivational Interviewing 2-day Workshop, Indianapolis, IN
Raymond Tafrate, Ph.D., Motivational Interviewing Network of Trainers
(MINT)
- 2013 Mindfulness-Based Stress Reduction (MBSR), 8-week course
Brandi Luedtke, Psy.D., Richard L. Roudebush VAMC, Indianapolis, IN
- 2013 HDFS 685: Structural Equation Modeling
Sharon Christ, Ph.D., Purdue University
- 2013 PSY 692: Eating Disorders
Kelsie Forbush, Purdue University
- 2012 FAM 759: Working with Military Families
Laura Frey, M.S., University of Kentucky
- 2011 PSY 766: Topical Seminar in Behavioral Neuroscience: Theory of Alcoholism
Mark Fillmore, Ph.D., University of Kentucky

- 2011 PSY 710: Dialectical Behavior Therapy for Borderline Personality Disorder
Ruth Baer, Ph.D., University of Kentucky
- 2011 BSC 626: Health Psychology
T.K. Logan, Ph.D., University of Kentucky

Professional Memberships

- 2013-present Association for Behavioral and Cognitive Therapies (ABCT)
- 2013-present International Society for Traumatic Stress Studies (ISTSS)
- 2013-2014 Association for Psychological Science (APS)
- 2010-2012 Kentucky Psychological Association (KPA)

Professional Positions

- 2013-present ABCT Forensic Issues and Externalizing Behaviors Special Interest Group (SIG) Leadership Committee Member
Activities: Created social media website for the SIG; discussed projects for the upcoming year including further website development and manuscript submission for a forensic special issue in *The Behavior Therapist*; helped organize and attended SIG meeting at ABCT Annual Convention.
- 2010-2012 Kentucky Psychological Association Graduate Student (KPAGS) Representative
Activities: Full voting board member of the Kentucky Psychological Association (KPA). Specific responsibilities included: Attended and voted at board meetings throughout the year; represented the interests and concerns of graduate students in psychology; attended KPA academic and professional conferences; and aided in the development of a social networking website and communication forum.
Mentor: David Susman, Ph.D.

Professional Activities

- 2013-present ABCT Forensic Issues and Externalizing Behaviors SIG Leadership Committee Member
- 2013-present ABCT Couples SIG Student Member
- 2012 KPA 2012 Undergraduate Poster Competition Judge
- 2011 KPA 2012 Spring Academic Conference Planning Committee
- 2010 KPA 2011 Spring Academic Conference Planning Committee
- 2010-2011 KPA Membership Committee

References

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