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Impact of Social Support During a Social interaction on Post-Trauma Cognitions and Outcomes During a Trauma Analogue Design

Christy Elizabeth Allen
christyallen16@gmail.com

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ABSTRACT

IMPACT OF SOCIAL SUPPORT DURING A SOCIAL INTERACTION ON POST-TRAUMA COGNITIONS AND OUTCOMES DURING A TRAUMA ANALOGUE DESIGN

Christy Allen, Ph.D.
Department of Psychology
Northern Illinois University, 2019
Michelle Lilly, Director

This study utilized the trauma film paradigm to explore interpersonal processes in post-trauma social interactions and their relation to posttraumatic stress disorder (PTSD) symptoms within the framework of social-cognitive theory. Social support following a traumatic experience has been consistently linked with posttraumatic outcomes and PTSD symptoms, yet the exact mechanisms underlying this relationship remain unconfirmed. One theory is that when trauma survivors emotionally and cognitively process the traumatic experience within positive supportive conversations, these conversations can result in fewer negative posttraumatic cognitions, beliefs, and appraisals that have been linked to symptoms of PTSD. Likewise, negative support can create and reinforce already existing maladaptive appraisals, which can inhibit future processing of the trauma and increase PTSD symptoms (e.g., avoidance, intrusions).

Trauma survivors are often encouraged to talk about the trauma with others. However, little is known about the structure of these interactions and the conditions under which optimal positive impact, or the most detrimental negative impact, of the conversations occur. The long-term objective of the project is therefore to produce findings that can guide post-trauma social

interactions and disclosures in such a way that they will be most beneficial to trauma survivors in terms of trauma-related symptoms, appraisals and cognitions, and emotions. The specific aims of this dissertation were to 1) investigate whether positive and negative support in post-trauma interactions with peers relates to later analogue post-trauma symptoms, 2) investigate whether this relationship is partially mediated by negative posttraumatic cognitions, and 3) investigate whether content shared (i.e., facts and details alone versus inclusion of thoughts and emotional reactions) in the disclosure moderates the relations between social support and posttraumatic cognitions.

To achieve these aims, the trauma film paradigm was utilized to create a situation in which a post-trauma interaction and analogue trauma symptoms were observed. Participants viewed distressing film clips that were intended to induce short-term distress and impermanent intrusive thoughts, and then had a short conversation with a friend they brought with them to the laboratory. Participants were randomly instructed to either discuss their thoughts and feelings about the film clips, or to discuss facts and details of the film clips. Friends' verbal statements were coded for negative and positive support, and participants answered questions about posttraumatic cognitions, as well as tracked intrusive thoughts about the film clips over the subsequent two days. It was hypothesized that social support would be related to posttraumatic cognitions, negative mood, intrusive thoughts, and avoidance of film-related stimuli, and that social support would indirectly influence intrusive thoughts and avoidance through cognitions. Furthermore, it was hypothesized that participants who discuss their thoughts and feelings would exhibit more positive outcomes as compared to those who discuss details, and that condition

(facts versus thoughts/feelings) would moderate the association between social support and cognitions.

However, the data did not support any of the hypotheses. Positive and negative social support was not related to other study variables. Further, condition did not appear to function as designed, and was not related to outcomes. Potential explanations for these results include, among others, the measurement of social support (i.e., coding schema), measurement of posttraumatic cognitions, failed manipulation of condition, and lack of need or lack of time to process the trauma analogue. Future research should include a measurement of perceptions of the interaction, coding of nonverbal support, different design of conversation prompts, and more relevant measurement of cognitions and social support.

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ON POST-TRAUMA COGNITIONS AND OUTCOMES
DURING A TRAUMA ANALOGUE DESIGN

BY

CHRISTY E. ALLEN
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TABLE OF CONTENTS

	Page
LIST OF APPENDICES.....	vi
Chapter	
1. INTRODUCTION	1
Relevant Theoretical Frameworks of Trauma and PTSD Symptoms	3
Common Factors	3
Emotional Processing Theories	4
Social-Cognitive Models	5
Processing of the Trauma	7
Social Support, Trauma, and PTSD Symptoms	8
Social Support	8
Social Support and PTSD Symptoms	10
Negative Cognitions and Appraisals as Mechanism.....	17
Links to Social Support and Trauma Interactions.....	18
Disclosure and Post-Trauma Social Interactions	21
Laboratory-Based Trauma Interactions	25
Content of Posttrauma Social Interactions.....	34
This Study	37
Hypotheses.....	39
2. METHOD	40

Chapter	Page
Participants.....	40
Trauma Analogue Stimulus and Design.....	43
Measures	46
Demographics	46
Friendship Closeness	46
Current PTSD Symptoms	47
Perceived Social Support.....	48
State Mood.....	49
Attention	50
Posttraumatic Cognitions.....	51
Intrusions.....	52
Avoidance of Film-Related Stimuli.....	53
Positive and Negative Social Support.....	54
Additional Questions	57
Procedure	57
Data Analysis	61
3. RESULTS	64
Data Screening.....	64
Descriptive statistics	65
Pre-Analogue Variables.....	65
Attention	66

Chapter	Page
Post-Analogue Affect.....	66
Post-Analogue Cognitions	67
Social Support Variables.....	67
Outcome Variables.....	67
Additional Questions	68
Manipulation Check and Log Adherence	69
Initial Analyses	69
Hypothesis Testing.....	72
Post Hoc Analyses	73
4. DISCUSSION	76
Summary and Interpretation of Results	77
Post Hoc Interpretations.....	82
Limitations and Future Research	84
Implications.....	88
REFERENCES	90
APPENDICES	105

LIST OF APPENDICES

APPENDIX	Page
A. INTRUSIVE THOUGHT LOG	105
B. SSICS CODING MANUAL EXCERPTS	107
C. PROCEDURE SEQUENCE AND MEASURES COLLECTED AT EACH TIME POINT	119
D. RECRUITMENT DOCUMENT	121
E. INFORMED CONSENT DOCUMENTS	123
F. MEASURES	128
G. DEBRIEFING DOCUMENTS	141
H. MEANS AND STANDARD DEVIATIONS OF KEY STUDY VARIABLES	155
I. MEANS, STANDARD DEVIATIONS, AND MINIMUM AND MAXIMUM REPORTED SCORES OF TOTAL SAMPLE AND OF TWO CONDITION MANIPULATIONS CHECK QUESTIONS	157
J. CORRELATION MATRIX FOR KEY STUDY VARIABLES	159
K. KEY STUDY VARIABLE MEANS AND STANDARD DEVIATIONS BY CONDITION	161
L. PERCENTAGE OF NEGATIVE SUPPORT STATEMENTS PREDICTING CHANGE IN NEGATIVE AFFECT FROM T1 TO T2	163
M. PERCENTAGE OF NEGATIVE SUPPORT STATEMENTS PREDICTING CHANGE IN POSTTRAUMATIC CONDITIONS FROM T1 TO T2	165
N. PERCENTAGE OF NEGATIVE SUPPORT STATEMENTS PREDICTING TOTAL NUMBER OF INTRUSIONS REPORTED AT T3	167

APPENDIX

Page

O.	PERCENTAGE OF NEGATIVE SUPPORT STATEMENTS AND ATTENTION PAID TO FILM PREDICTING AVOIDANCE SEVERITY REPORTED AT T3	169
P.	PERCENTAGE OF POSITIVE SUPPORT STATEMENTS PREDICTING CHANGE IN NEGATIVE AFFECT FROM T1 TO T2	171
Q.	PERCENTAGE OF POSITIVE SUPPORT STATEMENTS PREDICTING CHANGE IN POSTTRAUMATIC COGNITIONS FROM T1 TO T2	173
R.	PERCENTAGE OF POSITIVE SUPPORT STATEMENTS PREDICTING TOTAL NUMBER OF INTRUSIONS REPORTED AT T3	175
S.	PERCENTAGE OF POSITIVE SUPPORT STATEMENTS AND ATTENTION PAID TO FILM PREDICTING AVOIDANCE SEVERITY REPORTED AT T3	177
T.	PERCENTAGE OF NEGATIVE SOCIAL SUPPORT STATEMENTS PREDICTING TOTAL NUMBER OF INTRUSIONS REPORTED AT T3 INDIRECTLY THROUGH POSTTRAUMATIC COGNITIONS AT T2	179
U.	PERCENTAGE OF NEGATIVE SOCIAL SUPPORT STATEMENTS AND ATTENTION PAID TO FILM PREDICTING AVOIDANCE SEVERITY REPORTED AT T3 INDIRECTLY THROUGH POSTTRAUMATIC COGNITIONS AT T2	181
V.	PERCENTAGE OF POSITIVE SOCIAL SUPPORT STATEMENTS PREDICTING TOTAL NUMBER OF INTRUSIONS REPORTED AT T3 INDIRECTLY THROUGH POSTTRAUMATIC COGNITIONS AT T2	183
W.	PERCENTAGE OF POSITIVE SOCIAL SUPPORT STATEMENTS AND ATTENTION PAID TO FILM PREDICTING AVOIDANCE SEVERITY REPORTED AT T3 INDIRECTLY THROUGH POSTTRAUMATIC COGNITIONS AT T2	185
X.	ONE-WAY ANALYSIS OF VARIANCE OF TOTAL NUMBER OF INTRUSIONS REPORTED AT T3 BY CONDITION	187
Y.	ONE-WAY ANALYSIS OF VARIANCE OF AVOIDANCE SEVERITY REPORTED BY T3 BY CONDITION COVARIED WITH ATTENTION TO FILM	189

APPENDIX

Page

Z. PERCENTAGE OF NEGATIVE SUPPORT STATEMENTS PREDICTING
CHANGE IN POSTTRAUMATIC COGNITIONS FROM T1 TO T2
MODERATED BY CONDITION 191

AA. PERCENTAGE OF POSITIVE SUPPORT STATEMENTS PREDICTING
CHANGE IN POSTTRAUMATIC COGNITIONS FROM T1 TO T2
MODERATED BY CONDITION 193

CHAPTER ONE

INTRODUCTION

The majority of people will experience at least one exposure to a traumatic event in their lifetime (Kilpatrick et al., 2013), whether that is a serious car accident, childhood abuse, sexual assault, a natural disaster, work-related exposure to a trauma, combat, or another stressful event with a risk to life or bodily integrity. Traumatic experiences can have both short and long-term consequences to mental health. Posttraumatic stress disorder (PTSD), subclinical PTSD symptoms, depressive symptoms, anxiety, and substance use are some of these potential posttraumatic outcomes (Kessler, Davis, & Kendler, 1997; Vrana & Lauterbach, 1994). While the majority of people demonstrate resilience to trauma and recover without significant long-term consequences, a minority, such as those who develop PTSD, do not (American Psychiatric Association [APA], 2013; Kilpatrick et al., 2013). For example, Kilpatrick and colleagues (2013) found the rate of exposure to trauma to be 89.7% in a sample of adults while lifetime prevalence for PTSD (according to *DSM-5* criteria) was only 8.3%. Nonetheless, for this minority, these symptoms are distressing and impairing. PTSD can have significant, and often chronic, negative impact on several domains of life, including quality of life (Olatunji, Cisler, & Tolin, 2007), interpersonal relationships (Taft, Watkins, Stafford, Street, & Monson, 2011), and employment (Smith, Schnurr, & Rosenheck, 2005). It is therefore important to study the factors

that may initiate and maintain poor posttraumatic outcomes, including PTSD symptoms, as well as factors that may reduce symptomatology.

According to the *DSM-5* (APA, 2013), PTSD symptoms include four categories of symptoms: re-experiencing symptoms (i.e., intrusive memories, distressing dreams, flashbacks, physical and emotional triggers to trauma reminders), negative changes in thoughts and emotions (i.e., strong and rigid negative beliefs, self-blame for the event, strong and persistent negative emotions, inability to recall key details of the event, difficulty feeling positive emotions, loss of interest in activities, emotional distance from others), avoidance (i.e., internal and external avoidance of trauma memories and reminders), and hyperarousal (i.e., hypervigilance, irritability, reckless behavior, strong startle reactions, difficulty concentrating, difficulty sleeping). PTSD has also been found to co-occur or be associated with a variety of other issues, including physical health problems (Pacella, Hruska, & Delahanty, 2013), major depressive disorder (Rytwinski, Scur, Feeny, & Youngstrum, 2013), and problematic substance use (Kilpatrick et al., 2003).

As it is currently diagnosed, PTSD is a heterogeneous disorder. With 20 symptoms and four symptom clusters currently recognized in the *DSM-5*, two people with a diagnosis of PTSD could have a symptom presentation that looks quite different (APA, 2013). However, re-experiencing symptoms are considered the hallmark of PTSD by some clinicians, and there must be some presence of these symptoms in the last month in order to receive an official PTSD diagnosis from a clinician (APA, 2013; James et al., 2016). Re-experiencing symptoms are all explicitly anchored to the traumatic experience while other symptoms (e.g., difficulty sleeping,

irritability) are more difficult to determine as definitively caused by the traumatic experience (APA, 2013).

Avoidance of situations or thoughts relative to the traumatic experience is considered a second hallmark of PTSD. Like intrusions, avoidance (i.e., avoidance of trauma memories and reminders) is also explicitly anchored to a specific traumatic experience (APA, 2013). Other symptoms (e.g., loss of interest in pleasurable activities) may overlap with symptoms from other disorders (e.g., depression, anxiety disorders). By focusing on symptoms that can be clearly tied to a specific traumatic experience (i.e., intrusions of the film clips, avoidance of the film-related stimuli), the impact of previous traumatic experiences (e.g., sexual assault, motor vehicle accident) on measured outcomes was reduced. Given this, intrusive memories and avoidance were used to represent PTSD symptoms in this study.

Relevant Theoretical Frameworks of Trauma and PTSD Symptoms

Common Factors

There are many theories that attempt to explain posttraumatic outcomes and PTSD symptoms in particular. Two of these theoretical frameworks are emotional processing theory (Foa & Kozak, 1986; Foa & Rothbaum, 1998) and social-cognitive models (Ehlers & Clark, 2000; Janoff-Bulman, 1992). There are differences as well as commonalities within these frameworks. Within both of these frameworks, avoidance of the trauma memory, trauma reminders and triggers, and trauma-related cognitions and emotions are thought to be problematic and significant maintenance factors for PTSD symptoms (Brewin & Holmes, 2003). Treatments that correspond to these theoretical frameworks suggest the importance of verbally

and cognitively processing (or “working through”) the memory and related cognitions and emotions (Brewin & Holmes, 2003).

Emotional Processing Theory

Emotional processing theory is an information processing theory that posits that pre-, peri-, and post-trauma factors impact how a traumatic memory is encoded and activated (Foa & Rothbaum, 1998). A fear network of associations between many factors is created, including cues related to the feared stimuli, responses to the stimuli, and meaning attached to the stimuli (Foa & Rothbaum, 1998). Two specific, core cognitions proposed to be linked to a maladaptive fear network are, “The world is completely dangerous” and “I am incompetent” (Foa & Rothbaum, 1998). Trauma survivors may therefore avoid situations they believe may be dangerous or that are linked to their fear network, even if the situation or stimuli are not likely to be objectively dangerous (Foa & Rothbaum, 1998). As a result, the trauma and resultant emotions and thoughts may not be processed, or processed in an unhelpful way. Furthermore, it has been suggested within this theory that intrusive memories and images may reflect unresolved emotional processing (Rachman, 1980).

Prolonged exposure (PE) therapy (Foa, Rothbaum, Riggs, & Murdock, 1991), which is based in emotional processing theory, is meant to reduce behavioral and cognitive avoidance of the trauma and items in the fear network (Rauch & Foa, 2006). The fear network is purposely activated in a therapy session in order to allow maladaptive cognitions and associations to be disconfirmed, and to allow new, corrective information to be added (Rauch & Foa, 2006). Further, habituation to the trauma memory and emotions associated with it are meant to occur

with repeated exposure (Rauch & Foa, 2006). Intense and painful emotions and cognitions are thought to be brought to the surface and given a chance to be processed and reduced, rather than suppressed or avoided (Rauch & Foa, 2006). Intrusive memories and other symptoms are theorized to decline as the memory and emotions become habituated and the trauma memory becomes more organized (Foa et al., 1991).

PE is recommended as a first-line treatment for PTSD (National Institute of Clinical Excellence, 2005) and as a strongly recommended therapy for veterans with PTSD (VA/DoD Guidelines Working Group, 2010). PE has demonstrated favorable outcomes compared to waitlist (Foa et al., 1991; Resick, Nishith, Weaver, Astin, & Feuer, 2002), treatment as usual (Asuaki, Saito, Tsuruta, Kishimoto, & Nishikawa, 2010), and supportive counseling (Schnurr et al., 2007). According to one meta-analysis, large effect sizes in terms of PTSD symptom outcomes were reported in PE conditions as compared to other conditions (Powers, Halpern, Ferenschak, Gillihan, & Foa, 2010). PE has been found to be associated with reduction in PTSD symptoms across trauma types, and to demonstrate gains at post-treatment up to five years post-treatment (Foa & McLean, 2016). Foa and McLean (2016) discuss the history and status of PE effectiveness and efficacy research in greater detail.

Social-Cognitive Models

Cognitive models of PTSD are based on the idea that a survivor's problematic post-trauma processing in regard to the trauma memory and the meaning of the trauma creates and maintains PTSD symptoms (Ehlers & Clark, 2000). Core beliefs and appraisals about the self, others, and the world are often impacted, and, in cases where previous trauma or adversity may

not have occurred, previous positive “assumptions” about the safety of the world and the general goodness of people are “shattered” (Janoff-Bulman, 1992). In the seminal article on the cognitive model of PTSD, Ehlers and Clark (2000) posited that negative appraisals of the trauma and its sequelae, as well as disruptions in the trauma memory, generate a sense of current and serious threat for the survivor, resulting in poor coping behaviors (e.g., cognitive and behavioral avoidance). Intrusive thoughts and other forms of re-experiencing symptoms are proposed to be related to thought suppression and avoidance, as well as difficulties with the trauma memory, such as enhanced associative memory for stimuli associated with the trauma (Ehlers & Clark, 2000).

To resolve PTSD symptoms, social-cognitive theories endorse affective expression associated with the trauma and the restructuring of content of maladaptive appraisals and cognitions (Resick, Monson, & Chard, 2014). Cognitive Processing Therapy (CPT; Resick & Schnicke, 1993) is emblematic of these treatment strategies. As maladaptive interpretations and negative core beliefs are resolved, it is thought that trauma survivors will experience a decrease in a sense of current threat and therefore a reduction in hyperarousal and intrusions symptoms, as well as alterations in their behavior (e.g., positive coping methods, decreased social isolation; Resick et al., 2014).

Like PE, CPT has amassed considerable research evidence regarding its effectiveness in treating PTSD symptoms and depression symptoms. CPT compared favorably to treatment-as-usual and control conditions (e.g., Galovski, Blain, Mott, Elwood, & Houle, 2012; Monson et al., 2006; Resick et al., 2002), and has been shown to have comparable outcomes to PE (Resick, Nishith, & Griffin, 2003). CPT has also demonstrated effectiveness across trauma types

(Galovski, Wachen, Chard, Monson, & Resick, 2015), and treatment gain maintenance at five to ten years post-treatment (Resick, Williams, Suvak, Monson, & Gradus, 2012). A more detailed description of effectiveness research was written by Galovski and colleagues (2015).

Processing of the Trauma

Although specific treatment techniques may differ based on emotional processing and social-cognitive models, these broad theoretical frameworks suggest that some form of trauma reprocessing is needed in order to either prevent and/or treat PTSD symptoms. There is evidence to suggest that the social environment is important in terms of the chance to reprocess a traumatic event. For example, social-cognitive processing (SCP) theory (Belsher, Ruzak, Bongar, & Cordova, 2012; Lepore, 2001) proposes that supportive post-trauma conversations are an important part of trauma recovery in that they allow for challenging of cognitions and appraisals, create a sense of safety, and may lead to more complete processing of, or habituation to, the memory. Social support therefore deserves a closer look with regard to theoretically driven trauma outcomes and mechanisms. This study seeks to examine social support as a factor that may help to explain the disparity between the high rates of trauma exposure and the minority of survivors that develop PTSD symptoms, due to its relevance to the common factors (i.e., reprocessing, posttraumatic cognitions) within leading theoretical frameworks of PTSD.

Social Support, Trauma, and PTSD Symptoms

Social Support

Sources of social support can include any person within the survivor's social environment. Three prominent sources include spouses and partners, family members, and friends (Zimet, Dahlem, Zimet, & Farley, 1988). Coworkers, classmates, and neighbors often provide social support as well. More formal sources of support may include medical and mental health professionals, teachers, and religious leaders.

Social support itself has been defined and categorized in various ways. One distinction is between received or perceived support. Received support is often characterized by distinct acts or experiences and can typically be quantified (Kaniasty, 2005). For example, a friend stopping by to see how an individual is faring, advice or statements made in conversation, a hug, or a ride given to an appointment may reflect actual support that is given and received. The term tangible social support has also been used to refer to this form of support. Perceived support has a more abstract quality; it is typically defined as the extent to which a person feels support from others in his or her environment and believes that other people are available and willing to provide tangible, emotional, or social assistance (Charuvastra & Cloitre, 2008; Kaniasty, 2005). Cohen and Wills (1985) defined social support similarly in that it can be seen as believing that the individual is part of a social network or group and that they are cared for by others (Cohen & Wills, 1985). Perceptions of support can therefore reflect subjective evaluations of actual support acts themselves (i.e., received support), or a more general sense of one's social resources without

a focus on distinguishable, received acts. Relatedly, social support may be more general and global, or event-specific (i.e., support given with regards to a specific situation).

The social environment has also been examined in terms of functional and structural elements (Charuvastra & Cloitre, 2008). Some researchers have examined structural information, such as number of people available to an individual in their social networks or number of people in whom they can confide. These measurements can provide information about the complexity and accessibility of the individual's social environment. Conversely, functional support focuses more on the quality and perception of support (Charuvastra & Cloitre, 2008).

Another support distinction is between practical support and emotional and/or psychological support. Practical support may be instrumental, encompassing the provision of resources or help accomplishing tasks, or informational, encompassing advice provided or other forms of information to help the survivor heal or improve their situation (Tardy, 1985). Emotional support is demonstrated by love, care, and/or affection (Tardy, 1985). Other forms of non-practical support are appraisal, belongingness, and self-esteem support (Cohen & Hoberman, 1983; Tardy, 1985). Appraisal support has somewhat variable definitions. Cohen and Hoberman (1983) conceptualized it as feeling that people are available to discuss problems and feelings, while Tardy (1985) and others view appraisal support as a type of evaluative feedback given by others regarding the self. Cohen and Hoberman (1983) proposed that self-esteem support serves the function of providing information that results in a positive evaluation of the self as compared to others, while belongingness support serves the function of believing that other people are available to spend time with the individual.

There is an extensive literature examining the associations between components of people's social environment and outcomes such as stress, physical health, mental health, and coping (Kessler, Price, & Wortman, 1985). Although the associations are complex and dependent on the operationalization and measurement of social support, as well as the outcomes studied, social support has been consistently linked to the development and/or maintenance of psychopathology (Kessler et al., 1985).

Social Support and PTSD Symptoms

The association between social support and mental health holds true for posttraumatic outcomes as well. Research has demonstrated that post-trauma social support is one of the most robust predictors of PTSD. A lack of positive social support emerged as the strongest ($ES = 40$, Brewin, Andrews & Valentine, 2000) or among the strongest ($ES = 28$, Ozer, Best, Lipsey, & Weiss, 2003) predictors of PTSD in meta-analyses on adult trauma survivors. Low social support was also found to be an important predictor of post-trauma symptomatology in a meta-analysis of studies on trauma-exposed children aged 6 to eighteen (Trickey, Siddaway, Meiser-Stedman, Serpell, & Field, 2012). Across the literature, researchers typically examine either general support or event-specific (i.e., trauma-specific) support, and often do not provide information about both in the same study (Guay, Billette, & Marchand, 2006). Regardless, it appears that both perceptions of relationships more generally, as well as perceptions of relationships and social experiences that can be explicitly linked to a traumatic event or subsequent recovery, have been shown to be related to PTSD symptoms (Guay et al., 2006).

In the research literature examining social environment and PTSD, categories and types of support, sources, characteristics of the survivor, and directionality are prevalent issues. In terms of categories of support, functional support, as compared to structural support, has been shown to be more relevant to posttraumatic outcomes (King, King, Foy, Keane, & Fairbank, 1999; Norris & Kaniasty, 1996). Additionally, there is some evidence to suggest that emotional support is more relevant to the association between social support and PTSD symptoms than practical support (Ozer et al., 2003). This study therefore examined the provision (or lack thereof) of functional emotional support.

Importantly, it is not only a lack of positive social support that can have an impact on outcomes post-trauma. In fact, negative support may have more of an impact on PTSD symptoms than the reception of positive support (Christiansen & Elklit, 2008). Extant literature has yielded several studies highlighting the impact of negative support on PTSD (Ahrens, 2006; Davis, Brickman, & Baker, 1991; Ullman, 1999; Ullman & Filipas, 2001). Examples of negative social reactions that have been studied include forms of blame and guilt-inducement, criticism, isolation, and stigmatization (Guay et al., 2011). Within the context of the social-cognitive processing model, a specific form of negative support, labeled social constraints, has been examined (Belsher et al., 2012; Lepore, 2001). Social constraints are any part of the social environment that discourage the trauma survivor from speaking about their trauma or cause them to feel alienated when seeking support for their trauma (Belsher et al., 2012; Lepore & Ituarte, 1999). Social constraints could include changing the subject when a survivor tries to talk about their trauma or explicitly telling them not to talk about it (Lepore & Ituarte, 1999). Notably,

PTSD symptoms have been found to be associated with a greater amount of social constraints (Belsher et al., 2012).

In addition to contributing to the maintenance of PTSD symptoms, avoiding discussing the trauma can create an emotional and communicative distance in key relationships. For example, many military veterans struggle with these conversations with civilian spouses (Campbell & Renshaw, 2013; Monk & Goff, 2014). Finding ways to improve these conversations is therefore critical. Indeed, researchers have called for a focus on improving facilitation of trauma-related communication, which should enhance opportunities for processing (Maerker & Horn, 2011). If even brief conversations are perceived as supportive, or at least not hostile or critical, the trauma survivor may feel a greater sense of community or availability of support. Perceived availability of support has a strong link to recovering from trauma (Guay et al., 2006). Additionally, these conversations may serve to promote treatment seeking if the disclosure or conversation is helpful or positive (i.e., perhaps promoting the thought: “If this person reacted fine, maybe I could talk about this with people”). Regardless of the form that negative support takes, there is evidence that positive and negative support have a distinct impact on recipients, rather than representing different ends of the same continuum (Abbey, Abramis, & Caplan, 1985; Guay et al., 2011). It has therefore been recommended that both positive and negative forms of the social environment be measured separately in research on social support and trauma (Guay et al., 2011). Both positive and negative forms of support were examined in this study.

With regard to sources of support, researchers have focused mainly on significant others (Crevier, Marchand, Nachar, & Guay, 2015). Friends and family members have been relatively

neglected (Beck, 2010; Woodward et al., 2015). Significant others are certainly important, given the central role that they play in many people's lives, particularly if the relationship involves a long-term commitment. Additionally, if the partners are cohabiting, it would more difficult to hide or not share the traumatic experience and/or symptoms than it might be from other people in the survivor's life. However, family members and friends are often sources of support for trauma survivors and can play a caregiving role (Guay et al., 2011; Crevier et al., 2015). Friends and family may be more important depending on age and phase of life, and of course, relationship status. Teenagers and young adults may not be in a committed or cohabiting relationship, and therefore, friends or family members may be more salient for them. College students living away from home may especially rely on friends for support, particularly in the aftermath of an event that they may feel uncomfortable sharing with family members. As this study sample consisted of undergraduates, and there is a relative lack of information regarding this source of support (as opposed to romantic partners), friends identified and brought to the laboratory by participants served as support sources in the study.

In terms of the characteristics of the trauma survivor, gender has been found to be relevant to the relations between social support and PTSD. Lower levels of social support have been found to be more predictive of PTSD symptoms for women than for men in various studies, including among veterans (King et al., 1999), people who lived in a war zone (Ahren et al., 2004), and interpersonal trauma survivors (Andrews et al., 2003). Andrews and colleagues (2003) reported that negative social support mediated the relationship between gender and PTSD symptoms, due to women receiving greater negative social support than men. Additionally, gender moderated the relation between negative support and PTSD symptoms, such that women

who experienced negative support experienced higher PTSD symptoms than men who experienced negative support.

The reasons behind the observed gender differences are not known. In regard to health, women's health has been found to be more strongly related to social support than men's (Belle, 1987; Flaherty & Richman, 1989). Additionally, women are more likely to seek out, offer, and profit from social support than men (Belle, 1987; Flaherty & Richman, 1989). One possibility lies in gender socialization (Belle, 1987; Cross & Madison, 1997). For example, women are generally socialized to think of themselves and their world in the context of other people, and men tend to have a more independent self-construal or world-view (Cross & Madison, 1997). Relative to experiencing trauma, it may be that women are more accustomed to processing negative experiences and feelings within a support network. Deprivation of this outlet may be more damaging to women than to men, and this lack of an opportunity to process the event may lead to or exacerbate PTSD symptoms. Given the complex issues related to gender and social support, the "survivors" of the analogue trauma in the study were all female.

Finally, another important issue relative to social context and PTSD is the directionality of the relations between the two. While initially social support was studied as a predictor of PTSD symptoms only, the relation between social support and PTSD symptoms is now recognized as more complex. The relationship may be bidirectional. The social erosion theory proposes that PTSD symptoms, such as strong negative emotions (e.g., anger), avoidance, negative thoughts about others and the self, and difficulty connecting with others, lead to erosion of social resources and social support over time (Shallcross, Arbisi, Polusny, Kramer, & Erbes, 2016). Of three studies designed to compare the typical social causation hypothesis and the

social erosion hypothesis longitudinally, one found support for only social erosion (King, Taft, King, Hammond, & Stone, 2006) while the other two found support for both hypotheses (Kaniasty & Norris, 2008; Shallcross et al., 2016). Guay and colleagues (2011) suggest that social support may be more influential on PTSD symptoms early on, while the opposite becomes true when PTSD becomes chronic and more entrenched. Given the lack of clarity on the bidirectional relationship, an analogue study could avoid the issue of directionality in a way that a cross-sectional study cannot. As social support is measured immediately following the analogue trauma, the social support precedes the symptoms (i.e., intrusive memories and avoidance). Therefore, there is not an opportunity for support to have been eroded by posttrauma symptoms or behavior.

Taken altogether, findings on the association between social support and posttraumatic outcomes indicate that the social environment is a crucial piece to consider. Results, however, are largely based on self-report measures and there is a dearth of information examining individual, in-the-moment post-trauma interactions as compared to global perceived social support, which is often assessed retrospectively. This study sought to confirm this relationship between support, both positive and negative, and PTSD symptoms within a single interaction taking place “in real time.” Additionally, the study sought to add to information about social support from sources other than significant others by focusing on friendships.

Furthermore, the means by which social support influences PTSD symptoms is a central question in this study. The precise mechanisms by which social support affects PTSD symptoms are not clear and continue to be debated (Guay et al., 2006; Guay et al., 2011). Social support has been seen as both a protective and risk factor (Guay et al., 2011). The buffering hypothesis posits

that positive social support can increase feelings of belonging and wellbeing (Cohen & Wills, 1985), therefore “buffering” against negative outcomes like PTSD symptoms. Social support is also proposed to impact PTSD through improvement in coping strategies (Leech & Littlefield, 2011; Littleton, 2010; Thoits, 1986) and regulation of emotions (Lakey & Orehek, 2011). Enhanced emotion regulation ability benefits survivors by reducing distress. Positive social interactions could encourage facing the trauma (e.g., talking about it, not avoiding reminders) that may take the place of more harmful coping methods such as avoidance. Social support has been associated with more active and approach-oriented coping strategies like cognitive restructuring and problem-solving in sexual assault survivors (Leech & Littlefield, 2011; Littleton, 2010), while the use of avoidant coping has been shown in some studies to either mediate or moderate the relationship between social support and PTSD symptoms (Hooberman, 2007; Ullman, Townsend, Filipas, & Starzynski, 2007). Finally, the social-cognitive processing model proposes that social interactions specifically assist in recovery following a stressful event because the conversations allow trauma survivors to process the trauma memory, emotions, and thoughts (Lepore, 2001).

By extension, a lack of positive social support may be a risk factor that could make a survivor more vulnerable to experiencing PTSD symptoms by leaving the survivor without access to potential sources of help, models of positive coping behaviors, and outlets for negative emotions and thoughts. Additionally, negative social responses and interactions could make survivors more likely to avoid and therefore leave them more vulnerable to psychopathology.

Overall, these proposed mechanisms align well with the common factors discussed across posttraumatic theories presented earlier. Social support is proposed to reduce avoidance and

allow for emotional and cognitive processing. The final common factor discussed earlier, that of cognitions and appraisals, has also been proposed as an underlying mechanism between social support and PTSD symptoms, and was examined in this study given the aforementioned importance of cognitions and appraisals to PTSD symptoms.

Negative Cognitions and Appraisals as Mechanism

Posttraumatic cognitions, beliefs, and appraisals have often been proposed as one pathway by which social support influences PTSD symptoms (Guay et al., 2006; Janoff-Bulman, 1992; Joseph, Williams, & Yule, 1997; Robinaugh et al., 2011). Guay and colleagues (2006) have called for more research into these factors. Thoughts and beliefs may have originated with the trauma (e.g., self-blame for the event) or may have been made stronger by the trauma (e.g., belief that the world is dangerous). Common thoughts that have been associated with PTSD in trauma survivors are: belief that the world is dangerous, belief that others cannot be trusted, belief that people are selfish and malicious, belief that the self is a bad or unworthy person, belief that the future is hopeless, and belief that they lack control or self-efficacy (Resick et al., 2014).

As discussed previously, negative cognitions and appraisals are thought to create a sense of current internal and/or external threat, thereby increasing distress and the use of avoidance (Ehlers & Clark, 2000). Avoidance disallows the correction of these negative beliefs, inhibits processing, and can initiate and maintain other PTSD symptoms (Ehlers & Clark, 2000). Extensive research has linked negative posttraumatic cognitions and appraisals, or interpretations of the trauma and its symptoms, to PTSD (Dunmore, Clark, & Ehlers, 1999; Ehlers & Clark, 2000; Ehlers & Steil, 1995; Foa, Ehlers, Clark, Tolin, & Orsillo, 1999; O'Donnell, Elliot, Lau, &

Creamer, 2007). A recent study examining initial levels of posttraumatic cognitions and PTSD symptoms, and changes in these across PE treatment (pre-treatment, sessions 2, 4, 6, and 8, and post-treatment), found that levels of negative cognitions about the world were associated with subsequent PTSD severity at later sessions across treatment (Kumpula et al., 2017). Furthermore, improvements in self-related cognitions resulted in subsequent PTSD symptom improvement at later sessions (Kumpula et al., 2017). These results support the pivotal role of post-trauma cognitions in PTSD.

Links to Social Support and Trauma Interactions

As discussed earlier, processing of the trauma is considered key to both the development of negative posttraumatic outcomes and to their resolution in emotional processing and social-cognitive frameworks. A positive social environment may provide a safe space for survivors to work through negative cognitions about the trauma or themselves and to express their emotions (Guay et al., 2006; Lakey & Orehek, 2011; Robinaugh et al., 2011). Platt, Lowe, Galea, Norris, and Koenen (2016) argue that emotional support may be an important component in allowing a trauma survivor space to use reappraisal. Moreover, social support providers may directly challenge negative cognitions expressed by survivors (Ullman & Filipas, 2001). A lack of social support may mean that trauma survivors do not discuss the traumatic event, their negative feelings, or their beliefs.

Similarly, experiencing negative responses to traumatic disclosures may impact PTSD severity via posttraumatic cognitions by influencing beliefs and placing trauma survivors in a negative frame of mind during situations when they may be processing or interpreting the

trauma. If survivors are in conflict with others and therefore feel they cannot talk about the traumatic experience, or are explicitly discouraged from talking about it, they may not be processing their trauma-related feelings and thoughts (Lepore, 2001; Ullman & Filipas, 2001). Negative reactions and statements can reinforce or create negative cognitions and beliefs about the self, others, and the world (Ullman, 1999). Even disagreements or disapproval from others that are not specifically anchored to the traumatic experience could cause survivors to feel more negatively about themselves and their symptoms. For example, a survivor may believe their recovery is proceeding poorly and that they are damaged if frequent arguments lead them to believe the trauma has permanently impacted their ability to socialize with other people.

There is evidence to support the hypothesis that social support impacts PTSD symptoms via cognitions. Robinaugh and colleagues (2011) examined PTSD symptoms, support within romantic relationships as measured by the Quality of Relationships Inventory (QRI; Pierce, Sarason, & Sarason, 1991), and posttraumatic cognitions as measured by the Posttraumatic Cognitions Inventory (PTCI; Foa et al., 1999) following a motor vehicle accident at four weeks and at sixteen weeks post-accident. Results indicated that negative posttraumatic cognitions mediated the relation between perceived partner support and PTSD symptoms. Similarly, Belsher and colleagues (2012) examined PTSD symptoms, posttraumatic cognitions as measured by the PTCI, and social constraints as measured by the Social Constraints Scale (SCS; Lepore & Ituarte, 1999). Posttraumatic cognitions again partially mediated the relation between social constraints and PTSD symptoms. One study examined the source of support in the context of the mediation model (Woodward et al., 2015). In a sample of intimate partner violence survivors and motor vehicle accident survivors, the social support of family and friends—but not significant

others—as measured by the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988) impacted PTSD symptoms via posttraumatic cognitions as measured by the PTCI (Woodward et al., 2015).

Studies in children and adolescents have also supported this hypothesis. In a study of children who experienced war-related trauma, conflict with siblings and being unpopular with peers impacted PTSD symptom via negative posttraumatic cognitions (Palosaari, Punamäki, Peltonen, Diab, & Qouta, 2016). Another study (Hitchcock, Ellis, Williamson, & Nixon, 2015) of trauma-exposed children found that negative appraisals as measured by the Child Posttraumatic Cognitions Inventory (CPTCI; Meiser-Stedman, Dalgleish, Glucksman, Yule, & Smith, 2009) mediated the relation between Time 1 (one month post-trauma) social support as measured by the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1998) and PTSD symptoms at Time 2 (six months later). In yet another study, the impact of perceived social support on posttraumatic stress symptoms (PTSS) was mediated by negative cognitions related to maltreatment the participants had experienced (Münzer, Ganser, & Goldbeck, 2017).

There is growing evidence in the PTSD literature that posttraumatic cognitions may be a pathway through which social support variables impact PTSD (Belsher et al., 2012; Hitchcock et al., 2015; Münzer et al., 2017; Palosaari et al., 2016; Robinaugh et al., 2011; Woodward et al., 2015). However, all of these studies required retrospective recall of support that was provided and available to them, perceptions which may be influenced by the person's current distress and symptomatology level. Furthermore, previous studies have largely assessed global perceptions of support; therefore there is a dearth of information about whether cognitions and appraisals are

also a pathway between specific post-trauma social interactions and PTSD symptoms. This study examined the proposed theory of interactions impacting cognitions more directly than the extant literature by exploring associations between support, cognitions, and outcomes tied to a specific trauma.

Disclosure and Post-Trauma Social Interactions

Although general social support has been clearly linked to posttraumatic outcomes and PTSD symptoms, trauma-specific support is highly important to study as well. Typically, trauma-specific support could be conceptualized as assistance provided (e.g., taking a friend to the hospital after an assault) as well as conversations that are related to the traumatic incident. These conversations can occur at any time in a given relationship following the initial disclosure of the trauma, if a disclosure is even required (i.e., a shared or already known trauma). For example, a trauma survivor may first disclose an experience at some point in a friendship, then a few months later mention it again in some context, “I’ve been having a lot of dreams about back then,” or “This is the anniversary of what happened and I’ve been having a tough time this week.” These conversations can be simple or complex, short or long, but each interaction allows for the opportunity for the recipient to provide some form of support, detrimental or helpful, which can impact how the survivor is feeling, thinking, and making sense of the trauma, trauma sequelae, and themselves.

Disclosure conversations are perhaps most frequently studied in regard to posttrauma social interactions, particularly within the context of the sexual assault literature. Not disclosing has been associated with increased symptomatology, at least in sexual assault survivors (Sinclair

& Gold, 1997). Delaying disclosure of traumatic experiences has also been shown to be associated with more intrusive and avoidance symptoms of PTSD (Ruggiero et al., 2004). There is a tendency for survivors to disclose to family and friends, often with the motive of looking to feel better or to respond to concern on the part of the recipient (Marriott, Lewis, & Gobin, 2016). Interestingly, better outcomes relative to disclosure have been associated with the discloser being female, and with the recipient being a friend (Ullman, 2010). Benefits of disclosure have been demonstrated both with regard to general stressors and traumatic experiences. One benefit is that disclosure can be empowering and reduce distress (Pennebaker, 1997; Ullman, 2010). Additionally, disclosure can provide the opportunity to feel understood and heard (Maercker & Horn, 2013). Regarding written disclosures, participants have noted that disclosure has allowed them to take a new perspective on an issue and in some way make sense of what happened (Pennebaker, 1993; Pennebaker, Colder, & Sharp, 1990), which aligns with the theory that discussing traumatic events and receiving support from others may alter cognitions and appraisals of the trauma. Hemenover (2003) also found that written disclosure of a traumatic experience increased positive perceptions of the self.

A meta-analysis of studies involving experimental disclosure found the procedure to be effective (Frattaroli, 2006). One of the most commonly utilized designs is the written emotional disclosure, or expressive writing paradigm, which involves participants writing their “deepest” thoughts and feelings about some stressful or traumatic event or situation (Pennebaker, 1997). Using this paradigm, it has been shown that writing about stressful events can produce health benefits (Frattaroli, 2006; Pennebaker, 1997) in students and clinical populations (Frisina, Borod, & Lepore, 2004). In a study with three experimental conditions, Radcliffe, Lumley, Kendall,

Stevenson, and Beltran (2010) asked undergraduate students with a history of traumatic exposure to write about their experience over the course of four days; one group knew their writings would be shared with the research team, one knew their writings would be private, and one was a control group writing about how to manage their time. Participants in the shared and private disclosure groups demonstrated decreased intrusions and avoidance with regard to their traumatic experience compared to the control group; however, participants in the shared disclosure group also demonstrated decreased depressive symptoms, interpersonal sensitivity, and physical symptoms at the three-month follow-up (Radcliffe et al., 2010). These results suggest that the social aspect of disclosing, beyond simply writing about their experience, may have additional benefits to trauma survivors (Radcliffe et al., 2010). However, disclosure of traumatic experiences is not uniformly positive and more inconsistent results have been observed in terms of psychological outcomes (e.g., mood post-disclosure). This is likely due in large part to the response that the survivor experiences, such as the development of, or an increase in, self-blame after a disclosure in which the support partner questioned their choices leading up to the trauma (Marriott et al., 2016; Mueller, Moergeli, & Maercker, 2008; Ullman, 2002, 2010). Therefore, understanding responses that promote healing and that induce harm are critical.

In terms of what occurs during the disclosures themselves, positive reactions to disclosures have been conceptualized to include validation, reassurance, expression of affection, and non-judgment (Ullman, 2010). However, many trauma survivors face negative reactions to disclosure. Sexual assault and intimate partner violence survivors often face blame, guilt, and criticism, and implications or outright statements that the assault was the result of their own behavior (Bonnar-White, Hetzel-Riggin, Diamond-Welch, & Tollini, 2015; Ullman, 2010).

More subtle negative reactions exist as well, such as having an egocentric response (the recipient focusing only on themselves and their reaction), attempts to distract or change the subject, and attempts to control the survivor's future actions (Ullman, 2010). Negative reactions have been found to be associated with not only PTSD symptoms, but also with problem drinking and negative coping styles (Littleton, 2010; Mason, Ullman, Long, Long, & Starzynski, 2009; Ullman & Najdowski, 2009).

Work on disclosure thus far has therefore examined reactions of the parties involved and benefits to the survivor. Unfortunately, there is a relative gap in the literature regarding survivor's perceptions and reactions experienced during non-disclosure, post-trauma social interactions. This study, which involves participants discussing a trauma analogue film clip with a friend upon the instructions of the research assistant, could likely be classified as both a disclosure and a post-trauma social interaction. However, given the non-voluntary nature of the interaction, it may more accurately fit the description of an interaction than a disclosure, which Ullman (2010) notes is typically a conscious decision to seek help or to answer questions by witnesses (e.g., police arriving at a crime scene).

Regardless of whether a conversation is considered a disclosure or not, it has been noted that relying simply on the survivor's perception of the interaction allows for negative reporting bias to impact results, and does not fully capture the disclosure or interaction experience (Maerker & Horn, 2013; Ullman, 2010). More distressed individuals may be more likely to view memories and experiences through a more negative lens (Ullman, 2010). Therefore, it may be helpful to obtain other forms of information, such as in-the-moment, objective (e.g., physiological, researcher-coded) measures and/or data from support partners.

Laboratory-Based Trauma Interactions

The methodology of laboratory-based interpersonal interactions allows researchers to explicitly examine verbal and non-verbal language used during these conversations, in contrast to studies where a participant reports on their perception of a recalled disclosure experience or post-trauma conversation. Additionally, both the perceptions of the participant as well as objective measures of the conversation established by the researcher can be utilized to look at associations with outcome variables.

However, there is a dearth of research that examines interpersonal interactions and PTSD symptoms using such a paradigm (Woodward & Beck, 2016). Indeed, Woodward and Beck (2016) suggest that more researchers utilize experimental or analogue paradigms, including the trauma film paradigm, to examine interpersonal processes and trauma outcomes, in part because of the ability to examine unscripted, overt behaviors. An important distinction in laboratory-based studies on trauma interactions exists between studies that have examined disclosure or conversation of a real trauma, and those that have utilized an analogue traumatic experience.

One type of laboratory-based study on post-trauma social interactions involves participants with a history of trauma exposure and/or a diagnosis of PTSD. Participants in these studies discuss traumatic experiences and the impact of these events with a conversation partner. In one such study of participants with a diagnosis of PTSD, participants and their partners (primarily significant others, but also friends and family members) discussed a neutral topic for ten minutes followed by a discussion of the impact of PTSD on their relationship and how the two may support each other for thirty minutes (Crevier, Marchand, Nachar, & Guay, 2014). First, one partner took the lead in describing how they were impacted and their problems for fifteen

minutes; the next fifteen minutes, the other partner led. The conversation was coded in terms of the frequency and intensity of ten behaviors from the Social Support Interaction Global Coding System (SICS; Pizzamiglio, Julien, Parent, & Chartrand, 2001). The SICS is a couples observational coding system that was adapted to examine interactions between someone with PTSD or an anxiety disorder and their caregiver (Creiver et al., 2014). The behaviors coded in the Creiver and colleagues (2014) study included positive (problem description, validation, listening as evidenced by eye contact and head nodding, emotional expression, proposed solutions, nonverbal behaviors) and negative (dysphoria such as crying, withdrawal, negative proposed solutions, and countervalidation) behaviors. Participants also filled out questionnaires regarding their PTSD and depressive symptoms (Creiver et al., 2014). Results indicated that, contrary to expectations, behaviors of the partner during the conversation were not associated with PTSD symptoms (Creiver et al., 2014). The authors noted that these results were highly inconsistent with previous literature on social support and trauma outcomes (Creiver et al., 2014). Topic of conversation may have played a role, as the focus was how the couple was impacted by the disorder rather than the trauma itself or beliefs about the trauma. Additionally, they were explicitly asked to consider how they could support one another (i.e., “what you are doing to support each other”; Crevier et al., 2014, p. 521), which may have influenced the quantity and severity of overt negative support behaviors.

Although not a study examining a trauma-related interaction, a study with a similar design is relevant to this study. Evans, Steel, Watkins, and DiLillo (2014) studied newlywed couples in which one of the partners had either been physically abused as a child or had been exposed to intimate partner violence in the home as a child. Unlike the Creiver and colleagues

(2014) study, participants were instructed to discuss a personal problem that was not a source of disagreement between the couple, and then switch to discuss the other person's personal problem (Evans et al., 2014). The Social Support Interactive Coding System (SSICS; Bradbury & Pasch, 1997) was used to code speech as positive social support, negative social support, neutral, and off-task. Results indicated that positive social support behaviors in the conversation were associated with lower self-reported trauma symptoms, as measured by the Trauma Symptom Inventory (TSI; Briere, 1995), in men with childhood maltreatment experiences (Evans et al., 2014). This effect diminished as severity of the maltreatment increased. Interestingly, the same buffer effect did not appear to occur for women, which Evans and colleagues (2014) suggested may be due to the fact that women may derive more generalized social support relevant to trauma symptoms from their friends or close family members while men may derive support predominantly from their significant other. These results contrasted with those of Crevier and colleagues (2014), which yields the question of whether a general conversation better reveals relationship dynamics and support that has an influence on trauma symptoms than does a trauma-specific situation. However, as so little research exists, this cannot be concluded, and suggests the need for more research. It may also be relevant that Evans and colleagues (2014) only required participants to have traumatic experiences, and not a diagnosis of PTSD.

Another study (Nachar, Lavoie, Marchand, O'Connor, & Guay, 2014) examining participants diagnosed with PTSD and their significant others (i.e., spouses or romantic partners) required participants to have a trauma-oriented discussion while also measuring physiological reactivity using heart rate response. The conversation was not coded in any way; social support was measured in terms of the participant's perception of their partner's behavior using the QSBA

(Guay et al., 2011), a self-report questionnaire on social support during times of anxiety (Nachar et al., 2014). Positive perceived support moderated the relationship between avoidance symptoms and changes in physiological reactions, and perceived negative social support was in general associated with changes in physiological responding (Nachar et al., 2014). The authors hypothesized that greater power may have allowed more associations with trauma symptoms to manifest in the results (Nachar et al., 2014). These results tentatively support associations between social support and avoidance symptoms in a laboratory-based trauma discussion.

In contrast to the above studies focused on actual traumatic experiences, other studies have utilized an analogue design to examine post-trauma social interactions. Two studies were critical in beginning to examine the impact of verbal disclosure experimentally. Lepore, Ragan, and Jones (2000) conducted a study wherein undergraduate students watched an aversive presentation and slide show on the Holocaust, and then either spoke alone, with a validating confederate, or with an invalidating confederate about their thoughts and feelings on the stimulus. Validating confederates talked about having a similar reaction while invalidating confederates stated they disagreed with the participants' reactions (Lepore et al., 2000). Participants tracked their intrusive thoughts of the stimulus and watched the presentation again two days later. Participants in the validated and invalidated condition reported lower intrusions and lower stress regarding re-watching the film as compared to participants who did not disclose to anyone (Lepore et al., 2000). However, there was a stronger effect in the validated condition (Lepore et al., 2000).

Lepore, Fernandez-Berrocal, Ragan, and Ramos (2004) expanded on this study by having female university students watch a gang rape scene from the film *The Accused*, and then not talk

to anyone, talk aloud but alone about their reactions, talk to a validating confederate, or talk to a confederate who challenged their point of view. Participants in the latter three conditions reported reduced intrusions and distress upon re-watching the film; however, the lowest amount of intrusions and distress were associated with the challenging condition (Lepore et al., 2004). The authors suggested that the challenge condition may have functioned as a form of cognitive restructuring in reducing threat and promoting reappraisal (Lepore et al., 2004).

Pruitt and Zoellner (2008) also manipulated the response that participants received to disclosure following a stressful film by examining the effect of positive and negative statements on participant distress and intrusive memories. The participants were asked to imagine they had just told someone about a car accident that they had been in (i.e., an amalgam of car accidents from the film clip they watched), and then watched the recorded response of a person they did not know. The video recordings were based on support components developed by the authors. Positive support consisted of: validation, encouraging disclosure, avoiding blame, sharing past experiences, establishing trust, avoiding stigmatization, emotional support, active listening, and offering tangible aid (Pruitt & Zoellner, 2008). The negative video included: invalidation, discouraging disclosure, blame, egocentric statements, violating trust, stigmatization, negative emotional support, dismissive attitudes towards concerns, and controlling reactions (Pruitt & Zoellner, 2008). A third video was labeled as a neutral response and consisted of: acknowledgement, discussing unrelated events, referring to unrelated past events, blaming a third-party or the intangible, avoiding trust issues, not discussing emotions, taking a “middle of the road” position, and not offering aid (Pruitt & Zoellner, 2008). PTSD symptoms, depressive symptoms, state mood, dissociation, rumination, perceptions of support from the video, and

intrusive thoughts about the film over the next two days were measured by self-report. In a manipulation check, participants rated the negative video as least helpful (Pruitt & Zoellner, 2008).

The negative reaction condition was associated with the greatest increase in negative affect compared to the neutral and positive conditions immediately after the conversation but not at the second session of the study (Pruitt & Zoellner, 2008). In terms of intrusive thoughts, more participants in the neutral condition experienced three or more intrusive thoughts than did participants in the negative or positive conditions (Pruitt & Zoellner, 2008). However, as the authors discuss, neutral support could also be conceptualized as “negative” in that ignoring or distracting from a discussion on a negative experience can be invalidating (Pruitt & Zoellner, 2008). The design of this study allowed for a more natural conversation with back-and-forth, unscripted conversation. Additionally, the statements may have more of an impact coming from a true support figure, people that trauma survivors would actually turn to outside of the laboratory.

Finally, Woodward and Beck (2016) asked female undergraduates to view an aversive film (i.e., the gang rape scene from *The Accused*) either with or without a romantic partner. Participants also self-reported on their perceived relationship quality, trauma history, and PTSD symptoms prior to watching the film. Participants were excluded if they had experienced sexual assault and/or scored a 44 or higher on a self-report PTSD measure. Participants tracked intrusions for three days and completed the Impact of Events Scale—Revised (IES-R; Weiss & Marmar, 1996) to assess trauma-related symptoms. Participants in the partner condition were given an opportunity to converse for five minutes after the film; they were not given any

instructions for how to spend this time and were simply told researchers had to shut down the equipment (Woodward & Beck, 2016). The SSICS (Bradbury & Pasch, 1997), adapted to include physical indications of support as well, was again used to examine participants' interactions, using five categories: positive emotional (e.g., expressing concern or care, validating), negative emotional (e.g., criticizing, minimizing), positive physical (e.g., hug or holding hands), and negative physical (e.g., rejecting physical contact), and self-disclosure (i.e., expressing their reaction to the film).

Having a partner there during the film did not impact distress during or after viewing (Woodward & Beck, 2016). However, participants in the partner condition experienced more intrusive memories of the film clip. There was also an interaction with perceived trust in the relationship such that participants in the partner condition had higher negative affect post-film when there was low trust in the relationship as opposed to high. The only type of behavior during the conversation that impacted outcomes was negative emotional behavior on the part of the partner; this behavior was associated with negative affect at follow-up and intrusive memories (Woodward & Beck, 2016).

Overall, there is much work left to be done in examining disclosures and post-trauma interactions, particularly in experimental or lab-based designs. There have been some contradictory findings regarding the impact of both positive and negative overt social support behaviors, and future work is needed to clarify these associations, particularly in regard to PTSD symptoms.

An unpublished study by the author utilized the trauma analogue design to examine overt social support behaviors. Participants watched the film clip of a motor vehicle accident alone on

a laptop with headphones, and then discussed the film clip with a friend whom they brought with them. Participants answered questions regarding posttraumatic cognitions they believe they would experience if they had had the same experience as the driver in the clip, and tracked intrusions of the film over the next two to four days.

Notably, participants in that study were asked to imagine that they experienced the traumatic incident from the film clip (i.e., a car accident caused by their own texting wherein their friends and others were killed), and discussed the situation with their friend as though they were coming to them to tell them about what had happened. An important difference in this study was that participants discussed their true reactions to the film rather than imagining how they would react to an event. Friends had to imagine how they *would* react if their friend had experienced that trauma, and for a minority of the participants, this made the conversation more awkward and at times humorous. Although imagining themselves in the film clip anecdotally appeared to make the film more self-referential, it produced a level of imagination and detachment meant to be partially remedied by being able to talk about true reactions and emotions.

Anecdotally it appears that there was a wide range of reactions from the friends in the feasibility study, including various forms of positive support and negative support. Some examples of positive support include: expressing empathy (*I'm sorry that happened; That must have been so scary; I'm glad you're okay*), offers to help (*Do you want me to go to the funerals with you?*), validation (*I would feel that way too*), making suggestions as to how to deal with the situation or feel better (*Maybe you should talk to a counselor; Maybe you can talk at high schools about texting to make something positive out of it*), and attempting to reduce guilt or

negative self-perceptions (*You did a bad thing, but you're not a bad person; You can still make something good of your life*). Some examples of negative support include: providing a negative appraisal of the person or their character (*You are a terrible person; You should go to jail; I can't believe you did that*), minimizing or invalidating the participant's feelings (*It's not that big of a deal; You shouldn't be feeling like that; Stop complaining*), repetitive commands for the person to take a certain action (*You have to talk to the families; You have to tell the police*), and ego-centric responses (*That's why I always ride my bike; I don't really like hearing about this stuff*). The experience of conducting this study informed the feasibility and procedure of this study.

The current project is innovative in its use of real-life support figures reacting to a true disclosure of a stressful situation. The majority of studies on social support and trauma measure social support using global perceived support questionnaires. Further, reports of social support after a traumatic event are given retrospectively, sometimes months and years after the actual traumatic event. Relatively few studies have examined received social support in the moment that it is happening. Furthermore, the participant has not had the opportunity to have other social experiences relative to the analogue trauma prior to the study, unlike other studies that ask participants to discuss a specific traumatic experience in the laboratory after time has passed and other social interactions relative to that trauma have occurred. This study allowed for examination of support provided immediately following an analogue traumatic situation. More accurate and complete information is needed about what is occurring in these trauma disclosures or conversations than can be obtained from self-report questionnaires. These self-report questionnaires could in turn be improved with more information about what truly occurs in these conversations.

Content of Posttrauma Social Interactions

One important distinction to consider in post-trauma social interactions may be between the sharing of simple facts and details (e.g., what happened, where, when) versus more expressive sharing of personal cognitions and emotions, particularly given the importance placed on the processing of the trauma. Prominent trauma therapies may shed some light on this issue. CPT encourages patients to share not only details of the trauma, but also thoughts and beliefs created or altered by the trauma with the therapist (Resick & Schnicke, 1993). However, other evidence-based therapies, such as PE, do not explicitly require that the trauma survivor share thoughts or cognitions generated by the trauma (Foa et al., 1991). Though discussing cognitions is not disallowed or discouraged in PE, processing of cognitions does often occur in the course of PE sessions (Foa et al., 1991). Cognitive perspectives on the trauma can change following PE despite the primary focus on relaying trauma details in the sessions (Foa et al., 1991).

Some researchers have examined the impact of sharing trauma details or facts during expressive disclosures. The original Pennebaker and Beall (1986) study found that written discourse of a traumatic experience led to health improvement, as measured by less frequent health care visits, but only for participants who wrote about facts and emotions, as opposed to participants who wrote about facts only, emotions only, or a neutral topic.

Supporting this finding, Ullrich and Lutgendorf (2002) asked participants to either journal about emotions regarding a personal trauma, cognitions and emotions regarding a personal trauma, or factual details about traumatic events in the news over the course of a month. Participants in the cognitions and emotions condition reported higher levels of posttraumatic growth and lower levels of physical illness, while participants in the other two conditions

reported no change in posttraumatic growth and participants in the emotions only condition reported increased physical symptoms (Ullrich & Lutgendorf, 2002). The authors speculated that focusing on emotions alone may have obscured an understanding of potential benefits of the event and ways in which they may have grown (Ullrich & Lutgendorf, 2002). This result may highlight again the importance of cognitions with regard to processing and making sense of traumatic experiences. Unfortunately, as the factual condition was not based on the personal experience of the participant, unlike Pennebaker and Beall (1986), conclusions cannot be drawn regarding discussing participants' own experience.

Few studies have examined PTSD symptoms as an outcome. Brown and Heimberg (2001) asked participants to write about their own traumatic experience (i.e., rape or attempted rape) either factually alone or factually with emotion. However, in this study, condition did not impact the outcomes in this study, including PTSD, social anxiety, and dysphoria symptoms (Brown & Heimberg, 2001). A greater level of detail in the writing, regardless of condition, was associated with lower dysphoria and social anxiety. In contrast, a study of recent war veterans found that participants who wrote about transitioning to civilian life via expressive writing (i.e., sharing emotions) showed a reduction in distress and anger as compared to participants in factual or no writing conditions (Sayer et al., 2015). Participants in the expressive writing condition also showed a reduction in PTSD symptoms as compared to the no-writing condition. Of note, this study did not focus on trauma experiences per se. A 2006 meta-analysis of experimental disclosure of traumatic and stressful life events (Frattaroli, 2006) did not include any other studies that examined both PTSD symptoms as an outcome and a design that pitted factual disclosure versus cognitive and emotional content, indicating a need for research in this area.

Studies in this area more typically examine writing about thoughts and feelings about a traumatic event versus writing about a neutral topic unrelated to trauma (e.g., Sloan, Marx, & Greenberg, 2011; Smyth, Hockemeyer, & Tulloch, 2008), and no studies have explored in-the-moment social interactions to determine whether sharing emotions and cognitions versus facts impact outcomes. Content shared may have a differential impact depending on the outcome studied. To date, posttraumatic cognitions have not been studied as an outcome, and neither has the interaction between social support and content. Given inconsistent results and a lack of understanding in how verbal content may function or interact with support, more research is needed.

This study design provides a unique opportunity to examine how the interaction between social support and content shared (e.g., facts versus emotional and cognitive reactions) may impact change in posttraumatic cognitions. Given the proposed importance of the opinions of the support network on the way people think and appraise situations, it is likely that negative support will be detrimental to posttraumatic cognitions, particularly when the support is in reaction to the survivor's own expressed emotions and thoughts. Invalidation is an important component of negative reactions to disclosure (Ullman, 2010), and invalidation may be most personal and strongly impactful when a person's thoughts and feelings are being invalidated as opposed to the details of a situation. On the other hand, positive support may feel most validating when it comes in response to expressed personal cognitions and emotions. This information could be beneficial in understanding how post-trauma social interactions impact posttraumatic cognitions and therefore posttraumatic outcomes.

This Study

The current project sought to address a critical gap in knowledge about how to optimize post-trauma social interactions in a way that can best help trauma survivors. Social support, including both positive support (e.g., empathy, validation, offers of aid) and negative support (e.g., blame, criticism, minimization, control), has been linked to PTSD symptoms and reprocessing of the trauma, which is critical for resolution of symptoms according to prominent emotional processing and social-cognitive theories of PTSD. There is nascent support for the theory that the relationship between social support and PTSD symptoms is partially mediated by negative posttraumatic cognitions. However, the role of cognitions in this relationship has not been examined beyond retrospective, self-report methodology to the author's knowledge. Additionally, little research has been done on support provided by peers and friends, which may be of greater relevance to young adults or individuals not in a romantic relationship at the time of the traumatic experience. Further, the majority of research on disclosure has involved either retroactive recall or disclosure to a research team member or confederate (Foynes & Freyd, 2013).

This study examined an in-the-moment post-trauma interaction experience with a close friend utilizing a trauma analogue design. The participant and friend both completed a short battery of questionnaires to assess relationship closeness and demographic factors. The participant next watched aversive film clips alone and then answered questions about mood and cognitions (Time 1). The participant then discussed their experience watching the clips with a close friend they brought to the study with them, with directions to either focus the conversation on factual information or on emotions and thoughts. Cognitions and mood were measured again

following this conversation (Time 2). Intrusive thoughts and avoidance of film-related stimuli were assessed 48 hours after the conclusion of the lab session (Time 3). Statements made by the friend during the interaction were coded for negative and positive support by a team of trained undergraduate researchers and the author to examine associations with analogue post-trauma outcomes, including mood, cognitions, intrusive thoughts, and avoidance of stimuli relevant to the film clips.

The goals of this study were therefore to investigate the following research questions using a trauma analogue design: (a) whether social support reactions during a post-trauma interaction with a friend will impact analogue PTSD symptoms such as intrusive thoughts, (b) whether cognitions associated with the analogue trauma play a role in this outcome, and (c) whether this effect is most optimally produced when the participant explicitly states their cognitions and trauma-related emotions versus a more factual account.

The larger goal is to improve post-trauma support and thereby reduce the incidence of PTSD symptoms, improving the global health of individuals who are exposed to trauma. The expected outcome was that positive support, particularly when given in response to shared thoughts and feelings of the trauma survivor, would lead to fewer negative posttraumatic cognitions, thereby resulting in fewer analogue post-trauma symptoms (e.g., distress, avoidance, and intrusive memories). Conversely, negative support, particularly when given in response to shared thoughts and feelings, was expected to lead to the most negative posttraumatic cognitions, resulting in increased distress, avoidance, and intrusive memories.

Hypotheses

- 1) A greater percentage of negative social support statements will be associated with an increase in negative posttraumatic cognitions from T1 to T2, an increase in negative mood from T1 to T2, a greater number of trauma-related intrusions at T3, and greater severity in avoidance symptoms at T3.
- 2) A greater percentage of positive social support statements will be associated with a decrease in negative posttraumatic cognitions from T1 to T2, a decrease in negative mood from T1 to T2, a smaller number of trauma-related intrusions at T3, and a lower severity in avoidance symptoms at T3.
- 3) Percentage of both negative and positive social support statements will be associated with amount of intrusive thoughts and severity of avoidance symptoms at T3 indirectly through T2 posttraumatic cognitions.
- 4) Participants in the feelings and thoughts condition will report a smaller number of trauma-related intrusions and a lower severity in avoidance symptoms at T3 than participants in the factual condition.
- 5) There will be an interaction between social support and condition such that percentage of negative support statements will be associated with the greatest increase in negative posttraumatic cognitions from T1 to T2 in the feelings and thoughts condition, while percentage of positive support statements will have the most positive impact on change in posttraumatic cognitions from T1 to T2 in the feelings and thoughts condition.

CHAPTER TWO

METHOD

This study utilized a trauma film paradigm design. Participants watched distressing content alone and answered questionnaires regarding their reactions. They then had an interaction with a self-selected friend in the laboratory focused on, as randomly assigned, either their thoughts and feelings with regard to the content or the factual content of the film clips. Questionnaires were administered again, and participants tracked intrusions over the next two days. All variables were assessed as self-report except for the verbal statements of the “friend” participant, which were coded as positive and negative social support statements. The independent variables were the positive and negative statements made by the friend, and the condition (e.g., facts versus emotions/thoughts). The dependent variables were change in mood from T1 to T2, change in negative trauma related to cognitions and beliefs from T1 to T2, intrusive memories related to the film clips reported at T3, and avoidance of stimuli reminiscent of the film clips reported at T3.

Participants

Participants were undergraduate women aged eighteen or older from Northern Illinois University recruited from the PSYC 102 research pool. The sample was restricted to women given the significant gender differences in the importance and impact of social support generally (Belle, 1987; Flaherty & Richman, 1989) and relative to PTSD symptoms (Ahren et al., 2004;

Andrews et al., 2003; King et al., 1999); social support appears to be more critical for posttraumatic outcomes for women than for men (Ahren et al., 2004; Andrews, Brewin, & Rose, 2003; King et al., 1999). Friends brought to the laboratory by participants could have been of any gender but must have been at least eighteen years or older. They did not need not be a student of NIU, but should not be a relative or romantic partner, as these categories of relationships may differ in closeness and norms.

Power analyses were conducted pre-data collection for the five hypotheses. Based on an estimated medium effect from extant literature with a desired power of .80, a sample of at least 74 participants would be needed for Hypotheses 1 and 2. For Hypothesis 3, a sample of 71 participants would be needed to detect an indirect effect using bias-corrected bootstrapping based on an estimated medium effect size for both *a* and *b* paths in the mediation model (Fritz & MacKinnon, 2007). Although the author examined several studies to estimate the effect for Hypotheses 4 and 5, power analyses were unable to be calculated due to a lack of appropriate comparison estimates. Data collection was planned to continue until 74 valid cases were present in the study.

Eighty-eight sets of participants and friends completed the first part of the study. Of these, fifty participants (56.8%) were randomized to the factual condition, and thirty-eight (43.2%) were randomized to the thoughts and feelings condition. Of the 88 participants, eight (9.0%) did not complete the second part of the study (T3) either in person or online, and were therefore not included in the analyses. Four participants (4.5%) were excluded due to research assistant error (i.e., a timepoint was not administered, video recording did not work). Two participants (2.3%) were excluded due to questionable data. One did not show to Time 3 twice

and did not bring their log when they showed up at the third appointment; researcher observed them rushing through questions and giving same answer to all items. The other participant gave the same answer on each item for multiple questionnaires and incorrectly answered a validity question. Out of 74 participants, one was excluded due to an extreme outlier, as further explained in the data cleaning section. Demographic and sum scores on questionnaires from T1 and T2 were analyzed for association with eligibility, using Chi-square (for dichotomous variables) and independent sample *t*-tests (for continuous variables). None of the variables had a significant association with eligibility.

The final sample consisted of 73 participants with a mean age of 19.5 years ($SD = 1.6$, 18-24). Participants identified their racial/ethnic identity as: 37.0% ($n = 27$) Caucasian or European-American, 30.1% ($n = 22$) Black or African-American, 11.0% ($n = 8$) Bi- or multi-racial, 8.2% ($n = 6$) Asian, and 13.7% ($n = 10$) wrote in an answer or left the answer blank. Fifteen participants (20.5%) identified as Hispanic or Latino/a. Most of the sample identified their sexual orientation as heterosexual (89.0%, $n = 65$). Participants identified their relationship status as: 57.5% ($n = 42$) single, 35.6% ($n = 26$) dating but not living with partner, and 6.8% ($n = 5$) living with partner. Five participants (6.8%) reported that they have already attained a college degree, although this question may have been misunderstood and may have been better phrased as number of years of education. Of the eligible participants, 56.2% ($n = 41$) were randomized to the “factual” condition, and 43.8% ($n = 32$) were randomized to the “feelings and thoughts” condition. None of the demographic variables or pre-analogue variables (e.g., global social support, prior PTSD symptoms) were significantly associated with condition.

Of the friends of the eligible participants, most (79.5%, $n = 58$) were women. The average age was 19.7 years ($SD = 1.5$, 18 - 24). The friend participants identified as: 42.5% ($n = 31$) Caucasian or European-American, 24.7% ($n = 18$) Black or African-American, 12.3% ($n = 9$) Asian, 6.8% ($n = 5$) Bi- or multi-racial, 1.4% ($n = 1$) Native American, and 12.4% ($n = 9$) wrote in an answer or left the answer blank. Fourteen (19.2%) of the friends identified as Hispanic or Latino/a. The majority (89.0%, $n = 65$) of the friends identified their sexual orientation as heterosexual/straight. The friends identified their relationship status as: 68.5% ($n = 50$) single, 27.4% ($n = 20$) dating but not living with partner, and 2.7% ($n = 2$) living with partner. Four friends (5.5%) reported that they had attained their college degree. Demographic variables of friends were not significantly related to condition or other pre-analogue variables.

Trauma Analogue Stimulus and Design

The trauma film paradigm has been used effectively to study questions of interest within the traumatic studies field (James et al., 2016). Although the film clip is only an analogue of a traumatic experience, it is considered an ethical approach to study the impact of traumatic situations in the moment rather than retrospectively. The paradigm has been used safely without inducing adverse long-term effects (James et al., 2016). Short-term, the paradigm has been particularly successful at studying short-term intrusive memories (James et al., 2016). Still, to prevent risk to participants, participants were informed verbally and in writing that they can stop participating in the study at any time (including turning off the film clip) without any penalty. Additionally, they were warned about the violent and graphic nature of the film clip. The methodology of participants discussing the film clip with a friend they have selected and brought

with them to the study is novel in the literature, with the closest approximation being Woodward and Beck's (2016) study wherein participants brought their significant other to watch a distressing film with them.

A variety of clips have been used in the traumatic film paradigm: car accident footage, death and injury footage, physical abuse and torture, and rape scenes from films (James et al., 2016; Weidmann, Conradi, Groger, Fehm, & Fydrich, 2009). However, many film clips originally used when the paradigm was designed could be considered outdated or of poor film quality today. Weidmann and colleagues (2009) examined the effects of a variety of film clips and found that rape scenes appear to produce the most reliable intrusive memories and distress. However, a common exclusion criterion for traumatic film paradigm studies includes participants who have experienced the trauma depicted in the film. A preventive measure would also likely be to exclude friends who have experienced the same stressful event. Given the target population—undergraduate women, most of whom are between the ages of 18 and 23—this would eliminate a significant amount of the potential participant pool. One-fifth to one-fourth of undergraduate women experience some form of sexual assault (Kilpatrick, Resnick, Ruggiero, Conoscenti, & McCauley, 2007; Koss, Gidycz, & Wisniewski, 1987; Krebs, Lindquist, Warner, Fisher, & Martin, 2007), and approximately one-in-ten undergraduate men have been estimated to have experienced some form of sexual assault or attempted sexual assault (Aosved, Long, & Voller, 2011).

Therefore, the use of other film clips was investigated. A group of five volunteers (four graduate students and one community member; four women and one man) viewed potential film clips and rated them on the intensity of their reaction (scale of 1-10) and the emotions produced

by the clips. The clips included: the texting and driving simulated video used in the author's pilot study (range 2 - 7; $M = 4.75$; sadness, anxiety, shock), one man murdering another man with a fire extinguisher from the film *Irreversible* (range 4 - 7; $M = 5.4$; disgust, anxiety, distress), real-life footage of terrorists executing men from an ISIS propaganda video available online (range 4 - 10; $M = 7.25$; sadness, fear, anxiety, disgust, anger, anxiety, horror), the curb-stomping scene from the film *American History X* (range 6 - 9; $M = 6.8$; anxiety, disgust, anger), the discovery of a mass of bodies from a genocide from the film *Hotel Rwanda* (range 3 - 4; $M = 3.2$; sadness, disgust), real-life footage of a woman run over by a car (range 1 - 5; $M = 3.2$; confusion, anger, sadness), real-life dash-cam footage of a women dying from a brick flying through her windshield (range 3 - 6; $M = 4.8$; sadness), a video depicting graphic abuse of sheep found on the PETA website (range 5 - 9; $M = 7.25$; sadness, anger, distress), and a video depicting graphic abuse of cows found on the PETA website (range 3 - 10; $M = 7.8$; disgust, sadness, anger, anxiety, distress).

Based on these results and a desire to balance the ability to induce distress and intrusions with preventing exclusion of a significant portion of potential participants, the two clips of animal abuse (<https://www.theguardian.com/world/video/2014/jul/11/sheep-shearer-animal-abuse-video>; <https://www.youtube.com/watch?v=byL2Xi4D-UM>) were selected. Together, the clips are approximately five minutes long. The clips depict undercover footage of these animals being abused on farms. The sheep are being sheared, but in a rough manner, including being hit over the head with hammers, kicked, stood on, made to bleed, hit and beaten. The cows are also treated unnecessarily roughly. The human abusers in the video clips appear to find the situation humorous or fun in many instances. To the author's knowledge, animal abuse videos do not

appear to have been used in the traumatic film paradigm previously; however, graphic violence and cruelty on the part of human beings is depicted.

Measures

Demographics

Participants answered questions regarding their self-identified gender, sexual orientation, age, relationship status, race, ethnicity, and highest level of educational achievement.

Friendship Closeness

The Relational Health Index for Peers (RHI-P; Liang et al., 2002) was used to assess the closeness of the friendship. An additional item was added to the questionnaire asking how long the two have known each in other in months and years. Participants rated how much they agree with the 12 items (e.g., “I feel understood by my friend”) on a scale of 1 (*Not at all*) to 5 (*Always*). The measure is meant to capture engagement, authenticity, and empowerment within the relationship (Liang et al., 2002). Scores were summed (possible range of 12 to 60) with higher scores indicating more closeness and engagement. The RHI-P was completed by both the participant and friend prior to viewing the film clips. The summed score of the participant may be used as a control variable in analyses, while the friend’s score was collected for exploratory purposes.

There was good internal consistency, as evidenced by a Cronbach’s alpha coefficient of .85, in a sample of first-and-fourth year undergraduate women (Liang et al., 2002). In this study, the Cronbach’s alpha was .83. Additionally, scores on the RHI-P correlated with expected

measures, including scales on the Quality of Relationship Index-Peer (.64, -.32, .61) (QRI; Pierce et al., 1991) and the Friendship scale from the Multidimensional Scale of Perceived Social Support (.50) (MSPSS; Zimet et al., 1988).

Current PTSD Symptoms

The self-report Life Events Checklist for *DSM-5* (LEC-5; Weathers, Blake, et al., 2013) and accompanying Posttraumatic Stress Disorder Checklist for *DSM-5* (PCL-5; Weathers, Litz, et al., 2013) were used to assess prior trauma exposure and PTSD symptoms. The LEC-5 is a list of seventeen life experiences (e.g., sexual assault, captivity, physical assault, witnessing sudden violent death) that would qualify as a traumatic experience under the A1 *DSM-5* criteria. Participants indicated whether they have ever personally experienced, witnessed, or were involved in the event as part of their job during their entire lifetime for each item. Then, participants were asked to select the worst event out of all of the events they have experienced (Weathers, Blake, et al., 2013).

The PCL-5 is meant to correspond to the LEC-5 (Weathers, Litz, et al., 2013). Participants answer twenty items corresponding to the selected worse event from the LEC-5. Participants answer how much PTSD symptom has bothered them in the past month (e.g., “Repeated, disturbing, and unwanted memories of the stressful experience?”) on a scale of 0 (*Not at all*) to 4 (*Extremely*). Item scores are then summed, and can range from 0 to 80, with higher scores indicating greater PTSD symptom severity. Both the participant and the friend completed the LEC-5 and the PCL-5 prior to watching the trauma film clip. The sum of PTSD symptoms for participants, for those who identify having at least one traumatic experience, was considered

as a possible control variable in analyses. The questionnaires were collected from the friend for possible post hoc analyses.

The PCL-5 is one of the most frequently used measures to assess PTSD symptoms, and has adequate psychometric properties (Blevins, Weathers, Davis, Witte, & Domino 2015; Wortmann et al., 2016). The PCL-5 demonstrated high internal consistency with regard to the total score ($\alpha = .95$) and the four subscale scores (i.e., the four categories of PTSD symptoms; $\alpha = .84, .89, .92, .92$) in a sample of military veterans (Wortmann et al., 2016). The Cronbach's alpha scores for this study were .93 for the total scale, and ranged from .77 (avoidance) to .88 (intrusions) for the four subscales. The PCL-5 has been shown to converge with other measures of PTSD symptoms, including a previous version of the PCL-5 corresponding to the DSM-IV ($r = .87$) and a clinician-administered measure of symptoms ($r = .68$; Wortmann et al., 2016). Wortmann and colleagues (2016) concluded that the PCL-5 is a sound self-report measure to utilize to assess severity of PTSD symptoms and provisional diagnosis.

Perceived Social Support

The Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988) was used to assess perceived global social support. The MSPSS has 12 items (e.g., "I can talk about my problems with my friends") that make up three subscales: friends, family, and significant other ("a special person"). Item responses range from 1 (*Very strongly disagree*) and 7 (*Very strongly agree*). Items are summed to create a total score (12 – 84), and higher sums indicate greater perceived support. The participants completed the MSPSS prior to watching the film clip. The total score sum may potentially be used as a control variable in analyses.

The MSPSS has sound psychometric properties. In one study, Cronbach's alphas for subscales and total scores were .85 to .91, and test-retest reliabilities were .75 to .85 after a time period of two to three months (Zimet et al., 1988). In this study, Cronbach's alpha for the total score was .89, and the three subscale scores ranged from .78 for the significant other subscale to .88 for the family subscale. Scores from the MSPSS were inversely related to depression ($r = -.25$) and anxiety ($r = -.18$) in a sample of undergraduates (Zimet et al., 1988), as would be expected given the stress buffering theory of social support (Cohen & Wills, 1985). The MSPSS has been used previously in samples of trauma survivors, including female undergraduate survivors (Littleton, 2010).

State Mood

The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) was used to assess state mood. The PANAS consists of twenty items of a single word (e.g., "Interested"), and participants indicated how much they feel each emotion in the current moment on a scale of 1 (*Very slightly or not at all*) to 5 (*Extremely*). One scale measures positive affect and the other measures negative. The items are summed for each scale (10 – 50), where higher scores for the negative scale indicate feeling more negative and distressed and higher scores on the positive scale indicate feeling more positive and alert (Watson et al., 1988). Only the negative scale was used in analyses. The PANAS was administered to participants after viewing the traumatic film and after the interaction with the friend. The sum of negative affect items at Time 1 (post-film, pre-conversation) was subtracted from the sum at Time 2 (post-conversation) to measure changes in state mood following the social interaction.

The PANAS has sound psychometric properties. Cronbach's alphas were high for both the negative (.84 to .87) scale and positive (.86 to .90) scale (Watson et al., 1988). Additionally, an examination of temporal stability of the PANAS indicates that the measure is sensitive to state changes in mood over shorter periods of time (e.g., this moment, today; Watson et al., 1988). In this study, the Cronbach's alpha was (T1= .80, T2 = .90) for the negative scale. The negative affect scale has been shown to be correlated with distress ($r = .65$), depression ($r = .56$), and state anxiety ($r = .51$) (Watson et al., 1988). Conversely, the positive scale was inversely correlated with distress ($r = -.19$), depression ($r = -.35$), and state anxiety ($r = -.35$; Watson et al., 1988).

Attention

A modified version of the Cognitive, Affective, and Visual Engagement Assessment Tests (CAVEAT; Sherrill, 2016) was used to assess attention paid to the film clips. This measure was created for a doctoral dissertation study that utilized a trauma analogue design (Sherrill, 2016). There are thirteen items that ask about how closely the participant paid attention as well as emotions felt while watching the film; five items were used in this study. One item (i.e., "I paid close attention to the film") asks the participant to rate their answer on a scale of 0 (*Not at all*) to 4 (*Completely*). Three items ask about percentage of time a participant engaged in a distracting behavior or looked away, while a final item asks the participant to estimate the total amount of time spent looking directly at the screen (Sherrill, 2016). Psychometric data are not available regarding this measure. Individual items were examined as potential control variables.

Posttraumatic Cognitions

Negative posttraumatic cognitions were assessed using a modified version of the self-report Posttraumatic Cognitions Inventory (PTCI; Foa et al., 1999). The PTCI asked participant how much they agree with 33 statements (e.g., “People can’t be trusted,” “I have to be on guard all of the time,” “If I think about the event, I will not be able to handle it”) on a scale of 1 (*Totally disagree*) and 7 (*Totally agree*). Items are categorized as reflecting negative beliefs about the self, the world, or self-blame for the traumatic experience. The items in the measure that refer to “the event” (i.e., traumatic experience) have been reworded to “the film clips”. Only the world and self-scales of the PTCI were used in this study. The five self-blame items were removed, as the viewer of the film clips is not at fault for what occurs. Of the 21 items on the self scale, six that reflect a permanent and life-altering change resulting from a traumatic experience were not used in this study, including, “I used to be a happy person but now I am always miserable,” “I will never be able to feel normal emotions again,” “I have permanently changed for the worse,” “My life has been destroyed by the trauma,” “I feel like I don’t know myself anymore,” and “Nothing good can happen to me anymore.” Although it is not ideal to alter the existing scale, these items would not be relevant to a trauma analogue study that is intended to have only short-term and relatively minimal impact on the participant, and these items may be confusing or misleading to participants. Posttraumatic cognitions have not previously been measured (to the author’s knowledge) as a consequence of participating in a trauma analogue study.

Items on each scale are summed and divided by the total number of items in that scale (world = 7, adjusted self = 15); higher scores reflect more negative posttraumatic cognitions. In

this study, combined scores on the self and world scales of the modified PTCI were used to assess changes in posttraumatic cognitions from before to after the social interaction.

The original PTCI has adequate psychometric properties and has been shown to be significantly related to PTSD symptoms stemming from varied traumatic experiences (Foa et al., 1999). There is also high internal consistency within the items; Cronbach's alphas were as follows: .97 (total), .97 (self), .88 (world), and .86 (self-blame) (Foa et al., 1999). In this study, the Cronbach's alphas were: total (T1 = .84, T2 = .88), self (T1 = .83, T2 = .87), and world (T1 = .81, T2 = .87). It should be noted, as discussed above, the "self" scale in this study does not contain all of the items on the self scale for the original measure. The PTCI has also demonstrated high retest reliability over the period of a week in two different samples (.74, .85; Foa et al., 1999). The PTCI has been shown to be correlated to other expected measures, such as the World Assumptions Scale (.25 to .51 depending on scale; Janoff-Bulman, 1989), and with anxiety (.70, .75) and depression (.75) measures (Foa et al., 1999). The PTCI is a commonly used measure of negative posttraumatic cognitions. Additionally, researchers have previously used the PTCI as a measure of cognitions when examining the role of cognitions in the relationship between social support and PTSD (e.g., Belsher et al., 2012; Robinaugh et al., 2011; Woodward et al., 2015).

Intrusions

Intrusive thoughts were assessed using a thought record log (see Appendix A) that the participant completed over the two days following the viewing of the film clips. In some cases, participants could not return in the specified amount of days and were instructed to continue to

keep track until their second session. Only the two days of data were used in analyses, however, to remain consistent between participants. The mean number of days was 2.73 ($SD = 1.65$), with a minimum of two and maximum of eleven. The modal number of days between sessions was two. Based on correlational analyses, there were no significant associations between study variables and number of days in between sessions. The log instructions asked participants to record the number of unwanted thoughts or memories of the clips they experienced each day and to rate how distressing or upsetting the thoughts were on a scale of 1-10 (1 = no distress, 10 = most distress). A total score of number of intrusions was calculated for each participant. Wording used in Woud, Holmes, Postma, Dalgleish, and Mackintosh (2012), Woodward and Beck (2016), and Pruitt and Zoellner (2008) was used in the instructions on the log. The instructions on the log were verbally explained to the participant in the session and understanding was assessed. Participants were asked to enter this data into an online survey 48 hours after the lab session.

Avoidance of Film-Related Stimuli

The Impact of Event Scale—Revised (IES-R; Weiss & Marmar, 1996) was used to assess avoidance of film-related stimuli. The IES-R consists of 22 items that assess reactions to a traumatic or stressful experience, and covers intrusions, hyperarousal, and avoidance symptoms. Items ask how much the participant has been bothered by each symptom (e.g., “I tried not to talk about it”) on a scale of 0 (*Not at all*) to 4 (*Extremely*). Items are summed (0 – 88) and higher scores are associated with more severe symptoms. The IES-R was completed by the participant at the second session with regard to the film clips, and the wording of the items has been adapted to orient the participant to the film clips. The total avoidance scale score (items 5, 7, 8, 11, 12,

13, 17, and 22) was examined as the T3 avoidance outcome variable.

The IES-R has been used previously in traumatic film paradigm studies (e.g., Woodward & Beck, 2016). The IES-R has been found to have high internal consistency with a Cronbach's alpha of .96 for the total score, .94 for the intrusions scale, .87 for the avoidance scale, and .91 for the hyperarousal scale in a sample of both community and treatment-seeking veterans (Creamer, Bell, & Failla, 2003). In this study, the Cronbach's alphas were .89 for the total score, .86 for the intrusions scale, and .75 for the avoidance scale. With regard to the avoidance scale, analyses indicated that the alpha would be .79 if the item, "My feelings about the film clip were kind of numb" was removed; this item could arguably be related more to numbness than intentional avoidance. The IES-R has also been shown to be highly correlated with other measures of trauma symptoms, including the PCL-5 (total score = .84, intrusion scale = .86, avoidance scale = .66, hyperarousal scale = .79) (Creamer et al., 2003).

Positive and Negative Social Support

Social support was assessed by examining verbal statements made by the participant's friend during their conversation in the session. Conversations were video recorded in profile, with the participant and friend facing each other, during the session, as well as audio-recorded on a voice-recorder as a back-up. Research assistants transcribed the conversations verbatim. Following this, the primary investigator and a group of three trained research assistants used the SSICS coding manual (Bradbury & Pasch, 1994, 1997; see Appendix B) to code the statements of the friends.

The SSICS was originally designed to code communication between spouses about a problem that one of the spouses is having. The coding system categorizes statements as positive instrumental, positive emotional, positive other, negative, neutral, and off-task (Pasch, Harris, Sullivan, & Bradbury, 2004). Positive emotional statements provide reassurance, comfort, and/or validation. Positive instrumental statements make suggestions, provide advice, or offer help. Positive other statements do not fall under the first two categories but that could be considered helpful (e.g., encourages expression or discussion). Negative statements are considered to be criticizing, minimizing, invalidating, blaming, controlling, and inattentive. Neutral statements are those that do not fall under other categories, or are too brief or ambiguous to be coded otherwise. Off-task statements are not relevant to the conversation or research study (Pasch et al., 2004).

The coding manual provided by Bradbury and Pasch (1994) suggest that each speaking turn be coded and the context of each statement considered. Coders are instructed to approach each speaking turn as neutral until further evidence is given. When a speaking turn could be coded multiple ways, coding precedence should be negative, then off-task, then neutral, and finally positive. In this study, all positive categories listed above were collapsed in analyses. Number of positive codes and number of negative codes were divided by total speaking turns of the friend to calculate the percentage of each, as was done by Evans and colleagues (2014). The total amount of friend statements in the conversation may be used as a control variable.

In studies conducted by the authors of the coding system, inter-rater reliability was good (positive = .88, .86; negative = .84, .80 respectively) (Pasch & Bradbury, 1998; Pasch, Bradbury, Davila, & Sullivan, 1999). In the previously discussed Woodward and Beck (2016) study with an undergraduate sample, interrater reliability was .93 for positive emotional and .86 for negative

emotional. Coding on the SSICS has been found to be associated with perceived support during the conversation and marital satisfaction (Cohan & Kleinbaum, 2002; Pasch & Bradbury, 1998; Pasch, Bradbury, & Sullivan, 1997; Pasch et al., 2004).

In this study, research assistants were trained to code the transcripts using video training materials supplied to the primary investigator by authors of the SSICS. It was proposed that research assistants should attain an interrater reliability of at least .80, and if the goal of .80 could not be met, consensus coding would be used to code. After research assistants were trained, interrater reliability analyses were conducted in two different ways on a subset of coded transcripts. Overall, the kappa coefficient for all speaking turns averaged across all pairs was .54. Interclass correlation coefficients yielded similar results: .47 for percentage of positive statements, .75 for percentage of negative statements, .63 for percentage of neutral statements, and .81 for percentage of off-task statements. Given these results, consensus coding was then utilized for coding, wherein the primary investigator and the three research assistants separately coded each transcript and then met to resolve differences in coding. One-third of all items were consensus-coded (33.3%). Across the transcripts, the least amount consensus-coded was 0% and the most was 79.2%. Anecdotally, it appeared that the majority of disagreement early in coding was related to whether statements met the threshold for positive comments, due somewhat to difficulty ascertaining motivation and perception of statements (e.g., is the friend revealing their own feelings in a *helpful* way?).

Additional Questions

Finally, several additional questions were asked of participants after the interaction with their friend that may be used as control variables or in post hoc analyses. The questions probe issues that may be relevant to the film clips or interaction. The questions include asking about whether the participant is a member of PETA or an animal rights or social justice organization, whether they grew up on a farm, and their perception of the interaction with their friend.

Procedure

See Appendix C for a timeline of the procedure. Participants were recruited (Appendix D) using the university's online psychology study system utilized by the introductory psychology courses and using course announcements with offers of extra credit if both sessions of the study were completed in other psychology classes. They were asked to bring a friend with them to the laboratory session with the inclusion and exclusion criteria described earlier. Upon arriving at the session, the participant and the friend were given informed consent forms. They were given time to read the consent forms (Appendix E), and then the task was verbally explained and they were given an opportunity to ask questions. After consenting, participant and friend completed the following self-report measures (Appendix F) separately: a demographics questionnaire, the RHI-P, and the LEC-5 and PCL-5. The participant additionally completed the MSPSS.

The friend was then asked to wait in the hallway while the participant viewed the traumatic film clip. Prior to viewing the film clips, the participant was informed: "The film clips are about five minutes total. Please remember there may be some graphic content and you can choose to stop participating in the study and stop watching at any time without any penalty to

you.” They were also provided with a sheet to read that had this statement on it. Then they heard instructions used in Woud et al., 2012: “Please watch as if you were there, a bystander at the scene of the events, and pay close attention to the clips as later there may be questions about film content.” Woud and colleagues (2012) argued this perspective would increase self-referential thoughts and feelings.

After the film clip ended, the participant completed another set of questionnaires (Appendix F) including the PANAS (T1), the modified CAVEAT, and the modified PTCI (T1).

The participant was randomized on into one of two conditions: one in which they are instructed to explain only facts and details relating to the clip and one in which they are instructed to share their thoughts and emotional reactions to the clip. The participant was given printed instructions based on their condition, and asked to read them. The research assistant then read the instructions aloud, confirmed their understanding, and answered any questions. Parts of the instructions were adapted from Ullrich and Lutgendorf (2002). The instructions were:

Emotions/cognitions condition: “We would like you to describe your thoughts and feelings about the clips that you just watched with your friend. They should have a good idea of your thoughts and emotions caused by watching the clips. For example, you could talk about thoughts you had as you watched or thoughts you are having now about it, or thoughts it prompted about yourself, other people, or the world. You could discuss how watching it made you feel or how certain parts made you feel. Try to stick to discussing the topic of your thoughts and emotions, regardless of what your friend says.”

Factual condition: “We would like you to describe what happened in the clips you just watched to your friend. They should have a good idea of what happened in the clips. You should

discuss what you saw and heard in detail. For example, you could talk about what people said in the film, the actions of people in the film, facial expressions, the setting of the film, etc. Try to stick to discussing the facts of what you saw as much as possible, regardless of what your friend says.”

The participant and friend were then brought together again. Both participants were given the general instructions: “We will now ask you to have the six-minute conversation. Please try to imagine you are talking with one another in a private setting and interact as you normally would, as you would on any other day.” The six-minute conversation was video-recorded. The research assistant remained outside of the room during the conversation.

The friend again left the room. The participant then engaged in a brief (five-minute) distraction task of solving math problems. The participant completed another set of questionnaires (Appendix F), including the PANAS (T2), the modified PTCI (T2), and additional questions. These included a manipulation check question and questions regarding vegetarian/vegan status, animal rights or social justice organization membership, and content the participant could recall from the conversation that were examined for relevancy for post hoc analyses. The manipulation check question assessed whether participants understood condition instructions and attempted to follow them: “On a scale of 1 (not at all true) to 10 (totally true), I focused on my thoughts and feelings in the conversation with my friend/focused on a factual description of the film clips with my friend.”

The participant was then given a paper log (Appendix A) to note occurrences of intrusive thoughts about the film clips and instructed on how to use it. The description of intrusive thoughts on the log were verbally read to the participant, and their understanding was confirmed.

The participant and friend were partially debriefed (Appendix G). The friend received \$5 and was entered into a random drawing for one of two \$25 cash prizes, and the participant received three course credits. The first session was concluded at that point.

In between Session 1 and Session 2, the participant received a text reminder or email (according to preference; one day after T1) to complete their intrusive thought log. Text reminders were recommended but participants could choose email if they preferred. The second session (T3) took place online, or in person, in return for one extra credit. Based on comments from participants in the author's pilot study, the most difficult aspect that arose was scheduling—being able to attend a Part 1 with a friend that corresponds to an in-person second session that they can attend within a few offered time slots in the next two to four days. Changes made in the dissertation study were to have the second session online and to offer more frequent and varied timeslots for the first sessions, in order to decrease difficulty with scheduling. During the T3 assessment (session two), which was intended to take place approximately two days following the first session, the participant alone completed the IES-R (Appendix F) and reported the data from their intrusive thought log. In addition, using wording from Davies and Clark (1998) and Woud and colleagues (2012), participants answered a single question at T3: “I have often forgotten (or have been unable) to record my intrusive thoughts or images in the log” on a scale of 0 (*Not at all true of me*) to 10 (*Completely true of me*). Log compliance was examined for any significant associations to predictors or intrusions, as in Holmes and Steel (2004). After this, the participant received the full debriefing document (Appendix G) and were thanked online, or in person if applicable, and received one additional course credit, or two if they completed the session in person. Participants who completed the second session (T3) were

entered into a random raffle for one of two \$50 cash prizes. The friend was emailed the second, more detailed debriefing (Appendix G) at this point. No adverse events were reported to the research team.

Data Analysis

Data were first examined for missingness, outliers, skew, kurtosis, and alignment with parametric statistical assumptions. The data were screened for outliers using descriptive statistics and box plots, and significant outliers were further examined. Statistical assumptions were examined using histograms, scatterplots, q-q and p-p plots, and collinearity diagnostics. Correlations and *t*-tests were conducted to examine basic associations among the variables. As planned, demographic variables, friendship closeness, perceived global social support, prior PTSD symptoms, attention paid to the film, and total number of friend statements were examined for potential inclusion as covariates.

Hypotheses were tested in the following ways:

Hypothesis 1: A greater percentage of negative social support statements will be associated with an increase in negative posttraumatic cognitions from T1 to T2, an increase in negative mood from T1 to T2, a greater number of trauma-related intrusions at T3, and greater severity in avoidance symptoms at T3. Four regression analyses were run. The independent variable was the percentage of negative social support statements made by the friend during the post-film social interaction. The dependent variables were: 1) change score in cognitions from T1 to T2, 2) change score in negative mood from T1 to T2, 3) total number of

intrusions at T3, and 4) sum of avoidance symptom severity. A p value of less than .05 would have indicated significance of the regression of the dependent variable on social support.

Hypothesis 2: A greater percentage of positive social support statements will be associated with a decrease in negative posttraumatic cognitions from T1 to T2, a decrease in negative mood from T1 to T2, a smaller number of trauma-related intrusions at T3, and a lower severity in avoidance symptoms at T3. Four regression analyses were run. The independent variable was the percentage of positive social support statements from the conversation. The dependent variables changed: 1) change score in cognitions from T1 to T2, 2) change score in mood from T1 to T2, 3) total number of intrusions, and 4) sum of avoidance symptom severity. A p value of less than .05 would have indicated significance of the regression of the dependent variable on social support.

Hypothesis 3: Percentage of both negative and positive social support statements will be associated with amount of intrusive thoughts and severity of avoidance symptoms at T3 indirectly through T2 posttraumatic cognitions. The proposed indirect effects hypotheses were examined using SPSS and the PROCESS macro with bias-corrected bootstrapping (Hayes, 2012). Four mediation models were analyzed. Percentage of negative social support statements was the independent variable, sum of T2 cognitions was the mediator, and the dependent variables included number of intrusive thoughts and sum of avoidance symptom severity in two separate analyses. Significance in such analyses is indicated by examining the confidence intervals of the coefficient of the mediation pathway, with confidence intervals that do not span 0 indicating significance. The analyses were repeated with percentage of positive social support statements as the independent variable.

Hypothesis 4: Participants in the feelings and thoughts condition will report a smaller number of trauma-related intrusions at T3 and a lower severity in avoidance symptoms at T3 than participants in the factual condition. A one-way ANOVA was run with condition as the group variable and number of intrusions as the dependent variable. The hypothesis would have been supported if the p value for F is less than .05 and the feelings and thoughts condition reports a lower mean number of intrusions than the factual condition. The analysis was then repeated with severity of avoidance symptoms as the dependent variable.

Hypothesis 5: There will be an interaction between social support statements and condition such that percentage of negative support statements will be associated with the greatest increase in negative posttraumatic cognitions from T1 to T2 in the feelings and thoughts condition, while percentage of positive support statements will have the most positive impact on change in posttraumatic cognitions from T1 to T2 in the feelings and thoughts condition. The proposed moderation hypothesis was examined using SPSS and the PROCESS macro (Hayes, 2012). Two moderation models were analyzed. Percentage of negative social support statements was the independent variable, condition was the moderator, and the dependent variable was the change score in cognitions from T1 to T2. Moderation is indicated by a significant interaction between the social support variables and condition in such analyses. The moderation effects are further examined using simple slopes analysis if an interaction is found. The analyses were repeated with percentage of positive social support statements as the independent variable.

CHAPTER THREE

RESULTS

Data Screening

There was 0.41% missing data. Of the participants who completed the PCL-5, three did not answer all of the items. Of the demographic variables, three participants and one friend did not answer regarding ethnicity, two did not answer regarding Hispanic identity, one did not answer regarding sexual orientation, one friend did not answer regarding age, and one friend did not answer regarding relationship status. All other variables used in analyses had complete data. Using dummy coding for missingness and independent sample t-tests, variables were assessed to determine if predictors were associated with missingness; no significant associations were found. Given that the amount of missing data was small and of limited use in analyses (Cohen, Cohen, West, & Aiken, 2003), expectation maximization was used for the missing PCL-5 item values rather than multiple imputation, as the PROCESS macro is incompatible with multiple imputation techniques.

The only variable to have a significant outlier as detected by box plots was self-reported number of intrusions. The participant reported 42 intrusions while the next highest report was 26 intrusions. Based on the Mahalanobis Distance detection method, the outlier had a quite high distance score from the centroid of the other scores ($D = 20.53, p < 0.001$), indicating high leverage and influence (Tabachnick & Fidell, 2013). Furthermore, the datapoint lent itself to a high kurtosis level for the variable (5.07, $SD = .55$), which was reduced to an acceptable level

(.93, $SD = .55$) upon removal of the datapoint. Removing this participant's data did not affect the outcome, and in particular, the significance testing of analyses. As noted earlier, the final sample size was 73 after removal of the outlier.

There were no other variables that displayed significant skew or kurtosis (± 2) before or after the removal of the outlier, with the exception of the one-item attention variable. In that case, attention displayed high kurtosis (4.69, $SD = .55$), which is not concerning as this variable is a manipulation check and a high level of attention is desirable. No transformations were made to the data.

Descriptive Statistics

The means, standard deviations, and minimum and maximum reported scores of key variables are displayed in Appendix H.

Pre-Analogue Variables

Participants endorsed a high degree of closeness with friends. The amount of time participants had known their friend counterparts ranged from 1 month to 216 months (i.e., 18 years); the modal response was a year. Similar to rates reported in other studies with undergraduate samples (e.g., Littleton, 2010), global social support was also high. The majority of the sample ($n = 66$, 90.4%) completed the PCL-5 based on reporting traumatic experiences on the LEC-5. Generally, PTSD symptoms were low. Of participants who completed the PCL-5, nine (13.6%) met the proposed cut-off score of 33 (Weathers, Blake, et al., 2013). The majority

of the friends ($n = 68$, 93.2%) also completed the PCL-5 based on endorsed traumatic experiences, and fifteen (22.1%) of them met the cut-off score.

Attention

Overall participants strongly endorsed paying attention to the film, based on their response to the item “I paid close attention to the film” ($M = 4.41$, $SD = .78$, mode = 5). Only six participants (8.2%) rated the item as “sometimes,” “barely,” or “not at all.” Participants estimated that they looked away from the screen an average of 3.53 ($SD = 4.51$) times, closed their eyes an average of 2.22 ($SD = 5.09$) times, and covered their eyes an average of 2.05 ($SD = 5.47$) times. The modal response to each behavior was 0.

Post-Analogue Affect

Normative data in non-clinical samples include a mean of 16.4 ($SD = 6.2$) in one study (Watson et al., 1988) and 16.0 ($SD = 5.9$) in another study (Crawford & Henry, 2004). Both studies asked participants about affect over the “past few days.” In this study, negative affect was much higher than these means at T1 and somewhat higher at T2. However, in Pruitt and Zoellner’s (2008) trauma analogue study, negative affect measured following viewing the video was within a range (29.81 – 32.02) similar to this study. Overall, negative affect decreased from T1 to T2; only two participants (2.74%) reported an increase in negative affect from T1 to T2.

Post-Analogue Cognitions

As this study used a modified version of the PTCI with fewer items, there are not previous studies with which to compare scores. Nonetheless, mean levels of posttraumatic cognitions within the sample generally do not appear to be high. On average, cognitions decreased slightly from T1 to T2. Sixty participants (82.19%) reported lower cognitions at T2, two participants reported no change (2.74%), and eleven participants (15.07%) reported higher posttraumatic cognitions at T2.

Social Support Variables

Neutral statements were proportionally the most frequent, composing an average of approximately two-thirds of each friend's statements. One conversation contained only neutral statements; there was not a conversation without at least one neutral statement. The next most frequent category proportionally was positive support statements, followed by negative statements, and then off-task statements. In the Evans and colleagues (2014) study, which only examined codes of negative and positive speaking turns by a spouse, positive support (average of 43% of speaking turns received by men and average of 65% of speaking turns received by women) was also higher than negative support (average of 4% of speaking turns received by both genders).

Outcome Variables

An average of about seven intrusions occurred between the first and second sessions of the study. On Day 1, there was an average of 3.36 ($SD = 2.75$) of intrusions reported; on Day 2,

2.25 ($SD = 2.56$); and on Day 3, 1.34 ($SD = 2.01$). Intrusion severity overall appeared to be low. On Day 1, average severity was 4.81 ($SD = 2.82$); on Day 2, 2.99 ($SD = 2.70$); and on Day 3, 2.29 ($SD = 2.75$). In one trauma analogue study, 10.7 to 24% of participants (depending on condition) reported three or more intrusions over the course of two days (Pruitt & Zoellner, 2008). In another study, mean number of intrusions over three days post-analogue was 2.26 to 3.89 depending on condition (Woodward & Beck, 2016). Compared to these previous studies, intrusive thoughts appeared to be somewhat more frequent in this study. Details of intrusions were examined for reference to the video clips or their themes. Participants mentioned seeing images from the videos (e.g., beating the sheep) and thoughts about the video in general (e.g., thinking about how sad it was). Some participants mentioned these thoughts in response to certain situations, such as engaging with their pets, eating, and shopping. Post-analogue symptoms on all scales of the IES-R, including the avoidance scale, appear to be low. Eleven percent of the sample ($n = 8$) reported no avoidance at all.

Additional Questions

Eight (11.0%) of the participants indicated that they were vegan or vegetarian. Five (6.8%) endorsed living on a farm at some point. Three (4.1%) reported being members of any social justice organization and one (1.4%) reported being a member of PETA or another animal rights organization. Most of the participants ($n = 63$, 86.3%) reported that they would choose to talk to this particular friend if something very stressful or traumatic happened to them. The post-analogue variables were not significantly related to other relevant study variables. When participants were asked what they could recall their friend saying to them during the

conversation, participants wrote varying responses, such as the friend listened to them or asked questions, the friend shared an anecdote related to the videos or their views on animal cruelty, or the friend described their emotional reaction to the content of the videos.

Manipulation Check and Log Adherence

A manipulation check was conducted to test adherence to condition (factual discussion; thoughts/feelings discussion). See Appendix I for self-ratings for the total sample as well as participants assigned to each condition. Although participants in the thoughts and feelings condition reported slightly higher focus on thoughts and feelings compared to the factual condition, and vice versa for focus on facts, differences between condition were not significant. These results suggest that the manipulation of content shared by the participant was likely not effective. Nonetheless, hypotheses related to condition were analyzed for thoroughness. Finally, on the question regarding forgetting to fill out the intrusions log, participants on average indicated high compliance ($M = 2.34$, $SD = 2.92$). Approximately two-thirds rated themselves as adherent, at 2 or below ($n = 48$, 65.8%).

Initial Analyses

Bivariate correlations and independent sample t-tests were run to examine associations between study variables (see correlation matrix in Appendix J). Overall, the expected relationships between social support, cognitions, and outcome variables were not significant. Percentage of negative support and percentage of positive support were negatively correlated with one another. However, contrary to hypotheses, neither positive nor negative support were

significantly related to: 1) change in posttraumatic cognitions from T1 to T2, 2) change in mood from T1 to T2, or 3) number of intrusions and avoidance severity at T3. Additionally, neither were related to cognitions or mood at either T1 or T2.

Posttraumatic cognitions at T1 were positively related to cognitions at T2, and negatively related to change in cognitions. In other words, higher cognitions at T1 were associated with a greater reduction in negative thinking from T1 to T2. This may reflect the fact that greater movement in score was possible, whereas those with lower cognitions initially may have had less room to adjust their thinking. Cognitions at T2 were positively related to change in cognitions, indicating higher cognitions at T2 were associated with less decrease in negative thinking. Contrary to expectations, posttraumatic cognitions (whether the T1, T2, or change variables) were not significantly correlated with outcomes, including number of intrusions and avoidance severity at T3. However, there was a close to significant association between cognitions at T2 and later avoidance, $r = .26$, $p = .055$. Cognitions at T1 and T2 were negatively correlated with global social support and positively associated with pre-analogue PTSD symptoms. Change in cognitions was positively correlated with change in mood, indicating that a reduction in negative thinking was related to a reduction in negative mood. Due to study design, directionality cannot be determined.

Self-reported number of intrusions was not significantly correlated to any predictor variable. They were positively correlated with avoidance severity on the IES-R. Avoidance severity was not significantly correlated to any predictor variable; it was negatively correlated to self-reported attention to the analogue videos, suggesting a propensity to avoid during the video may continue post-analogue.

Despite the assigned conditions likely not functioning as intended, as described above, independent sample *t*-tests were conducted to compare differences in means on key variables between the two conditions (Appendix K). Although there were not differences on pre-analogue variables, there were two variables with significantly different means that were assessed after viewing the film clips and *before* randomization (and conversation with friend). Participants in the thoughts/feelings condition reported paying greater attention to the film clips and higher posttraumatic cognitions at T1 compared to participants in the factual condition. Therefore, there appear to be differences between the two groups prior to randomization, though it is not clear why this would be. Posttraumatic cognitions at T2 were also higher in the thoughts/feelings condition than the factual condition; although this variable was assessed post-randomization and conversation, it cannot be determined whether it is related to condition given the pre-randomization differences in cognitions between conditions.

In terms of potential covariates, demographic variables, friendship closeness, and total number of friend statements were not significantly related to any outcome variables, and were therefore not used in hypothesis testing. Attention paid to film was used as a covariate in analyses where the outcome variable was avoidance severity. Global social support was negatively correlated with T1 cognitions, T2 cognitions, and PCL score based on prior trauma; global support was not correlated with change in PTCI and was therefore not used as a covariate. PCL scores based on prior trauma were negatively correlated with global social support, and positively correlated with cognitions at T1 and T2; PCL scores were not correlated with change in PTCI and therefore not used as a covariate.

Hypothesis Testing

Although correlation analyses did not indicate significant relations that would form the basis of support for hypotheses, analyses were run in order to demonstrate ability to conduct planned analyses.

Four regression analyses were run predicting an increase in negative cognitions, an increase in negative mood, more intrusions, and greater avoidance severity due to a higher percentage of negative social support statements (Hypothesis 1). All regression analyses were not significant, as indicated by all p values being above .05 (see Appendices L-O).

Four regression analyses were run predicting a decrease in negative cognitions, a decrease in negative mood, fewer intrusions, and less avoidance severity due to a higher percentage of positive social support statements (Hypothesis 2). All regression analyses were not significant, as indicated by all p values being above .05 (see Appendices P-S).

Using the Hayes PROCESS macro (Hayes, 2012), four mediation models were run, with either percentage of negative support statements or percentage of positive support statements predicting either amount of intrusions or severity of avoidance symptoms indirectly through sum of cognitions at T2 (Hypothesis 3). All analyses were not significant, as indicated by 95% confidence intervals (CIs) of the mediation coefficient spanning 0 (see Appendices T-W).

Two one-way ANOVAs were conducted to test whether participants in the feelings and thoughts group would report either fewer intrusions or less avoidance severity than the other (factual) condition (Hypothesis 4). Although the factual condition reported higher mean intrusions and avoidance severity than the other condition (see Appendix K), the differences

between groups were not significant, as indicated by the p value for the analyses being greater than .05 (see Appendices X and Y).

Finally, the Hayes PROCESS macro (Hayes, 2012) was used to run two moderation models in which the relationship between either percentage of negative support statements or percentage of positive support statements and change in cognitions was moderated by condition. The models were not significant, as indicated by a lack of a significant interaction coefficient between the social support variables and condition (see Appendices Z and AA). Therefore, simple slopes analyses were not conducted to further examine the interaction.

In sum, results indicate a failure to reject the null hypothesis for each hypothesis, which was to be expected given the lack of significant association between social support variables (i.e., percentage of positive and negative social support statements) and all other variables in the study, as well as between condition and outcome variables.

Post Hoc Analyses

Given the failure of the manipulation, the two manipulation questions in which participants indicated how much they focused on thoughts/feelings or facts in their conversations were further explored. Pre-randomization variables were examined first for any relation to these two variables. Paying close attention to the film was positively correlated with focusing on factual information, $r = .29$, $p = .01$. This may be because participants who paid more attention were better able to speak to the facts and have more knowledge to draw upon in the conversation. Cognitions at T1 were negatively related to focusing on thoughts/feelings, $r = -.27$, $p = .02$, but not focusing on factual information, $r = .16$, $p = .17$. This result suggests participants

with more severe posttraumatic cognitions were less likely, for whatever reason, to discuss these thoughts in a conversation with their friend. Cognitions at T2 displayed a similar result in that there was a negative correlation to focusing on thoughts/feelings, $r = .25, p = .03$, but no relation to a factual focus. Focusing on factual information was positively correlated with a worsening in posttraumatic cognitions from T1 to T2, $r = .24, p = .04$.

Social support variables were also found to be related to focus of conversation.

Percentage of negative statements was negatively correlated with a focus on thoughts/feelings, $r = -.24, p = .04$, suggesting that either the participant sharing more thoughts and feelings elicited fewer negative statements, or the relative absence of negative statements led the participant to share more thoughts and feelings. Percentage of neutral statements was positively correlated with a factual focus, $r = .28, p = .02$, which is likely related to the friend responding to factual details. Total number of intrusions, $r = .25, p = .03$, and severity of intrusions, $r = .24, p = .04$, were positively correlated with sharing thoughts/feelings, but were not related to sharing factual information. Mood variables, global social support, and prior PTSD symptoms were not significantly correlated with focus of conversation.

Additionally, correlational analyses were conducted with all three scales (i.e., intrusions, arousal, and avoidance) of the IES-R, beyond just the avoidance scale examined in the main analyses, in order to examine potential variables of interest for future studies. In some circumstances, mood during T1 and T2 was related to later posttraumatic symptoms on the IES-R. Negative mood at T1 was positively correlated with the intrusions scale, $r = .27, p = .02$, and total symptoms, $r = .24, p = .04$. Although avoidance was not significantly related to mood at T2, the arousal scale, $r = .40, p < .001$, and the total IES-R score, $r = .29, p = .01$, were significantly

related to negative mood at T2. Intrusions were not significantly related to negative mood at T2, $r = .23, p = .047$. All three scales, as well as the total score, were significantly positively related to the number of intrusions reported by participants. The correlation between number of intrusions and the intrusions scale was $r = .69, p < .001$. Furthermore, average severity of intrusions reported on the intrusions log was also significantly related to the intrusions scale on the IES-R, $r = .69, p < .001$. This may provide further corroboration for the intrusions reported. The intrusions and arousal scales of the IES-R were not significantly related to any other key study variables.

CHAPTER FOUR

DISCUSSION

Perceived social support has been robustly linked to posttraumatic symptoms, such as intrusions, avoidance, negative changes in emotions and cognitions, and hyperarousal (Brewin et al., 2000; Ozer et al., 2003). Social support has been generally measured in a global fashion meant to represent various sources and instances of support in a survivor's life (e.g., MSPSS; Zimet et al., 1988). Less is known about how individual interactions, and the valence and type of support provided therein, are related to posttraumatic outcomes and cognitions. However, researchers (Evans et al., 2014; Nachar et al., 2014; Pruitt & Zoellner, 2008; Woodward & Beck, 2016) have begun to highlight a relationship between posttraumatic symptoms and support demonstrated in dyadic conversations in laboratory-based settings. In almost all of these studies, due to the nature of studying trauma, the traumatic experience(s) has occurred prior to the study. The closest approximation to studying support provided in the more immediate wake of a traumatic experience is the use of a trauma analogue design. The purpose of this study was to expand this field of work by examining whether researcher-coded verbal social support provided by a peer in a single unstructured interaction following exposure to a trauma analogue would be related to posttraumatic outcomes and posttraumatic cognitions. A sample of 73 undergraduate students, each with a self-selected peer, completed the trauma analogue study in two sessions.

Summary and Interpretation of Results

It was hypothesized that positive social support would be related to fewer intrusions, less avoidance, improvement in mood post-interaction, and fewer negative cognitions post-interaction; negative social support was expected to be related to variables in the opposite direction. It was also hypothesized that a change in cognitions would mediate the relationship between support and outcomes. However, a basic relationship between social support as measured in the study and all outcomes was not found. Overall, the friend's coded statements (negative or positive) were not related to affect, posttraumatic cognitions, avoidance of trauma-related stimuli, or trauma-related intrusions. Additionally, cognitions were not significantly related to outcomes; therefore social support was not related to outcomes either directly or indirectly through cognitions. Furthermore, it was hypothesized that participants instructed to focus on their thoughts and feelings more during the interaction, as opposed to participants instructed to focus on factual information, would report fewer intrusions and less avoidance. Condition was not significantly related to these variables. The lack of relationship between social support and posttraumatic outcomes, as well as between cognitions and outcomes, is contrary to previous literature (e.g., Belsher et al., 2012; Brewin et al., 2000; Ozer et al., 2003; Robinaugh et al., 2011; Woodward et al., 2015).

Despite failure to reject the null hypotheses, there are aspects of the study design that appeared to work as intended. Participants in this study recorded and reported intrusions that were relevant and somewhat distressing, particularly in the first day of the study. Intrusions were further corroborated by congruent results on the intrusions scale of the IES-R. Additionally, short-term distress, as measured by the PANAS, and witnessed by the researcher anecdotally,

was also adequately produced by the study design despite the focus on harm to animals rather than traumatic experiences involving humans. Finally, while avoidance was low compared to survivors of true traumatic experiences, participants did report some avoidance of trauma-related stimuli, based on a five-minute video clip. The significant association between intrusions and avoidance supports theories of PTSD that identify avoidance as a key factor in creating and maintaining symptoms (Ehlers & Clark, 2000; Foa & Kozak, 1986; Foa & Rothbaum, 1998).

Researchers should consider many explanations when hypotheses are not supported by data. It may be that study constructs were not appropriately measured, that there are flaws in the theoretical framework that generated the hypothesis, and/or that the design did not appropriately test the hypothesis (Cronbach & Meehl, 1955). Measurement of trauma outcomes appeared to be adequate, given congruence between frequency and severity of intrusions on the intrusions and log and the intrusions scale of the IES-R. Intrusions data were similar to that reported by other studies (e.g., Pruitt & Zoellner, 2008). However, the measurement of social support and posttraumatic cognitions may have contributed to a lack of findings. Additionally, due to the failed manipulation of content via condition, the hypothesis relating to condition could not be appropriately tested.

First, results could suggest that a single, brief interaction, regardless of support provided, may not have an impact on these outcomes. Global social support may be more important to cognitions about an experience than event-specific conversation, particularly a single conversation. Indeed, the majority of research establishing the link between social support and PTSD focuses on perceptions of available social support globally (Guay et al., 2006). Relatedly, subjective perceptions may be more relevant than objective coding of conversations in some

contexts. For example, recent work related to the Social Reactions Questionnaire (Ullman, 2000), a survey regarding social reactions to sexual assault disclosure, has demonstrated variation in whether certain items are rated as positive or negative by both researchers and participants (Dworkin, Newton, & Allen, 2018). In terms of the coding schema, coding focused on verbal statements only may have missed nuances in conversation, including non-verbal communication (Foynes & Freyd, 2013).

It is also noteworthy that the current interaction was not initiated by the participant, but rather was required of them. This may have led participants to view the interaction as more about the researcher's motives or as a task with certain criteria, rather than a forum to elicit help or comfort. Likewise, friends may have been unsure of their role and focused on understanding what was in the film clip, rather than the current needs of the participant. While a focus was placed on the film clip and how the participant would convey it to the friend to obscure focus on the friend's role, this may have altered behavior during the otherwise unscripted interaction. However, Woodward and Beck (2016) found significant results between partner behavior and outcomes in a conversation with no instructions given; one difference in that study was that participants did not know that this conversation was being collected or evaluated as part of the study.

The lack of relationship between percentage of negative supportive statements and outcomes is particularly surprising, given the particular impact of negative social support in posttraumatic outcomes (Christiansen & Elklit, 2008; Davis et al., 1991; Ullman, 1999; Ullman & Filipas, 2001). Additionally, in Woodward and Beck (2016), only the negative emotional behavior of the romantic partner after the analogue video was related to intrusions and affect.

Notably, in this study, negative statements were on average only ten percent of the interaction, which may have limited ability to detect an effect. It could also be that a friend's criticism or disagreement related to the participant's reactions to an animal abuse video are less damaging than a romantic partner's criticism or disagreement relevant to the rape scene used in Woodward and Beck (2016).

With regard to posttraumatic cognitions, the analogue design may not have produced posttraumatic cognitions as typically conceptualized. First, the measure used to assess posttraumatic cognitions (i.e., PTCI) may not have reflected cognitions relevant to this analogue design. Indeed, the PTCI had not previously been used to reflect cognitions related to an analogue trauma. Instead, PTCI items may have reflected more long-held, core beliefs about the self (e.g., "I am inadequate," "There is something wrong with me as a person") that are not easily altered by the brief analogue. Posttraumatic cognitions focused more specifically on the content of the trauma may have yielded different results.

Second, the amount of time after viewing the film clips may not have been long enough to alter or create posttraumatic cognitions, particularly those that relate to overall self-image. The same may be true of the severity of the film clips themselves. Cognitions also did not change much from T1 to T2, and this restricted range of change values may have required a greater sample size or power to detect an effect on outcome variables. The content of the video (animal abuse) may have a somewhat diluted impact on the typical cognitions as theorized in emotional processing theory (Foa & Kozak, 1986; Foa & Rothbaum, 1998). While animal abuse can be related to the thought, "The world is dangerous," the focus on animals may not have translated to "The world is dangerous for humans" or "The world is dangerous to me." While intrusions did

occur for most participants, they may have been linked to cognitions not analyzed, perhaps related to emotions of sadness or guilt. Notably, an analogue trauma lacks the element of self-blame that is conceptualized to be heavily related to other cognitions and PTSD symptoms (Resick et al., 2014).

Importantly, the condition manipulation failed to create a significant difference between the two groups in terms of content (thoughts/feelings versus facts) discussed by the participant. Regardless of condition, most participants offered descriptive information or thoughts about the broader animal cruelty issue. It is likely that participants were reacting to their friends' input and questions (e.g., questions about details of the conversation), which may have altered the flow of the conversation and focus of the participant. While an evolving back-and-forth is representative of a natural interaction between friends, the failed manipulation of condition did not allow for proper testing of whether a focus on thoughts/feelings or factual information was more beneficial with regard to outcomes. Further instructions regarding the conversation and an improved check of understanding after providing the instructions may have been beneficial in this regard.

Overall, while the conversations were meant to simulate processing, seen as essential to preventing or improving posttraumatic symptoms (Foa & Kozak, 1986; Foa & Rothbaum, 1998; Resick et al., 2014), it is unclear whether true processing of the video occurred in these conversations, given content, context, and length of time. Furthermore, there may be a question of whether the stimuli of the video precipitated enough distress to need, or be affected by, the support of others. Pruitt and Zoellner (2008) asked participants to imagine that it was themselves who were in the accident portrayed in the analogue trauma, which may have been more relevant to participants than the current analogue.

Finally, it is possible that the theory on which the hypotheses were based is flawed or incorrect. However, given that research has consistently established connections between social support and PTSD symptoms, it is more likely that this relationship does not translate to this particular form of interaction in this singular context, or that one of the constructs was not adequately represented. If support provided in brief interactions is not relevant to symptoms, it may be that it is the accumulation of interactions with many sources, and the perceptions of these interactions, that drives the association between social support and posttraumatic symptoms. Additionally, previous literature with regard to the impact of social support in laboratory-based settings is more mixed and less established than that of subjective or global social support, and so the current result is perhaps less surprising. Furthermore, Woodward and Beck (2016) found an effect with regard to negative emotional behavior while this study did not distinguish between types of positive and negative behavior, or analyze nonverbal behavior. With regard to posttraumatic cognitions and PTSD symptoms, the literature is also well-established; however, samples are often composed of individuals who meet full criteria for PTSD or who have directly experienced a traumatic event (e.g., sexual assault, combat, motor vehicle accident), as opposed to witnessing abuse of a non-human, which would not fall under criterion A of the DSM-5 (APA, 2013).

Post Hoc Interpretations

Post hoc analyses must be interpreted with caution, but may provide insight into other results and inform future research. The post hoc analyses suggest that negative affect is a better predictor of posttraumatic outcomes than other variables in the context of this study.

Peritraumatic distress, in terms of “fear, horror, and helplessness” was removed from criteria for PTSD in the *DSM-5* (APA, 2013); however, there is support in the literature for peritraumatic distress as a risk factor for PTSD, if only in the short-term (Vance, Kovachy, Dong, & Bui, 2018). Self-rated affect had a relationship to outcomes whereas other variables did not; higher negative affect at both timepoints was related to higher total symptoms on the IES-R. Negative affect at T1 but not T2 was related to the intrusions scale, which may suggest that the likelihood of intrusions may be tied to initial, immediate distress. Replication of these results and understanding of intervening factors is needed to understand how to apply this finding.

Additionally, participants’ rating of their focus on thoughts/feelings or facts on a continuous scale was examined as a proxy for condition. In contrast to hypotheses, a greater emphasis on thoughts/feelings was related to worse outcomes in terms of number and severity of intrusions. This finding is unexpected given the literatures on expressive writing and the emotional disclosure paradigm, in which a focus on putting emotions and thoughts into words is related to better outcomes than not doing so. However, the majority of this work does not focus on PTSD symptoms explicitly as an outcome (Frattaroli, 2006). A factual emphasis was not related to intrusions or other PTSD symptoms. Interestingly, a greater thoughts/feelings emphasis was related to lower negative cognitions while a factual emphasis was related to higher negative cognitions. This reinforces the disconnect between the posttraumatic cognitions measured in the study and the outcome variables of the study. It may be that participants who were more willing to discuss their thoughts and feelings in the interaction are more aware of their thoughts or predisposed to thinking of themselves in a more positive way. Likewise, these participants may be more aware of their emotions or may have had a stronger reaction to the

videos to discuss, which is relevant since affect was related to outcomes, as discussed above. Participants with more negative cognitions prior to the interaction were also less likely to discuss their thoughts and feelings in the interaction, which could represent a form of experiential avoidance (Marx & Sloan, 2005). While we can only speculate, it is a fruitful line of research to understand what trauma survivors are inclined to focus on and share in disclosures and interactions, and how this may be related to other variables directly or indirectly.

Limitations and Future Research

This study lacked a full experimental design; the main predictor variable (i.e., social support) was not manipulated and there was not a control condition. Directionality and causality in the relationships between some variables cannot be concluded (e.g., affect and cognitions measured at the same timepoint). Future research should examine whether having a conversation with a friend or with another person at all, regardless of valence (e.g., negative, positive), affects outcomes, using a control condition. It is possible that the buffering effects of perceived social support were already present prior to the conversation in that participants may have been primed to feel cared for given that their friend was willing to accompany them to the study. Future research may therefore also consider an additional condition with a stranger. Additionally, future research could consider a condition that does not involve speaking about the video and focuses on another topic during the conversation instead. Avoidance (and subsequent symptoms) may have been reduced for all participants simply by participating in the required interaction, which may have reduced a natural inclination to avoid thinking about the film clips and themes after the interaction.

The sample demographics limit generalization to undergraduate students at a four-year university. Additionally, participants in this study were able to locate and persuade a friend to accompany them to the study for limited gain to the friend (i.e., \$5 and raffle). The friends were also of similar demographics and likely also students at the university. Therefore, these results may not translate to all peer or non-peer relationships. The recruitment description may also appeal to a certain type of college student, including one who has friends available, is comfortable asking for a favor, or is interested in a study related to friendship. A higher sample size could also increase power and allow other statistical analyses, such as inclusion of all hypotheses in one model.

Another limitation of the study is the reliance on logs returned two days after session 1, particularly when logs were not returned properly. A small minority of participants filled out their log at the second session and claimed that they had forgotten their completed log at home. Notably, some participants chose to complete the second session online and so it cannot be determined if they had completed their log prior to completing the online questionnaire. Given that any data collected from outside of the session can be hastily filled out at the last minute rather than properly tracked, ecological momentary assessment (EMA) that asks participants to report data at certain timepoints via technological means may yield more consistent or trustworthy data (Shiffman, Stone, & Huffard, 2008). This method would also not require reliance on the participant returning a log or other items at a later session. A second potential method is to track intrusions themselves in the laboratory using a behavioral task (Lau-Zhu, Holmes, & Porcheret, 2018); however, this method does not capture intrusions as they may present in natural settings.

Future research should use a coding system that may be more relevant to the research design and context. It is also crucial for future research to examine the relationship between objective coding and the participant's perception of the interaction and its helpfulness. It was a major limitation of this study that the participant's perception of the interaction was not captured. While participants answered a question regarding what they remembered from the interaction, direct quantitative or qualitative questions about helpfulness, support, and valence may have been useful in understanding the findings in this study. Coding of nonverbal support would be key in understanding whether certain statements are meant to be negative, or, within a certain relationship, meant to be funny or comforting. The coding system used in the current system may also have been too broad in its coding by utterance rather than by each individual statement or sentence, and finer-grained coding may be helpful. Future research could utilize a qualitative approach to examine themes that more accurately represent positive and negative support.

Ultimately, it is not clear whether participants conceptualized the task as providing support. While this is similar to many real-world contexts in which people interact without explicitly asking for help or support, priming for support or framing the interaction in this way (as in previous work; e.g., Crevier et al., 2014) may elicit more relevant conversation to the construct. In some cases, the interactions evolved into what appeared to be more curiosity about the video content or debating the merits of the issue (e.g., animal cruelty). While this could be an aspect of discussing a traumatic experience, a different framing of the conversation may have allowed a greater focus on the participant's experience of the video. Still, this approach is less naturalistic and may elicit more positive support (or what participants view as positive support) than may be naturally provided in such situations. Given the variability of staying on topic,

coding nonverbal support may be particularly important. In a true interaction, the benefits of interacting with a loved one or caring peer may be nonspecific, similar to the influence of common factors in psychotherapy. Off-topic content is also part of an interaction that could make a participant feel more positively about themselves, their relationship with the other person, their sense of belonging, or their past experiences.

Another major limitation of the study was the lack of significant difference between condition. Framing of the interaction and the study in a different way could provoke interactions more focused on the analogue experience and/or on providing help or support. For example, language such as, “Imagine your friend is coming to talk to you about her reaction” may set a different tone for the task.

Additionally, the PTCI was adapted for use in this study, which may have altered the constructs being captured by the items due to not administering it as originally intended. The crux of the selection issue is that surveys of posttraumatic cognitions presuppose that the participant has experienced a traumatic experience themselves, or witnessed one that deeply altered the way that the participant perceives and understands themselves, which is likely not true of an analogue trauma. Previous studies have not used measures of posttraumatic cognitions related to the analogue; exploration of relevant cognitions in a qualitative manner and development of new measures may be helpful. Additionally, there may be measures better suited to capturing subtle changes in cognitions in a short period of time, as the PTCI may reflect more stable, trait-like beliefs. However, cognitions as measured in this study were related to the participant’s perceived sharing of thoughts and emotions in the interaction with their friend, which should be further examined.

Finally, other variables that may relate to the social context of trauma may be relevant to future research. Attachment has been conceptualized as a mediator between social support and interpersonal functioning and posttraumatic outcomes (Campbell & Renshaw, 2018; Woodhouse, Brown, & Ayers, 2018). While this study examined relationship closeness, there may be other relevant measures of pre-trauma relationship functioning, such as trust, which functioned as a moderating variable in the study conducted by Woodward and Beck (2016).

Implications

Given the lack of significant results and study limitations, implications of this study are limited. A long-term objective of work related to this study may be to improve disclosure and trauma-related interactions to best assist trauma survivors in terms of how they think about the trauma and the symptoms they experience.

Results could suggest that brief interactions shortly post-trauma are not helpful, nor harmful, with regard to certain symptoms (i.e., avoidance and intrusions). In this case, interactions with a peer may be a neutral suggestion that could be made by clinicians, and more impactful recommendations should be made. However, previous research with control conditions suggest that speaking to another person following an analogue trauma is more helpful than not speaking to anyone (Lepore et al., 2000; Lepore et al., 2004). Combined with these results, it may be that it is more important to talk to someone rather than the content of the conversation for minimally distressing events. However, the sexual trauma literature has consistently indicated that the response provided is key to whether disclosing is helpful or harmful (Ullman, 2010).

Additionally, if a client or survivor is thinking about disclosing trauma to a peer, it may be more helpful to consider their perception of the peer and their relationship rather than explore specific statements or advice given in the past by the peer. However, it should be noted that pre-analogue relationship closeness was not associated with outcomes in this study. An emphasis on how supported the survivor felt in previous interactions may be the best indicator of whether an interaction with a peer would be helpful or at least not harmful, although future research would be needed to confirm this. Furthermore, it could be that social support via singular interactions does have an impact on outcomes but in more traumatic circumstances, rather than the brief and relatively short-term distress induced by the analogue trauma in this study. If true, it may be that the trauma analogue paradigm may not be the ideal method to study interpersonal processes relative to traumatic outcomes and cognitions.

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APPENDIX A
INTRUSIVE THOUGHT LOG

Thought Record Log

For each day, please record:

- How many thoughts you had over the past day that involved the themes or images that you saw in the two animal film clips (the number of times you thought about it)?
 - What goes through our minds can either take the form of words and phrases (verbal thoughts), or it can be like mental images. Although mental images often take the form of pictures they can actually include any of the five senses, so you can imagine sounds or smells too.
 - **Only count thoughts, images, or sensations that came into your mind when you did not want them to. This does not include thoughts where you were purposely trying to think about or remember the film clips.**

AND

- How distressing/upsetting were these thoughts? on a scale of 0-10 (0 = not at all distressing, 10 = extremely distressing)

Date	How many thoughts or images?	How distressing/upsetting? Scale of 0 (not at all) – 10 (extremely)	Details of thoughts— what were you thinking about or what was the image in your mind?
Day 1: __/__/__			
Day 2: __/__/__			
Day 3: __/__/__			

APPENDIX B

SSICS CODING MANUAL EXCERPTS

Social Support Interaction Coding System

Originally developed by Bradbury & Pasch, 1994

B. Coding Guidelines

1. Code each speaking turn of both spouses.
2. The coding system has two dimensions: speaker (helper vs. helpee) and speaker's action (positive, negative, neutral, off-task; see below for specific categories).
3. Consider the context and tone of each action. The same literal statement can have distinctly different meanings depending on the interactive context and the tone in which it was conveyed.
4. Consider alternative behaviors that the helper could have exhibited. View each behavior as something that the spouse has actively chosen to do in that circumstance, and recognize the person could have chosen otherwise.
5. Coders should begin listening to each speech turn with the idea that it will be neutral unless it meets criteria for another code.

C. Summary of Coding Categories

NT = Neutral

OT = Off-Task

PI = Positive Instrumental

PE = Positive Emotional

PO = Positive Other

NG = Negative

Note regarding order of codes:

When a given segment or speaking turn contains content that would receive two different codes, use the following order to determine which code takes precedence: negative, off-task, neutral, positive.

D. Coding Categories

Neutral (NT)

1. Descriptive information about the problem that does not meet criteria for positive, negative, or off-task.
2. Repeated analyses of the problem that do not further contribute to understanding or solutions to the problem.
3. Use NT for on-task speech that is difficult to understand, ambiguous, or too brief to be coded as positive or negative.
4. NT is used when a given speech turn contains elements of positive or negative codes but does not meet threshold criteria. NT may also be used when a given speech turn contains subthreshold elements of both positive and negative codes.

Off-Task (OT)

1. Spouse talks about matters not relevant to the problem under discussion.
2. Spouse continues to talk about irrelevant material, regardless of who originally took the discussion off-task.

Note: Off-Task is reserved for situations in which the conversation has clearly departed from the task at hand. Speech that strays from the topic but seems to follow from the interaction is coded based on its content.

Positive Instrumental (PI)

1. Suggests a specific plan of action.
2. Gently suggests a new way of handling the problem:
3. Emphasizes need for a specific plan, or demonstrates willingness to prepare one with helpee.
4. Offers to assist in some specific way.
5. Offers constructive feedback.
6. Asks helpee what would be most helpful for him/her (helper) to do.
7. Asks helpee specific questions aimed at narrowing the problem, or asks helpee questions about the next steps to take:
8. Suggest strategies for managing feelings or other aspects of the problem:

Positive Emotional (PE)

Note: If a unit can be coded as either PE or PI, code it as PE. PE and PI take precedence over PO.

Note: For PE, the unit must have affect-related content. Use PE when feeling words are used.

1. Helps spouse to express or clarify feelings about problem.
2. Tries to bolster spouse's self-esteem.
3. Reassures or consoles spouse.

4. Conveys understanding of spouse's concerns and difficulties, acknowledges appropriateness of helpee's feelings.
5. Provides genuine, appropriate encouragement (for example, comments on recent improvements regarding the problem):
6. Expresses affection, or information to suggest that helpee is loved, cared for, or esteemed.
7. Expresses commitment to helping the spouse in general--says he/she will "always be there" for helpee.
8. Validates spouse as a person.
9. Expresses concern about spouse.
10. Helps spouse to be optimistic.
11. Joins with spouse in expressing feelings (even negative ones) about problem, reveals own feelings in a helpful way:

Positive Other (PO)

1. Offers a specific, clear analysis of problem (note that this has to be more than simple description and is not a suggestion or advice).
2. Summarizes in a helpful way what has been said. (This may include summarizing suggestions that were given or feelings expressed).
3. Assists spouse in defining problem.
4. Asks general questions that reveal willingness to help and interest.
5. Helps spouse reframe problem in a useful way (except when giving advice or making a specific suggestion.)
6. Recognizes humor in situation; helps spouse see humor, uses humor in a useful way.

Note: Humor is coded depending on the specific nature. Sarcastic or belittling humor is negative. Notice whether laughter is mutual in making coding decisions.

7. Agreement with spouse, acknowledgement of the appropriateness of helpee's beliefs or interpretations.
8. Is accepting of spouse's difficulties and shortcomings.
9. Makes a positive process comment.
10. Comments on value or strength of relationship.
11. Reveals own experience in a helpful way (except when giving specific advice or suggestion, which would be PI, or when expressing feelings, which would be PE).
12. Refocuses discussion after it is off-task.
13. Elaborates on previous positive statement.
14. Encourages helpee to continue speaking.
15. Attends clearly to partner.
16. Helps to define what he or she can do that will and won't be helpful.

Negative (NG)

1. Criticizes spouse, spouse's approach to problem, or spouse's behavior.
2. Blaming, accusing, criticizing spouse, pointing out spouse's weaknesses (Note: These are negative even when they bring the discussion back on-task, or point out important problems).
3. Uses sarcasm, humiliation, sarcastic humor.
4. Asks an insulting, inappropriate, or pointed question with negative tone.
5. Gives useless advice.

6. Expresses boredom or lack of interest in helpee and the problem.
7. Withdraws from discussion, acts very passive.
8. Tells spouse what they should do to improve situation.
9. Demands that helpee consider his/her recommendations.
10. Offers analysis of problem without consideration of partner's views or comments.
11. Talks about self and own problems in unproductive way.
12. Discounts significance of problem, denies problem.
13. Expresses doubt or pessimism about helpee's chances of improving or changing (can include reminders of past failures).
14. Expresses negative affect (anger, contempt, whining, etc.). Note: Expression of anger or sadness at the source of the problem would not be included here (e.g., "I get really angry also when your mother treats you that way").
15. Misses or mishandles easy opportunity to support spouse:
16. Acts defensively.

SSICS Coding Adapted for Dissertation

Coding Guidelines

1. Code each speaking turn of the friend.
2. Consider the context of the statement. The same literal statement can have distinctly different meanings depending on the interactive context.
3. Coders should begin listening to each speaking turn with the idea that it will be neutral unless it meets criteria for another code.
4. We will be collapsing the different categories of positive into one overall positive category.

Codes

Neutral (NT)

1. Descriptive information about the video or the participant's reactions or comments that does not meet criteria for positive, negative, or off-task.
2. Use NT for on-task speech that is difficult to understand, ambiguous, or too brief to be coded as positive or negative.
3. NT is used when a given speech turn contains elements of positive or negative codes but does not meet threshold criteria. NT may also be used when a given speech turn contains subthreshold elements of both positive and negative codes.

Off-Task (OT)

1. Friend talks about matters not relevant to the video or the participant's reaction to it or their thoughts and emotions.

Note: Off-Task is reserved for situations in which the conversation has clearly departed from the task at hand. Speech that strays from the topic but seems to follow from the interaction is coded based on its content. For example, the following would not be off-task:

Friend: You're always like this about sad stuff. Remember when you watched that movie and I told you to just stop crying?

Positive

1. Suggests a specific plan of action.
2. Gently suggests a new way of handling the problem.
3. Emphasizes need for a specific plan, or demonstrates willingness to prepare one with participant.
4. Offers to assist in some specific way.
5. Offers constructive feedback.
6. Asks participant what would be most helpful for him/her (friend) to do.
7. Asks participant specific questions aimed at narrowing the problem, or asks participant questions about the next steps to take.
8. Suggest strategies for managing feelings or other aspects of the problem.
9. Helps participant to express or clarify feelings about problem.
10. Tries to bolster participant's self-esteem.

11. Reassures or consoles participant.
12. Conveys understanding of participant's concerns and difficulties, acknowledges appropriateness of participant's feelings.
13. Provides genuine, appropriate encouragement.
14. Expresses affection, or information to suggest that participant is loved, cared for, or esteemed.
15. Expresses commitment to helping the participant in general--says he/she will "always be there" for participant.
16. Validates participant as a person.
17. Expresses concern about participant.
18. Helps participant to be optimistic.
19. Joins with participant in expressing feelings (even negative ones) about problem, reveals own feelings in a helpful way.
20. Offers a specific, clear analysis of problem (note that this has to be more than simple description and is not a suggestion or advice).
21. Summarizes in a helpful way what has been said. (This may include summarizing suggestions that were given or feelings expressed).
22. Assists participant in defining problem.
23. Asks general questions that reveal willingness to help and interest.
24. Helps participant reframe problem in a useful way (except when giving advice or making a specific suggestion.)
25. Recognizes humor in situation; helps participant see humor, uses humor in a useful way.

Note: Humor is coded depending on the specific nature. Sarcastic or belittling humor is negative.

26. Agreement with participant, acknowledgement of the appropriateness of participant's beliefs or interpretations.
27. Is accepting of participant's difficulties and shortcomings.
28. Comments on value or strength of relationship.
29. Reveals own experience in a helpful way.
30. Refocuses discussion after it is off-task.
31. Elaborates on previous positive statement.
32. Encourages participant to continue speaking.
34. Helps to define what he or she can do that will and won't be helpful.

Negative (NG)

1. Criticizes participant, participant's approach to problem, or participant's behavior.
2. Blaming, accusing, criticizing participant, pointing out participant's weaknesses.
3. Uses sarcasm, humiliation, sarcastic humor.
4. Asks an insulting, inappropriate, or pointed question with negative tone.
5. Gives useless advice.
6. Expresses boredom or lack of interest in participant and their reaction.
7. Withdraws from discussion, acts very passive.
8. Tells participant what they should do to improve situation.
9. Demands that participant consider his/her recommendations.
10. Offers analysis of problem without consideration of participant's views or comments.

11. Talks about self and own problems in unproductive way.
12. Discounts significance of problem, denies problem.
13. Expresses doubt or pessimism about participant's chances of improving or changing (can include reminders of past failures).
14. Expresses negative affect (anger, contempt, whining, etc.). Note: Expression of anger or sadness at the source of the problem would not be included here
15. Misses or mishandles easy opportunity to support participant.
16. Acts defensive

APPENDIX C

PROCEDURE SEQUENCE AND MEASURES COLLECTED
AT EACH TIME POINT

Procedure sequence and measures collected at each time point

Session 1	
Segment	Measures
1. Informed Consent	
2. Initial Questionnaires	Both: Demographics, RHI-P, LEC-5, PCL-5 Participant only: MSPSS
3. Film instructions	
4. Participant watches film alone	
5. T1 Questionnaires	PANAS, modified PTCI, modified CAVEAT
6. Conversation randomization and instructions	
7. Conversation with friend	
8. Distraction task—math problems	
9. T2 Questionnaires	PANAS, modified PTCI, additional questions, manipulation check
In between sessions	
10. Track intrusions	Intrusions log
Session 2	
10. T3 Questionnaires	Report intrusions from log, log-compliance question, IES-R

APPENDIX D
RECRUITMENT DOCUMENT

Study name: Film Clips and Friends

Abstract: This study examines your ability to watch video clips and describe the experience to a friend.

Description: You will bring a friend of your choosing with you to the lab, and discuss a brief video clip with them that you have watched alone. The film clip may contain distressing or graphic content regarding humans and/or animals. You will also complete some questionnaires regarding the video clip, psychological well-being, relationships, and past upsetting life events. In a second session, which you can choose to do online or in-person two days later, you will complete some brief questionnaires. **IF YOU DO THE SECOND SESSION IN PERSON, YOU WILL RECEIVE ONE EXTRA CREDIT.** You will be entered into a random raffle to win one of two \$50 cash prizes, if you complete the second part of the study. In between the two sessions, you will be asked to record your thoughts about the video clip. Note: Your friend can be anyone other than a relative or romantic partner and must be 18 years or older. They will only have to attend part of Session 1. They will be paid \$5 for participation and entered into a drawing for one of two \$25 cash prizes.

Eligibility Requirements: Women only. Must be at least 18 years old.

Course Restrictions: Participants must currently be enrolled in a section of PSYC 102.

Duration: 2 Sessions (First session: in-person, 1 hour, Second session: online, .5 hours or in-person .5 hours, 2 credits)

Credits: 4 (possible 5) total

Researcher: Christy Allen
Email: callen@niu.edu

APPENDIX E
INFORMED CONSENT DOCUMENTS

Consent Form: Psychology 102 Student

INFORMED CONSENT

I agree to participate in the research project titled “Film Clips and Friends” being conducted by Christy Allen, B.A., and Michelle Lilly, Ph.D., at Northern Illinois University. This study has been reviewed and approved by the Northern Illinois University Institutional Review Board.

Purpose: To better understand the experiences involved in watching a potentially upsetting film clip and describing the experience of watching a film clip to a friend.

Tasks: I understand that if I agree to participate in this study, I will be asked to do the following: view a short film clip that contains images that may be distressing or violent with regard to humans and/or animals; discuss the film clip and my reactions with a friend; complete questionnaires regarding myself, my social relationships, and my reactions to the film clip; and track my thoughts about the film clip for approximately a week before completing the second session online or in person where I will report my thoughts and further questionnaires.

Length: I understand that the first session will take approximately an hour, and the second session would take approximately half an hour.

Recording: I understand that my conversation with my friend about the film clip will be video and audio-recorded. This is the only part of the study that will be recorded. There is no right or wrong behavior; I am only asked to act naturally.

Confidentiality: In order to maintain confidentiality, the video recordings will be stored on a password-protected computer in a locked room. I will be assigned a numerical ID that will be associated with my data. Identifying information, such as my name, will not be kept with the data. Furthermore, I understand that any information I provide will be stored in a locked room accessible only to laboratory personnel and on a password-protected computer. Also, I understand that the data I provide will never be reported individually; all information will be presented in groups. These steps are all taken to protect my identity and confidential in the research process.

Rights: I am aware that my participation is voluntary and may be withdrawn at any time without penalty or prejudice, and that if I have any additional questions concerning this study, I may contact Dr. Michelle Lilly at (815) 753-4602. I understand that if I want more information regarding my rights as a research participant, I may contact the Office of Research Compliance at Northern Illinois University at (815) 753-8588. I understand that my consent to participate in this project does not constitute a waiver of any legal rights or redress I might have as a result of my participation.

Benefits to society: I understand that my participation in this study is adding to society's understanding of describing potentially upsetting situations to others. By participating in this study, I am helping researchers better understand these situations.

Risks: I have been informed that potential risks and/or discomforts I could experience during this study include short-term emotional discomfort and distress. Any distress associated with the film clip in the past has been short-term. Discussing the film clip with a friend may create some short-term discomfort for some individuals. Additionally, some of the questionnaires may ask me to recall whether I have experienced certain traumatic or upsetting events, or difficult psychological experiences. Remembering these experiences may be upsetting or distressing to me. Additionally, answering questions about some of these events may be uncomfortable. I understand that if I feel distressed, I can stop at any point in the entire study. I am also free to skip any questions that I do not wish to answer. Withdrawal from the present study will not affect my relationship with the researchers, my instructors, or NIU in any way. I will not be penalized for withdrawing from the study.

I understand that any information gathered during this research study is intended to be used for research purposes only and will be kept confidential to the extent permitted by law. Even though this research project asks a few questions about history of upsetting experiences, including harassment and assault, I understand that the researcher does not have authority to address, or a duty to report, sexual violence, misconduct or harassment. If I wish to report an instance of sexual violence, misconduct or harassment, I understand that I need to contact the University's Title IX Coordinator, Karen L. Baker, at [815-753-6017](tel:815-753-6017) or kbaker@niu.edu, or visit the University's Title IX website at <http://www.hr.niu.edu/ServiceAreas/DiversityResources/TitleIX/index.cfm> for other reporting options.

I have read and understood the information on this consent form and I agree to participate in this research project.

Signature

Printed Name

Date

I give my consent for my participation in this research to be video and audio-recorded.

Signature

Printed Name

Date

Consent Form: "Friend"

INFORMED CONSENT

I agree to participate in the research project titled "Film Clips and Friends" being conducted by Christy Allen, B.A., and Michelle Lilly, Ph.D., at Northern Illinois University (NIU). This study has been reviewed and approved by the Northern Illinois University Institutional Review Board.

Purpose: To better understand the experiences involved in watching a potentially upsetting film clip and describing the experience of watching a film clip to a friend.

Tasks involved: I understand that if I agree to participate in this study, within the role of the "friend" in the study, I will be asked to do the following: 1) briefly discuss with my friend a film clip that they have watched, and 2) complete questionnaires regarding myself, my social relationships, and my history.

Length: I understand that my participation is limited to one session and will take approximately forty-five to sixty minutes.

Recording: I understand that my conversation with my friend about the film clip will be video and audio-recorded. This is the only part of the study that will be recorded. There is no right or wrong behavior; I am only asked to act naturally.

Confidentiality: In order to maintain confidentiality, the video recordings will be stored on a password-protected computer in a locked room. I will be assigned a numerical ID that will be associated with my data. Identifying information, such as my name, will not be kept with the data. Furthermore, I understand that any information I provide will be stored in a locked room accessible only to laboratory personnel and on a password-protected computer. Also, I understand that the data I provide will never be reported individually; all information will be presented in groups. These steps are all taken to protect my identity and confidential in the research process.

Rights: I am aware that my participation is voluntary and may be withdrawn at any time without penalty or prejudice, and that if I have any additional questions concerning this study, I may contact Dr. Michelle Lilly at (815) 753-4602. I understand that if I want more information regarding my rights as a research participant, I may contact the Office of Research Compliance at Northern Illinois University at (815) 753-8588. I understand that my consent to participate in this project does not constitute a waiver of any legal rights or redress I might have as a result of my participation.

Benefits to society: I understand that my participation in this study is adding to society's understanding of describing potentially upsetting situations to others. By participating in this study, I am helping researchers better understand these situations.

Risks: I have been informed that potential risks and/or discomforts I could experience during this study include short-term emotional discomfort and distress. Discussing the film clip with a friend may create some short-term discomfort for some individuals. Additionally, some of the questionnaires may ask me to recall whether I have experienced certain traumatic or upsetting events, or difficult psychological experiences. Remembering these experiences may be upsetting or distressing to me. Additionally, answering questions about some of these events may be uncomfortable. I understand that if I feel distressed, I can stop at any point in the entire study. I am also free to skip any questions that I do not wish to answer. Withdrawal from the present study will not affect my relationship with the researchers or the institution and employees of NIU in any way. I will not be penalized for withdrawing from the study.

I understand that any information gathered during this research study is intended to be used for research purposes only and will be kept confidential to the extent permitted by law. Even though this research project asks a few questions about history of upsetting experiences, including harassment and assault, I understand that the researcher does not have authority to address, or a duty to report, sexual violence, misconduct or harassment. If I am an NIU student and wish to report an instance of sexual violence, misconduct or harassment, I understand that I need to contact the University's Title IX Coordinator, Karen L. Baker, at [815-753-6017](tel:815-753-6017) or kbaker@niu.edu, or visit the University's Title IX website at <http://www.hr.niu.edu/ServiceAreas/DiversityResources/TitleIX/index.cfm> for other reporting options.

I have read and understood the information on this consent form and I agree to participate in this research project.

Signature	Printed Name	Date
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I give my consent for my participation in this research to be video and audio-recorded.

Signature	Printed Name	Date
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APPENDIX F

MEASURES

Demographics Questionnaire

1. Do you identify as:
 - a. Female
 - b. Male
 - c. I identify as something else: _____
2. How old are you?
 - a. _____
3. Do you identify as:
 - a. Asian
 - b. Bi- or multiracial
 - c. Black or African-American
 - d. Caucasian or European-American
 - e. Native American
 - f. I identify as something else (specify): _____
4. Do you identify as:
 - a. Hispanic or Latino/a
 - b. Not Hispanic or Latino/a
5. What is your sexual orientation?
 - a. Bisexual
 - b. Gay or lesbian
 - c. Heterosexual
 - d. I identify as something else: _____
6. What is your current relationship status?
 - a. Single
 - b. Dating but not living with partner
 - c. Living with Partner
 - d. Married
 - e. Separated/Divorced
7. What is the highest level of education you have completed?
 - a. Less than high school
 - b. High school diploma or GED
 - c. Some college
 - d. College degree
 - e. Postgraduate degree (MA, JD, PhD, etc.)

Relational Health Index- Peer

How long have you been friends with the person in the study with you today?
_____ years _____ months

Instructions: For each statement, please indicate the number that best applies to your relationship with your friend.

1- Never, 2- Seldom, 3- Sometimes, 4- Often, 5- Always

1. Even when I have difficult things to share, I can be honest and real with my friend.
2. After a conversation with my friend, I feel uplifted.
3. The more time I spend with my friend, the closer I feel to him/her.
4. I feel understood by my friend.
5. It is important to us to make our friendship grow.
6. I can talk to my friend about our disagreements without feeling judged.
7. My friendship inspires me to seek other friendships like this one.
8. I am comfortable sharing my deepest feelings and thoughts with my friend.
9. I have a greater sense of self-worth through my relationship with my friend.
10. I feel positively changed by my friend.
11. I can tell my friend when he/she has hurt my feelings.
12. My friendship causes me to grow in important ways.

Multidimensional Scale of Perceived Social Support

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

Circle the "1" if you Very Strongly Disagree

Circle the "2" if you Strongly Disagree

Circle the "3" if you Mildly Disagree

Circle the "4" if you are Neutral

Circle the "5" if you Mildly Agree

Circle the "6" if you Strongly Agree

Circle the "7" if you Very Strongly Agree

1. There is a special person who is around when I am in need.
2. There is a special person with whom I can share joys and sorrows.
3. My family really tries to help me.
4. I get the emotional help & support I need from my family.
5. I have a special person who is a real source of comfort to me.
6. My friends really try to help me.
7. I can count on my friends when things go wrong.
8. I can talk about my problems with my family.
9. I have friends with whom I can share my joys and sorrows.
10. There is a special person in my life who cares about my feelings.
11. My family is willing to help me make decisions.
12. I can talk about my problems with my friends.

LEC-5 and PCL-5**LEC-5/PCL-5: Part One****Directions:**

Listed below are a number of difficult or stressful things that sometimes happen to people. For each event check one or more of the boxes to the right to indicate that: (a) it *happened to you* personally; (b) you *witnessed it* happen to someone else; (c) you *learned about it* happening to a close family member or close friend; (d) you were exposed to it as *part of your job* (for example, paramedic, police, military, or other first responder); or (e) you're *not sure* if it fits.

Be sure to consider your *entire life* (growing up as well as adulthood) as you go through the list of events.

Event	Happened to me	Witnessed it	Learned about it	Part of my job	Not sure
1 Natural disaster (for example, flood, hurricane, tornado, earthquake)					
2 Fire or explosion					
3 Transportation accident (for example, car accident, boat accident, train wreck, plane crash)					
4 Serious accident at work, home, or during recreational activity					
5 Exposure to toxic substance (for example, dangerous chemicals, radiation)					
6 Physical assault (for example, being attacked, hit, slapped, kicked, beaten up)					
7 Assault with a weapon (for example, being shot, stabbed, threatened with a knife, gun, bomb)					
8 Sexual assault (rape, attempted rape, made to perform any type of sexual act through force or threat of harm)					
9 Other unwanted or uncomfortable sexual experience					
10 Combat or exposure to a war-zone (in the military or as a civilian)					
11 Captivity (for example, being kidnapped, abducted, held hostage, prisoner of war)					
12 Life-threatening illness or injury					
13 Severe human suffering					
14 Sudden violent death (for example, homicide, suicide)					

15	Sudden accidental death					
16	Serious injury, harm, or death you caused to someone else					
17	Any other very stressful event or experience					

PART TWO

If you have experienced *more than one* of the events in **PART ONE**, think about the event you consider the *worst event*, which for this questionnaire means the event that currently bothers you the most. If you have experienced only one of the events in **PART ONE**, use that one as the worst event.

LEC-5/PCL-5: Part Three

Directions:

Below is a list of problems that people sometimes have in response to a very stressful experience. Keeping your worst event in mind (**Part Two**), please read each problem carefully and then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

<i>In the past month, how much were you bothered by:</i>		Not at all	A little bit	Moderately	Quite a bit	Extremely
1	Repeated, disturbing, and unwanted memories of the stressful experience?	0	1	2	3	4
2	Repeated, disturbing, and unwanted memories of the stressful experience?	0	1	2	3	4
3	Suddenly feeling or acting as if the stressful experience were actually happening again (<i>as if you were actually back there reliving it</i>)?	0	1	2	3	4
4	Feeling very upset when something reminded you of the stressful experience?	0	1	2	3	4
5	Having strong physical reactions when something reminded you of the stressful experience (<i>for example, heart pounding, trouble breathing, sweating</i>)?	0	1	2	3	4
6	Avoiding memories, thoughts, or feelings related to the stressful experience?	0	1	2	3	4
7	Avoiding external reminders of the stressful experience (<i>for example, people, places, conversations, activities, objects, or situations</i>)?	0	1	2	3	4
8	Trouble remembering important parts of the stressful experience?	0	1	2	3	4
9	Having strong negative beliefs about yourself, other people, or the world (<i>for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous</i>)?	0	1	2	3	4
10	Blaming yourself or someone else for the stressful experience or what happened after it?	0	1	2	3	4
11	Having strong negative feelings such as fear, horror, anger, guilt, or shame?	0	1	2	3	4
12	Loss of interest in activities that you used to enjoy?	0	1	2	3	4
13	Feeling distant or cut off from other people?	0	1	2	3	4
14	Trouble experiencing positive feelings (<i>for example, being unable to feel happiness or have loving feelings for people close to you</i>)?	0	1	2	3	4
15	Irritable behavior, angry outbursts, or acting aggressively?	0	1	2	3	4
16	Taking too many risks or doing things that could cause you harm?	0	1	2	3	4
17	Being "superalert" or watchful or on guard?	0	1	2	3	4

18	Feeling jumpy or easily startled?	0	1	2	3	4
19	Having difficulty concentrating?	0	1	2	3	4
20	Trouble falling or staying asleep?	0	1	2	3	4

PANAS

This scale consists of a number of words that describe different feelings and emotions. Read each item and then select the number from the scale below. **Indicate to what extent you feel this way right now, that is, at the present moment.**

1	2	3	4	5
Very Slightly Or Not at All	A Little	Moderately	Quite a Bit	Extremely

1. Interested
2. Distressed
3. Excited
4. Upset
5. Strong
6. Guilty
7. Scared
8. Hostile
9. Enthusiastic
10. Proud
11. Irritable
12. Alert
13. Ashamed
14. Inspired
15. Nervous
16. Determined
17. Attentive
18. Jittery
19. Active
20. Afraid

Modified PTCI

We are interested in the kind of thoughts some people have after experiencing or witnessing a stressful event. These are a number of statements that may or may not be representative of your thinking. **Please think about the film clips and your experience watching them as you answer the questions.**

- 3 *Totally disagree*
- 2 *Disagree very much*
- 1 *Disagree slightly*
- 0 *Neutral*
- 1 *Agree slightly*
- 2 *Agree very much*
- 3 *Totally agree*

1. I can't trust that I will do the right thing.
2. I am a weak person.
3. I will not be able to control my anger and will do something terrible.
4. I can't deal with even the slightest upset.
5. People can't be trusted.
6. I have to be on guard all the time.
7. I feel dead inside.
8. You can never know who will harm you.
9. I have to be especially careful because you never know what can happen next.
10. I am inadequate.
11. If I think about the video clips, I will not be able to handle it.
12. My reactions since watching the video clips mean that I am going crazy.
13. The world is a dangerous place.
14. I feel like an object, not like a person.
15. I can't rely on other people.
16. I feel isolated and set apart from others.
17. I have no future.
18. I can't stop bad things from happening to me.
19. People are not what they seem.
20. There is something wrong with me as a person.
21. My reactions since watching the video clips show that I am a lousy copper.
22. I can't rely on myself.

Modified CAVEAT

Instructions: Mark the choice that best describes your experiences and reactions *during the film clips*.

1. I paid close **attention** to the film.
 - a. 0: Not at all
 - b. 1: Barely
 - c. 2: Somewhat
 - d. 3: Mostly
 - e. 4: Completely
2. Estimate the **number** of times you **looked away** from the screen. If you never looked away, write *zero* (0).
3. Estimate the **number** of times you **closed your eyes** for an extended period of time. If you never closed your eyes, write *zero* (0). **Note:** Don't include normal eye blinks.
4. Estimate the **number** of times you **covered your eyes** with your clothes, hands, or other body parts. If you never covered your eyes, write *zero* (0).
5. Estimate the **total percentage** of time (range: 0% to 100%) that you were **looking directly** at the screen.

T2 Follow-up Questionnaire

1. Are you a vegan or vegetarian?
 - a. Yes
 - b. No
2. Did you grow up on a farm or ever live on a farm?
 - a. Yes
 - b. No
3. Are you a member of PETA or any animal rights organization?
 - a. Yes
 - b. No
4. Are you a member of any social justice organizations?
 - a. Yes
 - b. No
5. Is the friend with you today someone you would choose to talk to if you experienced something very stressful or traumatic?
 - a. Yes
 - b. No

Now thinking about the conversation you just had with your friend:

6. On a scale of 1 (not at all true) to 10 (totally true), I focused on my thoughts and feelings in the conversation with my friend/focused on a factual description of the film clips with my friend.
 - a. ____ (1-10)
7. On a scale of 1 (not at all) to 10 (totally), how much did you share your thoughts and feelings with your friend during today's session?
 - a. ____ (1-10)
8. From this conversation, what can you remember your friend telling you?

IES-R

Below is a list of difficulties people sometimes have after stressful events. Please read each item, and then indicate how distressing each difficulty has been for you **DURING THE PAST TWO DAYS** with respect to the film clips you watched in the first research session. How much were you distressed or bothered by these difficulties?

0 = Not at all; 1 = A little bit; 2 = Moderately; 3 = Quite a bit; 4 = Extremely

- | | |
|---|-----------|
| 1. Any reminder brought back feelings about the film clips. | 0 1 2 3 4 |
| 2. I had trouble staying asleep. | 0 1 2 3 4 |
| 3. Other things kept making me think about the film clips. | 0 1 2 3 4 |
| 4. I felt irritable and angry. | 0 1 2 3 4 |
| 5. I avoided letting myself get upset when I thought about the film clips or was reminded of them. | 0 1 2 3 4 |
| 6. I thought about the film clips when I didn't mean to. | 0 1 2 3 4 |
| 7. I felt as if watching the film clips hadn't happened or wasn't real. | 0 1 2 3 4 |
| 8. I stayed away from reminder of the film clips. | 0 1 2 3 4 |
| 9. Pictures about the film clips popped into my mind. | 0 1 2 3 4 |
| 10. I was jumpy and easily startled. | 0 1 2 3 4 |
| 11. I tried not to think about the film clips. | 0 1 2 3 4 |
| 12. I was aware that I still had a lot of feelings about the film clips, but I didn't deal with them. | 0 1 2 3 4 |
| 13. My feelings about the film clips were kind of numb. | 0 1 2 3 4 |
| 14. I found myself acting or feeling like I was back watching the film clips. | 0 1 2 3 4 |
| 15. I had trouble falling asleep. | 0 1 2 3 4 |
| 16. I had waves of strong feelings about the film clips. | 0 1 2 3 4 |
| 17. I tried to remove the film clips from my memory. | 0 1 2 3 4 |
| 18. I had trouble concentrating. | 0 1 2 3 4 |
| 19. Reminders of the film clips caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart. | 0 1 2 3 4 |
| 20. I had dreams about the film clips. | 0 1 2 3 4 |
| 21. I felt watchful and on-guard. | 0 1 2 3 4 |
| 22. I tried not to talk about the film clips. | 0 1 2 3 4 |

APPENDIX G
DEBRIEFING DOCUMENTS

Debriefing Form for Target Individual—Partial Debriefing Session 1

DEBRIEFING FORM (SESSION 1)

Thank you for participating in the first session of this two-part research study. This study examines your ability to watch video clips and describe the experience to a friend.

The film clip, conversation, or some of the questionnaires may have been difficult to answer or made you think about things that made you uncomfortable or were potentially distressing. Below this message, please note the list of free or low-cost counseling resources in the DeKalb area as well as two national hotlines. We encourage you to look into these resources if you would like to talk to someone about how you may be feeling.

If you would like to speak with the researchers regarding this study or for an additional copy of these resources, please feel free to contact Dr. Michelle Lilly at (815) 753-4602 or at mlilly1@niu.edu, or Christy Allen at callen@niu.edu.

If you have any complaints, concerns, or questions about this study, please feel free to contact the Office of Research Compliance at Northern Illinois University at (815) 753-8588.

DeKalb County Resources

Campus Services

Counseling & Consultation Services, NIU (STUDENTS ONLY) (formerly The Counseling and Student Development Center - CSDC)

Phone: 815/753-1206

Address: Campus Life Building-200

Fees: None for counseling. Modest testing fees.

Hours: 8:00 a.m. – 4:30 p.m. Monday-Friday

Open whenever NIU is open, including breaks.

After Hours: Assistance after hours available by calling—815/753-1212

Description of Services: This service provides students with short-term, individual and group counseling for a broad range of personal concerns. Career counseling services include interest assessment, workshops, and use of computerized career counseling programs. Educational counseling services include assistance with test anxiety and study skills. Assessments of drug and alcohol abuse are also provided. First appointment scheduled with 3-7 days. (Handicapped Accessible).

Community Counseling Training Center, NIU (formerly The Counseling Laboratory)

Phone: 815/753-9312
 Address: 416 Graham Hall
 Fees: None for students, faculty, or staff.
 Hours: Call for available counseling hours.

Description of Services: A wide range of services are offered by the counselors including both personal and vocational counseling. In general, the approach used is one that promotes growth and focuses on increasing emotional well-being and self-awareness. All counselors are doctoral or masters level students who are being supervised by members of the counseling faculty. First appointments scheduled within 3-5 days.

The Couple and Family Therapy Clinic of NIU, NIU (formerly The Family Therapy Clinic)

Phone: 815-753-1684
 Address: Wirtz Hall 146
 Fees: The cost of services are determined by a sliding fee scale. No client is turned away due to the inability to pay. This gives clients of all income levels access to our high-quality care.
 Hours: Monday, Tuesday – 12 noon – 9:00 pm; Wednesday, Thursday - 9:00 am - 9:00pm;
 Friday - 9:00 am - 5:00 pm
 Website: <http://www.chhs.niu.edu/familytherapyclinic/contact/index.shtml>

Description of Services: The Couple and Family Therapy Clinic at NIU is a training and research facility that is an integral component of the specialization in Marriage and Family Therapy Program (SMFT). They provide clinical services to individuals, couples, and families with a unique perspective of addressing the issues in a larger systemic context. They follow rigorous training standards as set forth by our accrediting organization, being accredited by the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE).

Psychological Services Center, NIU

Phone: 815/753-0591
 Address: Normal Rd and Lincoln Hwy.
 Fees: No fee for therapy for students; fee for assessments for students. Faculty, staff, and community members charged on a sliding scale.
 Hours: Monday – 11:00 a.m. – 7:00 p.m.
 Tuesday – 12:00 noon – 8:00 p.m.
 Wednesday-Friday-9:00 a.m. to 5:00 p.m. Open whenever NIU is open, including breaks.

Description of Services: Individual, couples, family, and group psychotherapy, Intellectual, personality, and academic assessments. Clients are generally seen by advanced level graduate student staff under faculty supervision. Services tailored to meet a client's specific needs. First appointment scheduled with 7 days. (Handicapped accessible.)

Community Resources

KishHealth System Behavioral Health Services (formerly Ben Gordon Center)

Phone: 815/756-4875
 Address: 12 Health Services Dr., DeKalb, IL 60115
 Fees: Sliding fee scales based on income. Insurance accepted.
 Hours: Monday-Thursday- 8:00 a.m. – 8:30 p.m.
 Friday-8:00 a.m.-5:00 p.m.
 After Hours: 815/758-6655 Crisis Line

Description of Services: Comprehensive counseling services to all residents of DeKalb County. Services to all persons affected by mental health problems, substance abuse, and family/child welfare concerns. 24-hour sexual assault/abuse services can be accessed through the Crisis Line. First appointment scheduled within 30 days. (Handicapped accessible and on Campus Bus Route).

Braden Counseling Center

Phone: 815/787-9000
 Address: 2580 DeKalb Ave., Suite C., Sycamore, IL 60178
 951 S. 7th St., Suite G., Rochelle, IL 60168
 Fees: Sliding fee scales based on income. Insurance accepted.

Description of Services: Free initial consultation. Specializes in counseling individuals, couples and families in various stages of life. Has flexible scheduling with Sycamore and Rochelle locations. Also offers a variety of evaluations, including same-day DUI evaluations, and legal and forensic work for attorneys.

Village Counseling

Phone: 815/756-9907
 Address: 1211 Sycamore Rd., DeKalb, IL 60115
 Fees: Sliding fee scales based on income. Insurance accepted.
 Hours: Monday-9:00 a.m.-10:00 p.m.
 Wednesday/Thursday-9:00 a.m.-9:00 p.m.
 Friday-10:00 a.m.-10:00 p.m.

Description of Services: Provides relationship-centered counseling, including life counseling for individuals, couples, families, adolescents, and children, as well as marriage and family counseling.

Family Service Agency, Center for Counseling

Phone: 815/758-8616
 Address: 14 Health Services Dr.-DeKalb
 Fees: \$75.00 per visit. Insurance accepted, including NIU Student Insurance. Payment plans and scholarship funds available.

Hours: Monday-Wednesday-9:00 a.m. – 8:00 p.m.
Thursday – Friday – 8:00 a.m. – 4:00 p.m. Additional hours available by appointment.

Description of Services: Individual, couple, group counseling for children, adults, senior citizens, and families. First appointment scheduled within 1-7 days. (Handicapped accessible and on Campus Bus Route).

Living Rite, The Center for Behavioral Medicine.

Phone: 815-758-8400
Address: 1958 Aberdeen Court, Suite 2, Sycamore, IL 60178
Fees: Based on insurance. Self-pay options are available.

Description of Services: Individual and Group Therapy. Therapy to deal with chronic pain.

Safe Passage, Inc.

Phone: 815-756-7930
Hotline/Crisis: 815-756-5228
Address: P.O. Box 621, DeKalb, IL 60115

Description of Services: A wide variety of services are offered to victims and perpetrators of domestic and sexual violence including crisis intervention and medical advocacy for victims of domestic and sexual violence, short- and long-term housing for victims and their children, counseling, legal advocacy, children's services, community education, a batterer's intervention program, and a Latina outreach program.

Debriefing Form for Support Partner—Partial Debriefing Session 1

DEBRIEFING FORM (SESSION 1)

Thank you for participating in this study. This study examines the ability to watch video clips and describe the experience to a friend. By serving as the friend in this study, you played a valuable role. Please remember that after your friend completes the second part of this study in approximately three days (or if they decline to participate in the second part), you will receive a more detailed debriefing form via email. We encourage you to contact the researchers with any questions or comments you may have before or after reading the debriefing form.

The conversation about the film clip or some of the questionnaires may have been difficult to answer or made you think about things that made you uncomfortable or were potentially distressing. Below this message, please note the list of free or low-cost counseling resources in the DeKalb area as well as two national hotlines. We encourage you to look into these resources if you would like to talk to someone about how you may be feeling.

If you would like to speak with the researchers regarding this study or for an additional copy of these resources, please feel free to contact Dr. Michelle Lilly at (815) 753-4602 or at mlilly1@niu.edu, or Christy Allen at callen@niu.edu.

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DeKalb County Resources

Campus Services

Counseling & Consultation Services, NIU (STUDENTS ONLY) (formerly The Counseling and Student Development Center - CSDC)

Phone: 815/753-1206

Address: Campus Life Building-200

Fees: None for counseling. Modest testing fees.

Hours: 8:00 a.m. – 4:30 p.m. Monday-Friday

Open whenever NIU is open, including breaks.

After Hours: Assistance after hours available by calling—815/753-1212

Description of Services: This service provides students with short-term, individual and group counseling for a broad range of personal concerns. Career counseling services include interest

assessment, workshops, and use of computerized career counseling programs. Educational counseling services include assistance with test anxiety and study skills. Assessments of drug and alcohol abuse are also provided. First appointment scheduled with 3-7 days. (Handicapped Accessible).

Community Counseling Training Center, NIU (formerly The Counseling Laboratory)

Phone: 815/753-9312
 Address: 416 Graham Hall
 Fees: None for students, faculty, or staff.
 Hours: Call for available counseling hours.

Description of Services: A wide range of services are offered by the counselors including both personal and vocational counseling. In general, the approach used is one that promotes growth and focuses on increasing emotional well-being and self-awareness. All counselors are doctoral or masters level students who are being supervised by members of the counseling faculty. First appointments scheduled within 3-5 days.

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 Friday - 9:00 am - 5:00 pm
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 Wednesday-Friday-9:00 a.m. to 5:00 p.m. Open whenever NIU is open, including breaks.

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 Hours: Monday-Thursday- 8:00 a.m. – 8:30 p.m.
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 After Hours: 815/758-6655 Crisis Line

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 Address: 2580 DeKalb Ave., Suite C., Sycamore, IL 60178
 951 S. 7th St., Suite G., Rochelle, IL 60168
 Fees: Sliding fee scales based on income. Insurance accepted.

Description of Services: Free initial consultation. Specializes in counseling individuals, couples and families in various stages of life. Has flexible scheduling with Sycamore and Rochelle locations. Also offers a variety of evaluations, including same-day DUI evaluations, and legal and forensic work for attorneys.

Village Counseling

Phone: 815/756-9907
 Address: 1211 Sycamore Rd., DeKalb, IL 60115
 Fees: Sliding fee scales based on income. Insurance accepted.
 Hours: Monday-9:00 a.m.-10:00 p.m.
 Wednesday/Thursday-9:00 a.m.-9:00 p.m.
 Friday-10:00 a.m.-10:00 p.m.

Description of Services: Provides relationship-centered counseling, including life counseling for individuals, couples, families, adolescents, and children, as well as marriage and family counseling.

Family Service Agency, Center for Counseling

Phone: 815/758-8616

Address: 14 Health Services Dr.-DeKalb

Fees: \$75.00 per visit. Insurance accepted, including NIU Student Insurance. Payment plans and scholarship funds available.

Hours: Monday-Wednesday-9:00 a.m. – 8:00 p.m.

Thursday – Friday – 8:00 a.m. – 4:00 p.m. Additional hours available by appointment.

Description of Services: Individual, couple, group counseling for children, adults, senior citizens, and families. First appointment scheduled within 1-7 days. (Handicapped accessible and on Campus Bus Route).

Living Rite, The Center for Behavioral Medicine.

Phone: 815-758-8400

Address: 1958 Aberdeen Court, Suite 2, Sycamore, IL 60178

Fees: Based on insurance. Self-pay options are available.

Description of Services: Individual and Group Therapy. Therapy to deal with chronic pain.

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Phone: 815-756-7930

Hotline/Crisis: 815-756-5228

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Description of Services: A wide variety of services are offered to victims and perpetrators of domestic and sexual violence including crisis intervention and medical advocacy for victims of domestic and sexual violence, short- and long-term housing for victims and their children, counseling, legal advocacy, children's services, community education, a batterer's intervention program, and a Latina outreach program.

Debriefing Form for Both Participations—Full Debriefing

DEBRIEFING FORM (SESSION 2)

Thank you for participating in this two-part research study. While you were asked to use watch film clips and exhibit your ability to describe the experience to a friend, there were additional research hypotheses that were not initially shared with you in order to prevent bias in the results. The research results will be examined to see how statements and verbal support given during the friend conversation is associated with how often the film viewer thought about the film in the three days before Session 2, how distressing they reported the film being, and their memories of the film.

Social support is considered to be one of the major factors related to how traumatic, stressful, or negative experiences affect human beings. One theory of social support and stressful events states that having conversations with support partners like friends can allow us to process the event. Through having these conversations, we can reduce our negative thinking about the event (such as blaming ourselves) and therefore reduce other negative outcomes. This study examined this hypothesis.

We ask that you do not share this purpose of the study with any other Psychology 102 student, as they may participate in the study and this will bias the results. These results could have implications for how to speak with individuals who have experienced trauma and how to support them.

Please feel free to get in contact with the researchers with any questions about this or other aspects of the study. See contact information below.

As was mentioned after the first session, the film clip, conversation, or some of the questionnaires may have been difficult to answer or made you think about things that made you uncomfortable or were potentially distressing. Below this message, please note the list of free or low-cost counseling resources in the DeKalb area as well as two national hotlines. We encourage you to look into these resources if you would like to talk to someone about how you may be feeling.

If you would like to speak with the researchers regarding this study or for an additional copy of these resources, please feel free to contact Dr. Michelle Lilly at (815) 753-4602 or at mlilly1@niu.edu, or Christy Allen at callen@niu.edu.

If you have any complaints, concerns, or questions about this study, please feel free to contact the Office of Research Compliance at Northern Illinois University at (815) 753-8588.

DeKalb County Resources

Campus Services

Counseling & Consultation Services, NIU (STUDENTS ONLY) (formerly The Counseling and Student Development Center - CSDC)

Phone: 815/753-1206

Address: Campus Life Building-200

Fees: None for counseling. Modest testing fees.

Hours: 8:00 a.m. – 4:30 p.m. Monday-Friday

Open whenever NIU is open, including breaks.

After Hours: Assistance after hours available by calling—815/753-1212

Description of Services: This service provides students with short-term, individual and group counseling for a broad range of personal concerns. Career counseling services include interest assessment, workshops, and use of computerized career counseling programs. Educational counseling services include assistance with test anxiety and study skills. Assessments of drug and alcohol abuse are also provided. First appointment scheduled with 3-7 days. (Handicapped Accessible).

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Phone: 815/753-9312

Address: 416 Graham Hall

Fees: None for students, faculty, or staff.

Hours: Call for available counseling hours.

Description of Services: A wide range of services are offered by the counselors including both personal and vocational counseling. In general, the approach used is one that promotes growth and focuses on increasing emotional well-being and self-awareness. All counselors are doctoral or masters level students who are being supervised by members of the counseling faculty. First appointments scheduled within 3-5 days.

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Friday - 9:00 am - 5:00 pm

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Psychological Services Center, NIU

Phone: 815/753-0591

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Community Resources

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Phone: 815/756-4875

Address: 12 Health Services Dr., DeKalb, IL 60115

Fees: Sliding fee scales based on income. Insurance accepted.

Hours: Monday-Thursday- 8:00 a.m. – 8:30 p.m.
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Phone: 815/787-9000
 Address: 2580 DeKalb Ave., Suite C., Sycamore, IL 60178
 951 S. 7th St., Suite G., Rochelle, IL 60168
 Fees: Sliding fee scales based on income. Insurance accepted.

Description of Services: Free initial consultation. Specializes in counseling individuals, couples and families in various stages of life. Has flexible scheduling with Sycamore and Rochelle locations. Also offers a variety of evaluations, including same-day DUI evaluations, and legal and forensic work for attorneys.

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Phone: 815/756-9907
 Address: 1211 Sycamore Rd., DeKalb, IL 60115
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Description of Services: Provides relationship-centered counseling, including life counseling for individuals, couples, families, adolescents, and children, as well as marriage and family counseling.

Family Service Agency, Center for Counseling

Phone: 815/758-8616
 Address: 14 Health Services Dr.-DeKalb
 Fees: \$75.00 per visit. Insurance accepted, including NIU Student Insurance. Payment plans and scholarship funds available.
 Hours: Monday-Wednesday-9:00 a.m. – 8:00 p.m.
 Thursday – Friday – 8:00 a.m. – 4:00 p.m. Additional hours available by appointment.

Description of Services: Individual, couple, group counseling for children, adults, senior citizens, and families. First appointment scheduled within 1-7 days. (Handicapped accessible and on Campus Bus Route).

Living Rite, The Center for Behavioral Medicine.

Phone: 815-758-8400
 Address: 1958 Aberdeen Court, Suite 2, Sycamore, IL 60178
 Fees: Based on insurance. Self-pay options are available.

Description of Services: Individual and Group Therapy. Therapy to deal with chronic pain.

Safe Passage, Inc.

Phone: 815-756-7930
Hotline/Crisis: 815-756-5228
Address: P.O. Box 621, DeKalb, IL 60115

Description of Services: A wide variety of services are offered to victims and perpetrators of domestic and sexual violence including crisis intervention and medical advocacy for victims of domestic and sexual violence, short- and long-term housing for victims and their children, counseling, legal advocacy, children's services, community education, a batterer's intervention program, and a Latina outreach program.

APPENDIX H

MEANS AND STANDARD DEVIATIONS OF KEY STUDY VARIABLES

Means and Standard Deviations of Key Study Variables

Variable	Possible Scores		Scores in Study		<i>M</i>	<i>SD</i>	<i>n</i>
	Low	High	Low	High			
RHI-P	12	60	34	60	51.89	6.68	73
MSPSS	1	7	3.83	7	5.87	.87	73
PCL-5	0	80	0	64	17.05	14.62	66
Attention	1	5	1	5	4.41	.78	73
T1 PANAS	10	50	14	48	32.25	7.62	73
T2 PANAS	10	50	10	40	19.85	8.39	73
Change PANAS	-40	40	-28	3	-12.38	7.19	73
T1 PTCI	22	154	22	116	68.89	15.67	73
T2 PTCI	22	154	22	95	61.16	15.40	73
Change PTCI	-132	132	-29	9	-7.44	8.49	73
% Negative Statements	0	100	0	50.94	10.66	13.01	73
% Positive Statements	0	100	0	51.43	16.96	11.29	73
% Neutral Statements	0	100	9.43	100	65.06	17.44	73
% Off-Task Statements	0	100	0	50.94	7.32	10.88	73
Total Statements (Amount)	0+	0+	12	68	37.08	12.93	73
Intrusions (Amount)	0+	0+	0	26	7.07	6.48	73
Intrusions (Severity)	0	10	0	10	3.36	2.37	73
IES-R (Total)	0	12	0	5.29	1.95	1.37	73
IES-R (Avoidance)	0	4	0	2.38	.82	.61	73

Note. RHI-P = Relational Health Index- For Peers, MSPSS = Multidimensional Scale of Perceived Social Support, PCL-5 = Posttraumatic Stress Disorder Checklist for DSM-5, T1 = Timepoint 1 in study (pre-interaction); T2 = Timepoint 2 in study (post-interaction); PANAS = Positive and Negative Affect Scale (Negative Scale only), PTCI = Posttraumatic Cognitions Inventory, % Negative Statements = Percentage of negative statements made by friend, % Positive Statements = Percentage of positive statements made by friend, % Neutral Statements = Percentage of neutral statements made by friend, % of Off-task Statements = Percentage of off-task statements made by friend, Attention = attention paid to film clips item, IES-R = Impact of Events Scale- Revised

APPENDIX I

MEANS, STANDARD DEVIATIONS, AND MINIMUM AND MAXIMUM
REPORTED SCORES OF TOTAL SAMPLE AND OF TWO
CONDITION MANIPULATION CHECK QUESTIONS

Means, Standard Deviations, and Minimum and Maximum Reported Scores
of Total Sample and of Two Conditions on Manipulation Check Questions

Manipulation Check Question	Overall Sample (<i>n</i> = 73)	Thoughts/Feelings Condition (<i>n</i> = 32)	Factual Condition (<i>n</i> = 41)
On a scale of 1 (not at all true) to 10 (totally true), I focused on my thoughts and feelings in the conversation with my friend.	7.59 (2.12) 1 - 10	7.94 (1.83) 4 - 10	7.31 (2.31) 1 - 10
On a scale of 1 (not at all true) to 10 (totally true), I focused on a factual description of the film clips in the conversation with my friend.	8.36 (1.86) 3 - 10	8.22 (2.09) 3 - 10	8.46 (1.67) 4 - 10

APPENDIX J

CORRELATION MATRIX FOR KEY STUDY VARIABLES

Correlation Matrix for Key Study Variables

Measure	2	3	4	5	6	7	8	9	10	11	12	13
1. % Negative	-.43**	-.01	-.12	-.12	.16	.22	.05	-.01	-.06	-.15	-.11	.15
2. % Positive	-	.11	.15	.06	-.03	.10	.13	.04	.03	-.03	.06	-.14
3. T1 PANAS		-	.60**	-.36**	.07	-.04	-.19	.12	.23	-.03	-.11	.01
4. T2 PANAS			-	.53**	-.06	.02	.14	.21	.17	-.08	-.09	-.10
5. Change PANAS				-	-.14	.06	.36**	.13	-.04	-.07	.01	-.11
6. T1 PTCI					-	.84**	-.24*	-.10	.21	-.33**	-.11	.46**
7. T2 PTCI						-	.33*	-.07	.23	-.35**	-.11	.46**
8. Change PTCI							-	.04	.04	-.04	.02	.02
9. Intrusions								-	.45**	.04	-.08	-.06
10. IES-R Avoidance									-	.09	-.30*	.07
11. MSPSS										-	.00	-.38**
12. Attention											-	.00
13. PCL												-

Note. % Negative = percentage of negative statements made by friend, % Positive = percentage of positive statements made by friend, T1 = Timepoint 1 in study (pre-interaction); T2 = Timepoint 2 in study (post-interaction); PANAS = Positive and Negative Affect Scale (Negative Scale only), PTCI = Posttraumatic Cognitions Inventory, Intrusions = Total number of intrusions between session 1 and session 2, IES-R = Impact of Events Scale- Revised avoidance subscale, MSPSS = Multidimensional Scale of Perceived Social Support, Attention = item on attention paid to film clips, PCL-5 = Posttraumatic Stress Disorder Checklist for DSM-5

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

APPENDIX K

KEY STUDY VARIABLE MEANS AND STANDARD DEVIATIONS BY CONDITION

Key Study Variable Means and Standard Deviations by Condition

Variable	Thoughts/Feelings Condition ($n = 32$)	Factual Condition ($n = 41$)	t, p
% Negative	12.31 (12.73)	9.38 (13.32)	.95, $p = .34$
% Positive	17.44 (9.86)	16.59 (12.40)	.32, $p = .75$
T1 PANAS	33.19 (7.66)	31.51 (7.60)	.93, $p = .36$
T2 PANAS	19.22 (7.61)	20.34 (9.02)	-.56, $p = .57$
Change in PANAS	-13.97 (7.34)	-11.17 (7.00)	-1.66, $p = .10$
T1 PTCI	72.59 (13.92)	64.85 (14.67)	2.29, $p = .025$
T2 PTCI	64.91 (13.71)	57.61 (15.69)	2.08, $p = .041$
Change PTCI	-7.69 (8.53)	-7.24 (8.56)	.90, $p = .83$
Intrusions	6.31 (4.87)	7.66 (7.50)	-.93, $p = .36$
Avoidance	.72 (.52)	.88 (.66)	-1.17, $p = .25$
MSPSS	5.80 (.92)	5.92 (.84)	-.59, $p = .55$
Attention	4.66 (.60)	4.22 (.85)	2.46, $p = .016$
PCL	18.56 (17.43)	16.55 (13.14)	.52, $p = .61$

Note. % Negative = percentage of negative statements made by friend, % Positive = percentage of positive statements made by friend, T1 = Timepoint 1 in study (pre-interaction); T2 = Timepoint 2 in study (post-interaction); PANAS = Positive and Negative Affect Scale (Negative Scale only), Change in PANAS = T2 PANAS score – T1 PANAS Score, PTCI = Posttraumatic Cognitions Inventory, Change in PTCI = T2 PTCI score – T1 PTCI Score, Intrusions = Total number of intrusions between session 1 and session 2, IES-R = Impact of Events Scale- Revised avoidance subscale, MSPSS = Multidimensional Scale of Perceived Social Support, Attention = item on attention paid to film clips, PCL-5 = Posttraumatic Stress Disorder Checklist for DSM-5

APPENDIX L

PERCENTAGE OF NEGATIVE SUPPORT STATEMENTS PREDICTING
CHANGE IN NEGATIVE AFFECT FROM T1 TO T2

Percentage of Negative Support Statements Predicting Change
in Negative Affect From T1 to T2

Variable	<i>B</i>	<i>SE B</i>	β	<i>p</i>
% Negative	-.07	.07	-.12	.30
<i>R</i> ²	.02			
<i>F</i>	1.08			

Note. T1 = Timepoint 1 in study (pre-interaction); T2 = Timepoint 2 in study (post-interaction); % Negative = Percentage of negative statements made by friends.

APPENDIX M

PERCENTAGE OF NEGATIVE SUPPORT STATEMENTS PREDICTING
CHANGE IN POSTTRAUMATIC COGNITIONS FROM T1 TO T2

Percentage of Negative Support Statements Predicting Change in
Posttraumatic Cognitions From T1 to T2

Variable	<i>B</i>	<i>SE B</i>	β	<i>p</i>
% Negative	.03	.08	.05	.68
<i>R</i> ²	.002			
<i>F</i>	.18			

Note. T1 = Timepoint 1 in study (pre-interaction); T2 = Timepoint 2 in study (post-interaction); % Negative = Percentage of negative statements made by friends

APPENDIX N

PERCENTAGE OF NEGATIVE SUPPORT STATEMENTS PREDICTING
TOTAL NUMBER OF INTRUSIONS REPORTED AT T3

Percentage of Negative Support Statements Predicting Total Number
of Intrusions Reported at T3

Variable	<i>B</i>	<i>SE B</i>	β	<i>p</i>
% Negative	-.01	.06	-.01	.93
R^2	.00			
<i>F</i>	.01			

Note. T3 = Timepoint 3 in study (Session 2); % Negative = Percentage of negative statements made by friends

APPENDIX O

PERCENTAGE OF NEGATIVE SUPPORT STATEMENTS AND ATTENTION
PAID TO FILM PREDICTING AVOIDANCE SEVERITY REPORTED AT T3

Percentage of Negative Support Statements and Attention Paid
to Film Predicting Avoidance Severity Reported at T3

Variable	<i>B</i>	<i>SE B</i>	β	<i>p</i>
% Negative	-.004	.01	-.09	.44
Attention	-.24			
R^2	.10			
<i>F</i>	3.68			

Note. T3 = Timepoint 3 in study (Session 2); % Negative = Percentage of negative statements made by friends, Attention= Attention paid to film clip item

APPENDIX P

PERCENTAGE OF POSITIVE SUPPORT STATEMENTS PREDICTING
CHANGE IN NEGATIVE AFFECT FROM T1 TO T2

Percentage of Positive Support Statements Predicting Change
in Negative Affect From T1 to T2

Variable	<i>B</i>	<i>SE B</i>	β	<i>p</i>
% Positive	.04	.08	.06	.62
<i>R</i> ²	.003			
<i>F</i>	.25			

Note. T1 = Timepoint 1 in study (pre-interaction); T2 = Timepoint 2 in study (post-interaction); % Positive = Percentage of positive statements made by friends

APPENDIX Q

PERCENTAGE OF POSITIVE SUPPORT STATEMENTS PREDICTING
CHANGE IN POSTTRAUMATIC COGNITIONS FROM T1 TO T2

Percentage of Positive Support Statements Predicting Change
in Posttraumatic Cognitions From T1 to T2

Variable	<i>B</i>	<i>SE B</i>	β	<i>p</i>
% Positive	.10	.09	.13	.27
<i>R</i> ²	.02			
<i>F</i>	1.25			

Note. T1 = Timepoint 1 in study (pre-interaction); T2 = Timepoint 2 in study (post-interaction); % Positive = Percentage of positive statements made by friends

APPENDIX R

PERCENTAGE OF POSITIVE SUPPORT STATEMENTS PREDICTING
TOTAL NUMBER OF INTRUSIONS REPORTED AT T3

Percentage of Positive Support Statements Predicting Total Number
of Intrusions Reported at T3

Variable	<i>B</i>	<i>SE B</i>	β	<i>p</i>
% Positive	.02	.07	.04	.76
<i>R</i> ²	.001			
<i>F</i>	.10			

Note. T3 = Timepoint 3 in study (Session 2); % Positive = Percentage of positive statements made by friends

APPENDIX R

PERCENTAGE OF POSITIVE SUPPORT STATEMENTS AND ATTENTION PAID
TO FILM PREDICTING AVOIDANCE SEVERITY REPORTED AT T3

Percentage of Positive Support Statements and Attention Paid to Film
Predicting Avoidance Severity Reported at T3

Variable	<i>B</i>	<i>SE B</i>	β	<i>p</i>
% Positive	.002	.01	.04	.70
Attention	-.23	.09	-.30	.01
<i>R</i> ²	.09			
<i>F</i>	3.43			

Note. T3 = Timepoint 3 in study (Session 2); % Positive = Percentage of positive statements made by friends, Attention= Attention paid to film clip item

APPENDIX T

PERCENTAGE OF NEGATIVE SOCIAL SUPPORT STATEMENTS
PREDICTING TOTAL NUMBER OF INTRUSIONS REPORTED
AT T3 INDIRECTLY THROUGH POSTTRAUMATIC
COGNITIONS AT T2

Percentage of Negative Social Support Statements Predicting Total Number of Intrusions Reported at T3 Indirectly Through Posttraumatic Cognitions at T2

Predictors	<i>B</i>	<i>SE B</i>	<i>t</i>	95% CI
Outcome variable: T2 Cognitions; $R^2 = .05$				
% Negative	.25	.13	1.88	[-.02, .52]
Outcome variable: Intrusions; $R^2 = .01$				
% Negative	.003	.06	.04	[-.12, .12]
T2 Cognitions	-.03	.05	-.60	[-.13, .07]
Indirect effect	-.01	.02		[-.07, .02]

Note. * $p < .05$ ** $p < .01$, T3 = Timepoint 3 in study (Session 2); % Negative = Percentage of negative statements made by friend

APPENDIX U

PERCENTAGE OF NEGATIVE SOCIAL SUPPORT STATEMENTS AND
ATTENTION PAID TO FILM PREDICTING AVOIDANCE SEVERITY
REPORTED AT T3 INDIRECTLY THROUGH POSTTRAUMATIC
COGNITIONS AT T2

Percentage of Negative Social Support Statements and Attention Paid to Film Predicting
Avoidance Severity Reported at T3 Indirectly Through Posttraumatic Cognitions at T2

Predictors	<i>B</i>	<i>SE B</i>	<i>t</i>	95% CI
Outcome variable: T2 Cognitions; $R^2 = .05$				
% Negative	.25	.13	1.88	[-.02, .52]
Outcome variable: Avoidance; $R^2 = .14$				
% Negative	-.01	.01	-1.17	[-.02, .004]
T2 Cognitions	.01	.005	1.95	[-.0002, .02]
Attention	-.22*	.09	-2.54	[-.39, -.05]
Indirect effect	.002	.002		[-.0002, .01]

Note. * $p < .05$ ** $p < .01$, T3 = Timepoint 3 in study (Session 2); % Negative = percentage of negative statements made by friend

APPENDIX V

PERCENTAGE OF POSITIVE SOCIAL SUPPORT STATEMENTS PREDICTING
TOTAL NUMBER OF INTRUSIONS REPORTED AT T3 INDIRECTLY
THROUGH POSTTRAUMATIC COGNITIONS AT T2

Percentage of Positive Social Support Statements Predicting Total Number of Intrusions
Reported at T3 Indirectly Through Posttraumatic Cognitions at T2

Predictors	<i>B</i>	<i>SE B</i>	<i>t</i>	95% CI
Outcome variable: T2 Cognitions; $R^2 = .01$				
% Positive	.14	.16	.88	[-.18, .46]
Outcome variable: Intrusions; $R^2 = .01$				
% Positive	.03	.07	.38	[-.11, .16]
T2 Cognitions	-.03	.05	-.64	[-.13, .07]
Indirect effect	-.005	.02		[-.06, .009]

Note. * $p < .05$ ** $p < .01$, T2 = Timepoint 2 in study (post-interaction); T3 = Timepoint 3 in study (Session 3); % Positive = Percentage of positive statements

APPENDIX W

PERCENTAGE OF POSITIVE SOCIAL SUPPORT STATEMENTS AND
ATTENTION PAID TO FILM PREDICTING AVOIDANCE SEVERITY
REPORTED AT T3 INDIRECTLY THROUGH POSTTRAUMATIC
COGNITIONS AT T2

Percentage of Positive Social Support Statements and Attention Paid to Film Predicting
Avoidance Severity Reported at T3 Indirectly Through Posttraumatic Cognitions at T2

Predictors	<i>B</i>	<i>SE B</i>	<i>t</i>	95% CI
Outcome variable: T2 Cognitions; $R^2 = .01$				
% Positive	.14	.16	.88	[-.18, .46]
Outcome variable: Avoidance; $R^2 = .13$				
% Positive	.001	.01	.20	[-.01, .01]
T2 Cognitions	.01	.004	1.69	[-.0001, .02]
Attention	-.21*	.09	-2.43	[-.39, -.04]
Indirect effect	.001	.002		[-.001, .01]

Note. * $p < .05$ ** $p < .01$, T2 = Timepoint 2 in study (post-interaction); T3 = Timepoint 3 in study (Session 3); % Positive = Percentage of positive statements made by friend, Attention = Attention paid to film item

APPENDIX X

ONE-WAY ANALYSIS OF VARIANCE OF TOTAL NUMBER
OF INTRUSIONS REPORTED AT T3 BY CONDITION

One-Way Analysis of Variance of Total Number of Intrusions Reported at T3 by Condition

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>R</i> ²	<i>F</i>	<i>p</i>
Between groups	1	32.56	32.56	.11	.77	.38
Within groups	71	2986.10	42.06			
Total	72	3018.66				

Note. T3 = Timepoint 3 in study (Session 3)

APPENDIX Y

ONE-WAY ANALYSIS OF VARIANCE OF AVOIDANCE SEVERITY
REPORTED BY T3 BY CONDITION COVARIED WITH
ATTENTION TO FILM

One-Way Analysis of Variance of Avoidance Severity Reported at T3 by Condition
Covaried with Attention to Film

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>R</i> ²	<i>F</i>	<i>p</i>
Between groups	1	.08	.08	.09	.25	.62
Covariate	1	1.87	1.87			
Within groups	70	23.70				
Total	72	26.07				

Note. T3 = Timepoint 3 in study (Session 3)

APPENDIX Z

PERCENTAGE OF NEGATIVE SUPPORT STATEMENTS PREDICTING
CHANGE IN POSTTRAUMATIC COGNITIONS FROM T1 TO T2
MODERATED BY CONDITION

Percentage of Negative Support Statements Predicting Change in Posttraumatic Cognitions
From T1 to T2 Moderated by Condition

Predictors	<i>B</i>	<i>SE B</i>	<i>t</i>	95% CI
Outcome variable: Change in Cognitions; $R^2 = 0.005$, $F = .10$				
% Negative	.01	.12	.08	[-.23, .25]
Condition	.07	2.71	.03	[-5.33, 5.48]
% Negative x Condition	.04	.16	.27	[-.28, .36]

Note. * $p < .05$ ** $p < .01$, T1 = Timepoint 1 in study (pre-interaction); T2 = Timepoint 2 in study (post-interaction); % Negative = Percentage of negative social support statements made by friend.

APPENDIX AA

PERCENTAGE OF POSITIVE SUPPORT STATEMENTS PREDICTING
CHANGE IN POSTTRAUMATIC COGNITIONS FROM T1 TO T2
MODERATED BY CONDITION

Percentage of Positive Support Statements Predicting Change in Posttraumatic Cognitions
From T1 to T2 Moderated by Condition

Predictors	<i>B</i>	<i>SE B</i>	<i>T</i>	95% CI
Outcome variable: Change in Cognitions; $R^2 = 0.04$, $F = .88$				
% Positive	.25	.16	1.58	[-.06, .55]
Condition	4.26	3.82	1.16	[-3.36, 11.88]
% Positive x Condition	-.22	.19	-1.15	[-.59, .16]

Note. * $p < .05$ ** $p < .01$. T1 = Timepoint 1 in study (pre-interaction); T2 = Timepoint 2 in study (post-interaction); % Positive = Percentage of positive social support statements made by friend