

3-27-2017

Cognitive Functioning During Conflict in Intimate Partner Relationships Between Traumatized and Non-Traumatized Samples

Kylie N. Coleman

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Cognitive Functioning During Conflict in Intimate Partner Relationships
Between Traumatized and Non-Traumatized Samples

by

Kylie N. Coleman

Presented to the Faculty of the
Graduate Department of Clinical Psychology
George Fox University
in partial fulfillment
of the requirements for the degree of
Doctor of Psychology
in Clinical Psychology

Newberg, Oregon

March 27, 2017

Cognitive Functioning During Conflict in Intimate Partner Relationships
Between Traumatized and Non-Traumatized Samples

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has been approved

at the

Graduate Department of Clinical Psychology

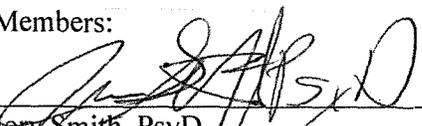
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as a dissertation for the PsyD Degree

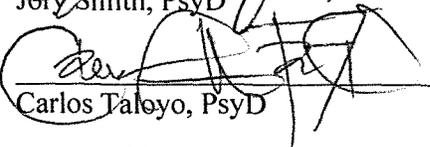
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Cognitive Functioning During Conflict in Intimate Partner Relationships

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Abstract

Significant differences have been found in neural connectivity of the brain in frontal, central, temporal, and parietal areas of individuals who experienced childhood trauma compared to those who had not (Cook, Ciorciari, Varker, & Devilly, 2009). This study investigated the relationship between the number of distressing and traumatic life experiences and participants' neural responses to observing simulated conflict in intimate relationship. Graduate students ($n = 11$) answered conflict resolution and emotional activation questions while watching a simulated, escalating marital conflict. The participants' neural responses were recorded via EEG mean power data from frontal and temporal brain regions. Heart rate (bpm) and galvanic skin response (gsr) were also collected. Participants completed questionnaires (SRRS, LEC-5) in order to identify trauma (experimental) and non-trauma (control) groups. Results indicated a significant interaction between groups. A main effect for conditions and channels was also found. Results

within the experimental group suggested brain activation decreased in response to stimuli, demonstrating the possibility of emotional centers shutting down in response to viewing conflict.

Keywords: Trauma, Electroencephalography (EEG), Relational Conflict, Intimate Partner Conflict, Frontal, Temporal, Emotions, Conflict-Resolution

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Chapter 1

Introduction

Interest in studying the impact of posttraumatic stress disorder (PTSD) on an individual's functioning has gained significant attention in the last several decades. The disorder showed a noticeably negative effect and a wide sphere of influence on multiple domains of functioning including information processing, attention, emotion regulation, problem-solving, motor response, and interpersonal relationships. A recent meta-analysis confirmed this negative impact, supporting the conclusion that the influence is significantly larger than in other anxiety disorders (Beck, Grant, Clapp, & Palyo, 2009). Though the relationship between posttraumatic stress disorder and functional impairment has been largely acknowledged, few studies exist that investigate the specific connection this disorder has to impairment outside of the symptom clusters in the *DSM-5* (Beck et al., 2009).

Research examining the impact of posttraumatic stress on interpersonal functioning has focused primarily on combat veterans. Dysfunctional patterns within social behavior such as interpersonal violence, impulsiveness, social anxiety, less satisfaction in intimate relationships, and marital and family discord have become widely recognized as principle features of combat-related PTSD (Freuh, Turner, Beidel, & Cahill, 2001; Lambert, Engh, Hasbun, & Holzer, 2012). Beck et al. (2009) found specific symptom clusters that are associated with the negative features noted above, specifically re-experiencing, avoidance, emotional numbing, and hyper-arousal. They also found that avoidance and numbing symptoms demonstrated “the strongest negative

correlation with marital quality” (p. 444). Caska et al. (2014) were the first to explore conflict within intimate couples among veterans with PTSD. They found that couples reported greater conflict and dissatisfaction, less warmth, and increased responses of anger and blood pressure following the conflict task. Not surprising, it has also been documented that PTSD in veterans is correlated with greater emotional distress in their spouses, in line with trauma conceptualizations that posit that survivors of trauma and their partners exhibit a bidirectional impact on their adjustment following the trauma (Caska et al., 2014). The rationale behind this influence is that the symptoms of posttraumatic stress such as emotional numbing, avoidance, and hyper-arousal inhibit the individual’s capacity to relate well to intimate partners, the natural consequence being that the partner experiences less fulfillment within the relationship, with findings supporting these detrimental outcomes for the partner (Lambert et al., 2012). Further, Macfarlene and Bookless (2001) investigated the effect of PTSD on attachment within emergency responders. They proposed that traumatic experiences would influence avoidant behaviors, self-awareness, intimacy, sexuality, and communication, and argued that future research should examine longitudinal attachment patterns and outcomes. The literature repeatedly emphasizes the need for continued investigation and further research in several key areas. Specifically, how is interpersonal functioning affected by trauma? And, because varying methods of data collection in this area have demonstrated that participants report differently depending on the modality of the assessment, what novel methods of assessment can be created to better understand the interpersonal impact of trauma? Finally, nearly all of the studies have examined male survivors of combat trauma. Couples in which the female is the trauma survivor need to be examined (Beck et al., 2009; Lambert et al., 2012).

Examining brain activity in trauma-exposed individuals specific to relational tasks could prove to be an invaluable assessment tool within the current holes of understanding in the literature. Limited research has investigated brain activity in PTSD. These studies have shown greater right-sided activation in the parietal lobe correlated to the arousal symptoms of PTSD (Metzger et al., 2004). Anxious arousal, like the kind commonly associated with posttraumatic stress, has been associated with increased activity in the right, posterior regions of the brain, whereas anxiety characteristic of generalized anxiety disorder has been associated with increased activity in the left, anterior brain regions (Metzger et al., 2004). Blomhoff, Reinvang, and Malt (1998) found differences in event-related potentials (ERPs) in response to meaningful words between individuals with PTSD and those without. Their research suggested that “an automatic activation (priming) of a specific emotional or semantic network that does not require attention” exists that causes “increased attention and emotional response to the trauma” (Blomhoff et al., 1998, p. 1051). Sex differences have also been noted, suggesting that the larger incidence of PTSD in the female population might be due to an increased activation of the brain in areas implicated in processing fear, particularly the amygdala, insula, brainstem, and hippocampus (Felmington et al., 2010). Significant differences have been found in the neural connectivity of the brain in frontal, central, temporal, and parietal areas of those who had experienced childhood trauma compared to those who had not (Cook, Ciorciari, Varker, & Devilly, 2009). In a meta-analysis of the ERP studies of PTSD, results clearly indicated that PTSD is accompanied by changes in information processing (Karl, Malta, & Maercker, 2006). Nearly every investigation has utilized ERP data, highlighting the necessity of data that uses mean power responses. Furthermore, to the best of my knowledge, no studies to date have examined social problem

solving in trauma without a PTSD diagnosis using electroencephalogram (EEG), nor have any studies examined brain activity of trauma-exposed individuals during relational conflict tasks.

The existing body of literature in this area has shown the negative implications for interpersonal functioning and intimate relationship within the clinical population of persons diagnosed with PTSD. But what of trauma's influence on intimate relationship in the non-clinical, civilian population? Do any of these negative implications on interpersonal functioning within intimate relationships transcribe? Very little research exists relevant to this question, and results have been varied. Twamley, Hami, and Stein (2004) investigated the effects of trauma in a population of college students without PTSD. Their results identified that college students are particularly resilient, as they found no significant effect. However, their investigation of neurological function utilized cognitive assessments that measure domains such as vocabulary comprehension, working memory, and processing speed. They did not examine brain activity by means of an EEG or issues of interpersonal functioning. Similarly, Stein, Kennedy, and Twamley (2002) compared neuropsychological functioning among female college students with PTSD, trauma exposure, and no trauma exposure. Their study found limited significant differences between groups as well, suggesting possible resiliency within the college population. Boals and Schuettler (2009) suggested that "life stress is more traumatic than traumatic stress," but results were not able to be replicated (p. 461). Instead, it was discovered that the association to symptoms of posttraumatic stress was not related to the nature of the event, but rather the individual's "emotional response....[suggesting] a variety of events can result in significant levels of PTSD symptoms" (Boals & Schuettler, 2009, p. 461). Also noted is the correlation between *negative emotional experiences*, *stressors*, and *dysfunctional behavior* such as

aggression or use of substances (Boals & Schuettler, 2009, p. 461). According to the National Child Traumatic Stress Network, every additional trauma exposure was associated with a significant increase in the likelihood of dysfunctional behavior; this was especially the case if the trauma occurred during a critical period of development and was associated with long-term adverse effects, notably psychosocially (Layne et al., 2014). These traumas, also known as adverse life events or stressors, included “emotional abuse, sexual abuse, physical abuse, domestic violence, parental separation/divorce, mental illness in household, household substance abuse, criminal household member, emotional neglect, and physical neglect,” and resulted in long-term dysfunctional behavior that was high risk or related to relationships and attachment (Layne, et al., 2014, p. S41). Cumulative trauma is also likely, as individuals with a history of trauma are more likely to have experienced multiple traumas or adverse life events (Cloitre et al., 2009; Layne et al., 2014). As such, theories suggest that multiple traumas will result in a complex presentation of disturbances in functioning, “predominantly in affective and interpersonal self-regulatory capacities such as difficulties with anxious arousal, anger management, dissociative symptoms, and aggressive or socially avoidant behaviors” (Cloitre et al., 2009, p. 399).

Though the aforementioned studies demonstrate the significant and additive disabling nature of trauma experiences on functioning, only a small number of studies have examined its effects within interpersonal functioning in romantic relationships. Bray, Barrowclough, and Lobban (2007) examined the interpersonal skills and functioning of clinical populations oriented around personality disorders and other mental illness. Some of this research finds application to the current study, such as those examining the social problem solving abilities in Borderline

Personality Disorder, as trauma is often a precursor to this diagnosis. Those studies indicated a clear deficit in social problem solving such as negative problem orientation, as well as a more impulsive, careless style toward solving problems (Bray et al., 2007). However, no research has examined the specific nature of social impairment within nonclinical populations, or used methods outside of self-report and interview.

Neuropsychological research on developmental traumatology showed that a traumatic incident alters catecholamine levels which can impair regional development in the brain and create susceptibility to impaired functioning and mental illness later (Cook et al., 2009). Cook et al. (2009) also found that prolonged or repeated trauma events can develop maladaptive neural networks, such as asymmetry in the central, temporal, and parietal regions.

Given this theory, the mean power of electrical activity in the brain should be different in the aforementioned regions in individuals with a history of traumatic experiences compared to those with fewer experiences. This study seeks to explore if the trauma experienced within a non-clinical population significantly and negatively impacts intimate relationships through impairment in brain areas related to the management of emotion and conflict resolution. Further, Blomhoff et al.'s (1998, p. 1051) research that demonstrated "an automatic activation (priming) of a specific emotional or semantic network that does not require attention" suggests that EEG's of individuals who have experienced trauma, as well as their response to viewing conflict, should be different than those without similar experiences. Participants will be asked to view a series of 3-minute clips involving intimate interpersonal conflict, with the hypothesis that participants who have a history of trauma will be less effective at correctly answering conflict resolution questions and will also display a higher mean power at the anterior temporal poles, orbital frontal

medial prefrontal cortex, and in the frontal lobe than participants with no history of trauma. It is also expected that individuals who experienced adverse life events at developmentally critical periods will demonstrate increased impairment compared to participants who did not, and that women will demonstrate greater activation in temporal and parietal lobes than men. As the conflict increases, the activation in the frontal and temporal lobes, heart rate, and skin conductance (GSR) are expected to increase, with frontal activation decreasing. It is also hypothesized that the experimental (trauma) group will be less likely than the control (non-trauma) group to answer the conflict resolution questions with a functional response, and that they will also report less patience and greater anxiety throughout the conflict resolution task.

Chapter 2

Methods

Participants

This study solicited 11 adult individuals (6 male, 5 female) from the graduate population of the George Fox campuses in Newberg, OR and Portland, OR. Participants were recruited through a list-serve solicitation. The study took place between spring semester 2016 and spring semester 2017 in the Robert Center's EEG lab on George Fox University's campus in Newberg, OR. Participants received compensation for their participation in the form of a \$10 gift card to Amazon or Target. Participants ranged from 21- 29 years of age, with an average age of 25.6. Five of the 11 participants identified as married, and the remaining six participants identified as single or dating. Participants were divided into control ($n = 6$) and experimental ($n = 5$) groups by the median score ($Md = 30$) of distress collected from the Social Readjustment Rating Scale (SRRS) questionnaire. Research was approved by the George Fox University Institutional Review Board on 9/2/2015.

Materials

Demographic Questionnaire. The questionnaire included demographic items such as age, sex, marital/relational status, and sexual orientation (see Appendix B).

The Social Readjustment Rating Scale (SRRS). Exposure to stressful life experiences and traumatic events was assessed using two self-report questionnaires, including the Holmes-Rahe Stress Inventory (the Social Readjustment Rating Scale, SRRS; Holmes & Rahe; 1967) which examined adverse life events. The Holmes-Rahe Stress Inventory is a 5-minute measure

that predicts a physical or emotional condition in response to repeated trauma events (Sherman, n.d.). Included on the inventory are 43 events that the individual could have experienced within the last year, such as the death of a spouse, divorce, and pregnancy. A point value is assigned to each item depending on its level of severity. Gerst, Grant, Yager, and Sweetwood (1978) found that rank ordering was reliable both for healthy adults ($r = 0.96 - 0.89$) and patients ($r = 0.91$ to 0.70). When examining validity, Holmes and Rahe (1967) found a positive correlation ($+0.118$) between Life Change scores and illness scores (see Appendix C).

The Life Events Checklist (LEC-5). The Life Events Checklist (see Appendix D) is a valuable tool and widely utilized. This 10-minute measure assessed exposure to 16 different events predictive of PTSD. The checklist includes events such as *fire or explosion*. Participants identified if the event *happened to me, witnessed it, learned about it, or is part of my job* (Weathers, et al., 2013). The mean kappa coefficients for each item was .61, and the test re-test correlation was $r = .82$. At the end of the checklist, participants identified which event reported would be considered the *worst event* and described the event. Research investigating the validity of the LEC-5 found a strong correlation between the number of items endorsed and PTSD symptom severity (r coefficients ranging from .34 to .48). However, because it is a self-report measure, internal and interrater reliability have not been investigated (Gray, Litz, Hsu, & Lombardo, 2004).

Distress Likert Scale. Participants were asked to rate their experience of distress to each event endorsed on the SRRS using a Likert Scale, with 0 being *no distress*, and 5 being *most distressed*. These ratings were summed as a means to sort participants between control (less trauma) and experimental (more trauma) groups. I created this measure for the purposes of

identifying participants for experimental and control groups, and it has not been empirically validated or supported.

BIOPAC MP150 Data Acquisition System. A BIOPAC MP150 Data Acquisition System with a 10-channel electroencephalogram (EEG), a 2-channel galvanic skin response (GSR) and 2-channel electrocardiogram (ECG) was used to gather physiological data. AcqKnowledge Acquisition and Analysis software (BIOPAC Systems, Inc.) was used for obtaining measurement values of physiological functioning. Electrodes were applied on the scalp with a 32 electrode cap. Channels measured (10) included frontal (Fp1, Fp2, F3, F4, F7, F8) and temporal (T3, T4, T5, T6) while ears were used as individual grounds. Single electrodes were placed for the GSR between the knuckles of the second and third finger and the ECG on the right clavicle area and left lower rib area. EEG mean power values for each electrode were averaged for each conflict section. ECG beats per minute and microseimen values were gathered for the same conflict sections.

Superlab 4. Superlab 4, a program that generates and runs experiments as well as manages data collection, was used to create and run the experiment (Cedrus Corporation, 1992). Superlab 4 presented a visual stimulus to the participants in the form of a series of videos (baseline, video 2, 3, 4, and debrief) demonstrating intimate couple conflict. Each video was followed by questions that attempted to identify the participant's emotional response to the video as well as his or her ability to manage conflict in either a functional or dysfunctional way.

Stimulus film. The stimulus films were made using graduate student actors. The film was divided into five videos, including a 3-minute baseline video, three videos of escalating conflict, and a debrief video (see script in Appendix E). The first clip was used for baseline

purposes, neutrally demonstrating a husband and wife sitting together in their living room. In the second clip, a fight began over a credit card charge. The fight gains momentum through the third and fourth clips, and the couple engages in a dysfunctional communication style that makes use of each of the four horsemen from Gottman (1999), including criticism, contempt, defensiveness, and stonewalling. Following each clip, Superlab presented an emotional and conflict resolution task. These included questions like, “Do you feel anxious right now?” as well as questions about how the participant would respond in the conflict, such as, “Would you give your partner space right now?” (See Table 2).

Table 2

χ^2 Significance of Crosstabs between Gender and Responses to Conflict Tasks

Conflict Questions	Pearson χ^2	Significance
2. With whom do you feel most connected? John/Jane	2.396	0.122
3. Do you feel anxious right now? Yes/No	2.213	0.137
6. How might you respond right now? Withdraw/Pursue	0.052	0.819
8. Do you feel anxious? Yes/No	4.412	0.036
11. Do you feel anxious now? Yes/No	0.11	0.74
14. Have you had a fight like this? Yes/No	1.925	0.382
15. Did this feel familiar? Yes/No	1.589	0.452

Procedure

Informed consent was obtained prior to participation in the study (see Appendix A). Participants were made aware in the consent disclosure about the possibility of experiencing discomfort as they viewed a simulated, escalating conflict, with the opportunity to withdraw

from the study at any time. Following the signing of the informed consent, participants completed a questionnaire collecting demographic information determining eligibility for the study. Participants were given instructions for the placement of the ECG electrodes and given the choice to put them on alone or with assistance, followed by the placement of the GSR electrodes. After placing the electrode cap, participants were first presented with Superlab instructions to place their hands on the keyboard with their right index finger on “1” and their middle finger on “3.” The directions explained that participants would view several film clips followed by questions, and they were asked to respond as quickly as possible. Participants watched the first neutral 3-minute clip, which established the baseline for the collected data, as well as investment in the actors. In the same fashion, the next four stimulus videos were presented, followed by a rapid series of questions to which the participant responded. The questions asked participants a relational conflict resolution question (e.g., how he or she would respond in the situation given a functional and dysfunctional response) and an emotional activation question (e.g., how angry or anxious do you feel right now?). Responses were recorded using Superlab. Upon completing the stimulus presentation, participants completed two self-report measures of adverse life experiences (SRRS and LEC-5), along with measures of distress. Following the end of the study, participants were debriefed and compensated with a \$10 gift card for Target or Amazon.

Chapter 3

Results

A General Linear Model with Repeated Measures ANOVA was used to test for interactions within and significant differences between conditions (each video phase), groups (experimental: trauma versus control: non-trauma), channels (FP1, FP2, F3, F4, F7, F8, T3, T4, T5, T6), and galvanic skin response (GSR). Heart rate data collected through ECG monitors were un-analyzable due to a technical problem within AcqKnowledge software. Results indicated a significant interaction between conditions and groups, $F(4, 36) = 3.166, p = .025$, with a medium effect size of .26. The means for each group by channel and condition are shown in Table 1 located at the end of this Chapter. A main effect between conditions and channels was also found. The greatest activation was seen for FP1 through Condition 1 (Baseline) for Group 2 (Trauma).

Significant differences were found between participants' neural response and the different conditions tested ($F(36, 324) = 2.058, p < .001$). The highest mean powers throughout conditions were found in Baseline and Video 2 conditions (FP1 = .0086), while right frontal and lateral activation dropped as the stimulus progressed.

No significant difference was found between groups and responses to the conflict-resolution task. Further, no significant difference was found between men and women on whom they reported feeling most connected to in the stimulus presentation $\chi^2(n = 11) = 2.396, p > .05$.

Sex differences between participants were minimal. Women were higher than expected in reporting feelings of anxiety following the first video of conflict, and men were higher than expected in reporting that they did not feel anxious in response to same question $\chi^2 (n=11) 4.41$, $p = 0.036$. No main effect was discovered for gender in the temporal area $F (1,9) = 1.97$ $p > .05$.

A main effect for conditions was discovered within the baseline condition and video with highest level of conflict $F (1, 9) = 5.61$, $p = .04$ $\eta = .38$ (see Figure 1).

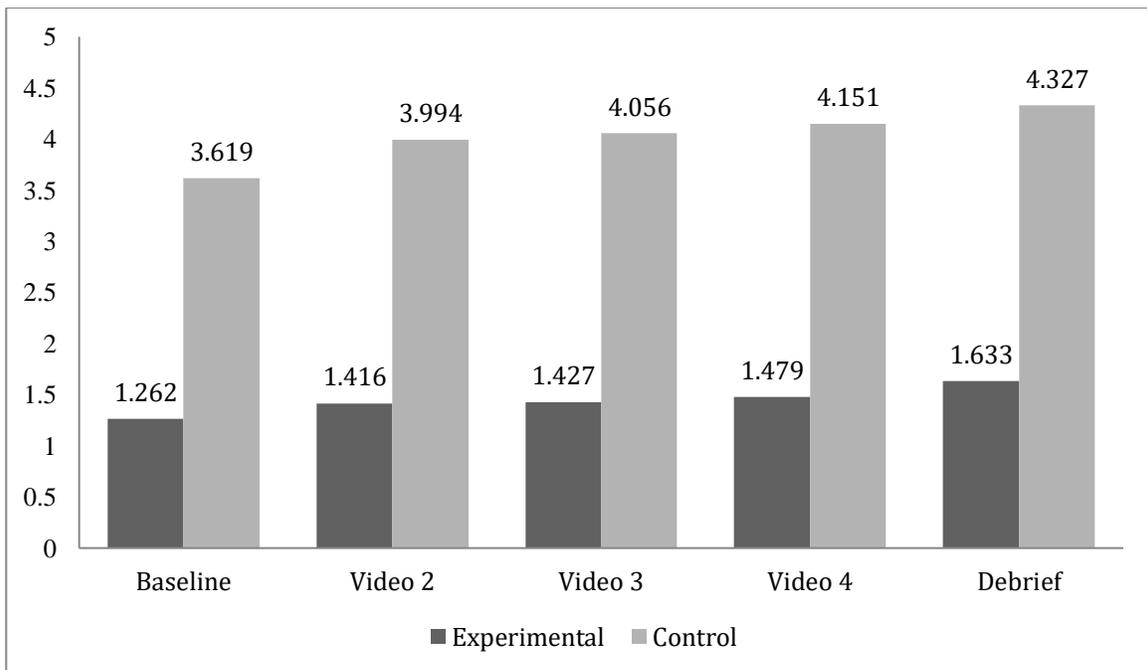


Figure 1. Main effect for condition

No significant difference was found between experimental or control groups, though both groups increased ulms across conditions as the conflict increased. Condition 1 and Condition 4 are significantly different; Condition 4 is higher for both groups. A Repeated Measures ANOVA was run for Groups by Condition $F (4,36) = 3.622$, $p = .014$, $\eta = .287$. Both groups demonstrated

an increase in GSR across the video conditions, indicating that participants were responding to the video stimulus as expected. Inequality in variance was found between experimental and control groups, but a main effect between groups was not present.

Table 1

Mean Powers for Groups (Channels x Conditions)

Channel	Group	Mean	SD	N
FP1 Baseline	1	.0090	.00543	6
	2	.0081	.00579	5
F3 Baseline	1	.0028	.00205	6
	2	.0028	.00375	5
F7 Baseline	1	.0026	.00194	6
	2	.0030	.00309	5
T3 Baseline	1	.0026	.00286	6
	2	.0009	.00041	5
T5 Baseline	1	.0025	.00272	6
	2	.0023	.00365	5
FP2 Baseline	1	.0077	.00422	6
	2	.0041	.00469	5
F4 Baseline	1	.0027	.00242	6
	2	.0024	.00330	5
F8 Baseline	1	.0022	.00186	6
	2	.0013	.00052	5
T4 Baseline	1	.0023	.00234	6
	2	.0021	.00296	5
T6 Baseline	1	.0020	.00224	6
	2	.0017	.00205	5
FP1 Video 2	1	.0099	.00589	6
	2	.0071	.00798	5
F3 Video 2	1	.0045	.00473	6
	2	.0041	.00726	5
F7 Video 2	1	.0053	.00686	6
	2	.0041	.00645	5

Table continues on next page

Table 1 *continues*

Channel	Group	Mean	<i>SD</i>	<i>N</i>
T3 Video 2	1	.0049	.00678	6
	2	.0008	.00045	5
T5 Video 2	1	.0043	.00656	6
	2	.0035	.00645	5
FP2 Video 2	1	.0085	.00457	6
	2	.0020	.00174	5
F4 Video 2	1	.0047	.00564	6
	2	.0040	.00732	5
F8 Video 2	1	.0023	.00169	6
	2	.0017	.00146	5
T4 Video 2	1	.0043	.00487	6
	2	.0037	.00662	5
T6 Video 2	1	.0036	.00457	6
	2	.0036	.00662	5
FP1 Video 3	1	.0073	.00581	6
	2	.0083	.00660	5
F3 Video 3	1	.0016	.00086	6
	2	.0051	.00615	5
F7 Video 3	1	.0016	.00110	6
	2	.0051	.00569	5
T3 Video 3	1	.0009	.00072	6
	2	.0011	.00073	5
T5 Video 3	1	.0008	.00062	6
	2	.0038	.00620	5
FP2 Video 3	1	.0059	.00409	6
	2	.0027	.00271	5
F4 Video 3	1	.0016	.00135	6
	2	.0043	.00666	5

Table continues on next page

Table 1 *continues*

Channel	Group	Mean	SD	N
F8 Video 3	1	.0013	.00078	6
	2	.0049	.00591	5
T4 Video 3	1	.0009	.00073	6
	2	.0039	.00628	5
T6 Video 3	1	.0008	.00071	6
	2	.0039	.00643	5
FP1 Video 4	1	.0076	.00745	6
	2	.0080	.00799	5
F3 Video 4	1	.0015	.00149	6
	2	.0050	.00761	5
F7 Video 4	1	.0014	.00065	6
	2	.0047	.00684	5
T3 Video 4	1	.0008	.00085	6
	2	.0042	.00749	5
FP2 Video 4	1	.0058	.00428	6
	2	.0049	.00471	5
F4 Video 4	1	.0013	.00099	6
	2	.0047	.00796	5
F8 Video 4	1	.0013	.00063	6
	2	.0052	.00777	5
T4 Video 4	1	.0010	.00093	6
	2	.0044	.00750	5
T5 Video 4	1	.0008	.00085	6
	2	.0042	.00749	5
T6 Video 4	1	.0007	.00075	6
	2	.0043	.00764	5
FP1 Debrief	1	.0041	.00238	6
	2	.0088	.00663	5

Table continues on next page

Table 1 *continues*

Channel	Group	Mean	<i>SD</i>	<i>N</i>
F3 Debrief	1	.0012	.00110	6
	2	.0060	.00592	5
F7 Debrief	1	.0008	.00043	6
	2	.0057	.00515	5
T3 Debrief	1	.0005	.00022	6
	2	.0032	.00285	5
T5 Debrief	1	.0004	.00039	6
	2	.0046	.00585	5
FP2 Debrief	1	.0036	.00201	6
	2	.0061	.00744	5
F4 Debrief	1	.0015	.00128	6
	2	.0050	.00648	5
F8 Debrief	1	.0008	.00038	6
	2	.0061	.00612	5
T4 Debrief	1	.0007	.00058	6
	2	.0049	.00631	5
T6 Debrief	1	.0003	.00019	6
	2	.0046	.00622	5

Note. Group 1 = Control/Non-Trauma Group; Group 2 = Experimental/Trauma Group.

Chapter 4

Discussion

This investigation served as a pilot study for the use of electroencephalography (EEG) mean power as a means of measuring the influence of adverse life events and trauma on cognitive functioning in intimate-partner conflict. Research has identified the development of abnormal and asymmetrical neural networks in temporal, central, and parietal regions of the brain in response to additive trauma exposure (Cook et al., 2009). Given this theory, the mean power of electrical activity in the brain should be different in the aforementioned regions in individuals with a history of traumatic experiences compared to those with less history of trauma. This study investigated if the trauma experienced within a non-clinical population significantly and negatively impacted intimate-partner relationships through impairment in brain areas related to the management of emotion and conflict resolution. I hypothesized that the experimental group would demonstrate higher mean powers in frontal and temporal areas of the brain than the control group of participants with less trauma exposure. It was further theorized that as the conflict in the stimulus increased, frontal activation would decrease. Though a significant difference in mean power between conditions was found between groups, preliminary findings suggest that brain activation was different between groups than from the manner originally theorized. Previous studies have found anxious arousal to be associated with increased activity in the right, posterior regions of the brain (Metzger et al., 2004). This study, however, found that mean powers in the experimental group were significantly lower in temporal areas and

higher in frontal areas than the control group. This suggests that areas responsible for verbal memory and understanding (T3, T5), such as Broca and Wernicke's areas, as well as emotional memory and understanding (T4, T6) decrease activity in response to conflict, especially among individuals who have experienced greater trauma and adverse life events compared to those who have not. Interestingly, and unlike the originally posited hypothesis, it was also discovered that the experimental group demonstrated greater mean power in frontal areas (FP1) than the control group, which continued to increase as the stimulus progressed. As this area of the brain is responsible for attention, it may be that the experimental group demonstrated greater activation due to their increased hypervigilance to emotional or relational cues than the control group.

It has been suggested that the larger incidence of PTSD amongst females might be due to an increased activation of the brain in areas implicated in processing fear, particularly the amygdala, insula, brainstem, and hippocampus (Felmingham et al., 2010). Though it was originally hypothesized that women would demonstrate greater activation in temporal areas than men, no significant differences were found in mean powers between reported genders. However, more men than women reported that they were not anxious in the middle of the conflict stimulus, and more men than women reported that they had experienced a fight similar to the simulated conflict they viewed during the study.

Heart rate and ulms were hypothesized to increase as the conflict increased. Heart rate data collected through ECG monitors were un-analyzable due to a technical problem within AcqKnowledge software. Given that participants were healthy young adults, it is likely that this data would have been unremarkable. However, galvanic skin response did change across conditions and did not decrease during the debrief period as expected.

Literature finds that multiple traumas will result in a complex presentation of disturbances in functioning, “predominantly in affective and interpersonal self-regulatory capacities such as difficulties with anxious arousal, anger management, dissociative symptoms, and aggressive or socially avoidant behaviors” (Cloitre et al., 2009, p. 399). Thus, the final hypothesis in this investigation posited that the experimental group would be less likely to answer the conflict resolution questions with a functional response than the control group, as well as demonstrating greater anxiety. Results demonstrated no significant difference between groups and their responses to the conflict resolution questions. However, as these were self-report answers to questions that have not been reliability normed, it is difficult to say if the questions were reliably asking what was measured.

Limitations and Research Implications

Although this research was carefully prepared, there were several unavoidable limitations to this study due to its broad scope. The most notable limitation was the limited sample size. EEG data is notoriously difficult to measure due to the time it takes to analyze per participant as well as its complexity, which made it difficult for this study to obtain a larger *n*. It may be that a greater sample size would demonstrate a more significant difference between control and experimental groups, as the number of participants in this study was relatively small. Further, as this sample was taken from a population of graduate students, caution must be taken in generalizing it to the general population. Future research might consider expanding sample size as well as utilizing a more heterogeneous population. It may be beneficial to utilize a more objective measure of trauma as well, as this study relied on self-report measures, making it difficult to truly identify if the experimental group was reflective of a trauma population. Finally,

as much of this study was novel experimentation, the conflict resolution questions were developed by me and are, as of yet, not reliable measures of actual conflict resolution ability. Future research might utilize normed measures to identify interpersonal functioning implications of trauma.

Clinical Implications

The significant differences found between participants' neural responses and each condition suggest that with or without the influence of trauma, emotional centers in the brain decrease activation in response to stress. Significant differences between groups further suggest that those who have experienced a higher number of traumas or adverse life experiences have even greater difficulty attending to verbal and emotional cues during conflict, as these brain areas are less active in response to the stressor. This decreased brain activation in the frontal and temporal brain areas may be responsible for varying degrees of freezing, fleeing, or dissociation in response to stressful conflict within intimate relationships. Areas of decreased activation following the simulated conflict suggest that the brain may be making decisions based on lingual processing and then coping through responding as minimally as possible, which appears to be particularly true for the experimental group of individuals who had greater exposure to trauma.

This research indicates that it may become difficult to attend to affective experiences while simultaneously experiencing conflict, suggesting the importance of close clinical attention to avoidance of conflict or rupture within the therapeutic relationship.

The results from this study may implicate the importance of identifying interventions effective for trauma populations that help to regulate the brain's response to interpersonal conflict, such as meditation or mindfulness. Future research might examine clinical interventions

useful for improving emotional and verbal attunement in therapy for populations with serious exposure to trauma.

Conclusion

This study sought to parse apart the effects of trauma on interpersonal functioning using the novel measure of EEG mean power analysis. Results indicated a significant difference between groups, suggesting a difference contrary to the literature; that mean powers in the experimental trauma group were significantly lower in temporal areas and higher in frontal areas than the control group. This suggests that areas responsible for verbal memory and understanding (T3, T5), such as Broca and Wernicke's areas, as well as emotional memory and understanding (T4, T6) decrease activity in response to conflict especially among individuals who have experienced greater trauma and adverse life events compared to those who have not. This study raised questions about the effects of trauma on interpersonal functioning and the need for further research as well as the need for the development of interventions targeted at increasing individuals' ability to attune to their affective experiences during conflict.

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Appendix A

Informed Consent for Research Participants

Background Information:

The purpose of this research is to examine the relationship between stressful life experiences and cognitive functioning, specifically within intimate relational conflict. If you choose to participate, you will be asked to fill out demographic information inquiring about age, relationship status, and sexual orientation. If you meet inclusion criteria, you will be asked to complete a series of tasks while wearing an electrode cap, skin, and heart rate monitor that will collect physiological data. Following completion of the tasks, you will be asked to fill out two questionnaires that ask about stressful and traumatic life events and the level of discomfort you experienced surrounding those events. Signing this informed consent form will be considered assent to all of the above. Please fill out the demographic questionnaire, sign the informed consent, and follow instructions for the placement of the electrode cap and heart and skin monitors. The total procedure is estimated to take 60-75 minutes.

What You Need to Know:

All information obtained and data collected from this study is strictly confidential. Questionnaires, demographic information, and physiological data will be de-identified through random number assignment, and your identity will remain confidential. Electronic data will be stored on a computer that is password protected.

Risks involved in the participation of this study include possible psychological or emotional discomfort from watching a marital conflict as part of the task. Psychological or emotional discomfort is also possible from being asked to identify stressful or traumatic life experiences in the two questionnaires following the task. This discomfort should be minimal and mild and should not last for an extended period of time beyond this study. You may withdraw from this study at any time without negative consequences.

Compensation for your participation will be available in the form of a \$5 online gift certificate to Amazon.com.

All presentations of the results will be in group form only. No personally identifying information will be revealed. Results will be made available to anyone who is interested, in the form of a journal manuscript. If you have any questions or concerns about your participation in this research, you may contact this researcher (Kylie Coleman) via e-mail at kcoleman13@georgefox.edu or phone 503.765.5067 or Dr. Glenna Andrews via foxmail.

Consent:

I have read the description of this research regarding cognitive functioning and stressful life experiences, and have voluntarily chosen to participate. I understand that the questionnaire information and physiological data is to be received and maintained in confidence and used for research purposes only. I also understand that if I wish to discontinue participation at any time prior to the completion of the study, I may do so without penalty. I have also received a signed copy of this consent form.

Signature of Participant

Date

Appendix B

Demographic Questionnaire

Participant Number _____

Date _____

Please respond to each of the following items:

Age _____

Do you identify as:

1.) Male | Female

2.) Married | Single | In a Relationship

3.) Straight/Heterosexual | Lesbian/Gay/Homosexual

Bisexual | Something Else | Don't Know

Student: Yes | No

Program: _____

Appendix C**Social Readjustment Rating Scale (SRRS)**

Source: Holmes, T.H. & Rahe, R.H. (1967). The social readjustment rating scale. *Journal of Psychosomatic Research*, 11, 213-218

1. Death of a spouse	100
2. Divorce	73
3. Marital Separation	65
4. Jail term	63
5. Death of a close family member	63
6. Personal injury or illness	53
7. Marriage	50
8. Fired at work	47
9. Marital reconciliation	45
10. Retirement	45
11. Change in health of family member	44
12. Pregnancy	40
13. Sex difficulties	39
14. Gain of a new family member	39
15. Business readjustments	39
16. Change in financial state	38
17. Death of a close friend	37
18. Change to different line of work	36
19. Change in no. of arguments with spouse	35
20. Mortgage over \$ 50,000	31
21. Foreclosure of mortgage	30
22. Change in responsibilities at work	29
23. Son or daughter leaving home	29
24. Trouble with in-laws	29
25. Outstanding Personal achievements	28
26. Wife begins or stops work	26
27. Begin or end school	26
28. Change in living conditions	25
29. Revision of personal habits	24
30. Trouble with boss	23
31. Change in work hours or conditions	20
32. Change in residence	20
33. Change in school	20
34. Change in recreation	19
35. Change in religious activities	19
36. Change in social activities	18
37. Loan less than 50,000	17
38. Change in sleeping habits	16
39. Change in no. of family get- together	15
40. Change in eating habits	15

COGNITIVE FUNCTIONING DURING CONFLICT

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41. Vacation	13
42. Holidays	12
43. Minor violation of laws	11

SCORING

Each event should be considered if it has taken place in the last 12 months. Add values to the right of each item to obtain the total score.

Your susceptibility to illness and mental health problems:

Low < 149 Mild 150-200 Moderate 200-299 Major >300

Prepared by Richard Lakeman as teaching resource. This is not a clinical tool. www.testandcalc.com

Appendix D

Life Events Checklist (LEC-5)

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); (e) you're not sure if it fits; or (f) it doesn't apply to you.

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

<i>Event</i>	<i>Happened to me</i>	<i>Witnessed it</i>	<i>Learned about it</i>	<i>Part of my job</i>	<i>Not Sure</i>	<i>Doesn't Apply</i>
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						

PLEASE COMPLETE PART 2 ON THE FOLLOWING PAGE

PART 2:

A. If you checked anything for #17 in PART 1, briefly identify the event you were thinking of:

B. If you have experienced more than one of the events in PART 1, 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 1, use that one as the worst event. Please answer the following questions about the worst event (*check all options that apply*):

1. Briefly describe the worst event (for example, what happened, who was involved, etc.).

2. How long ago did it happen? _____ (please estimate if you are not sure)

3. How did you experience it?

___ *It happened to me directly*

___ *I witnessed it*

___ *I learned about it happening to a close family member or close friend*

___ *I was repeatedly exposed to details about it as part of my job (for example, paramedic, police, military, or other first responder)*

___ *Other, please describe:*

4. Was someone's life in danger?

___ *Yes, my life*

___ *Yes, someone else's life*

___ *No*

5. Was someone seriously injured or killed?

___ *Yes, I was seriously injured*

___ *Yes, someone else was seriously injured or killed*

___ *No*

6. Did it involve sexual violence? _____ Yes ___ No

7. If the event involved the death of a close family member or close friend, was it due to some kind of accident or violence, or was it due to natural causes?

___ *Accident or violence*

___ *Natural causes*

___ *Not applicable (The event did not involve the death of a close family member or close friend)*

8. How many times altogether have you experienced a similar event as stressful or nearly as stressful as the worst event?

____ *Just once*

____ *More than once (please specify or estimate the total # of times you have had this experience_____)*

LEC-5 (10/27/2013) Weathers, Blake, Schnurr, Kaloupek, Marx, & Keane -- National Center for PTSD

Appendix E**Script for Film Clips****Baseline**

Scene: Husband and wife are sitting together in the living room, the husband is watching tv while the wife sits on the computer. The husband periodically laughs while he watches the tv. The wife gets up, puts her computer down, kisses her husband on the forehead, and leaves the room for a minute before coming back, sitting down again and picking up computer. Clip ends.

Video 2: The Fight Begins

Scene: Picking up where previous clip left off, husband and wife are sitting together in the living room.

Wife: Hey honey, I'm going to get started on the budgeting and bills for the month.

Husband: Sounds good to me, can I help?

Wife: I don't mind doing it (smiles) but thanks for offering. I'll let you know if I need anything.

Husband: Thanks so much for being budget-master of the Smith clan (laughs).

*About a minute passes, before the wife suddenly looks at the computer in consternation.

Wife: Um, what's this charge on the credit card from last weekend?

Husband: (sounding a little nervous) What do you mean?

Wife: (stony and flat) The charge for \$200 at "Portland Nightclub LLC." –pause- I thought you went to the game with Bob...you said your phone died.

Husband: Well, I uh....

Video 3: The Fight Escalates

Wife: (Interrupts Husband, colder) How many times do we have to do this?!

Husband: Can I even get an answer out first?! Do what, exactly?

Wife: Fine, fine answer away. Do tell me about how your phone died and you ended up spending \$200 at the bar and then decided to hide it from me.

Husband: Look, Bob and I did have plans to go to the game. But it fell through, he was having a really bad day, so I took him out. My phone really did die!

Wife: What is the point of people having cell phones if we can't let each other know when this happens! It hurts my feelings that you didn't think to use Bob's phone to call and let me know!

Husband: That honestly never occurred to me.

Wife: Fine. Of course it didn't. Well I don't just go out and spend \$200 at the bar and not tell you! We can't afford that. What if we can't make the bills this month- and why didn't you tell me after you got home?! You can't spend that much when we're broke!

Husband: You're right, I'm sorry. I really am. I'm a horrible person. I can never do anything right, I'm the most evil guy you've ever met.

Wife: (really yelling now) I hate it when you do that! I just want to know what the heck is going on! I'm your wife, is that really too much to ask!?! (she begins to cry) You haven't even answered why you didn't tell me about it in the first place!

Video 4: Climax of Conflict

Husband: (Gets up off the couch, yells) Look I didn't think it was that big of a freakin' deal! I wouldn't care if you did it! You're always on my case and I knew you would just flip out on me. If I want to go have some drinks with my buddy now and then, so what? You always have to be in control and it's like I can't even have a life! "I'm Jane, I'm perfect, I'm going to go call my friends and tell them how horrible my husband is."

Wife: (jumps up) I can't believe it! I am so over this! This isn't about the past, this is about how last weekend you went out and spent \$200 at a bar and didn't tell me! What is wrong with you? You can't even just say you're sorry! It's always a competition. Someone has to be right and someone has to be wrong, you're so black and white about everything!

Husband: Damn it, I did say I was sorry! You're just beating a dead horse into the ground like always!

Wife: Fine. I'm so tired of this! (Runs into the bathroom and slams the door).

Husband: (Goes over to the bathroom and bangs on the door) This not over! I'm not going to leave you alone until we figure this out! Hello?!

Wife: (yanks open bathroom door, goes and sits back on the couch, refuses to look at or speak to husband, stonewalling).

Husband: Of course. Checked out. Awesome (yells, then punches wall or throws something).

Debrief

Scenes of actors laughing and joking, showing it was fake conflict.

Appendix F

Conflict Questions

1. Do you feel relaxed right now? Yes/No
2. With whom do you feel most connected? John/Jane
3. Do you feel anxious right now? Yes/No
4. Do you want to leave the room now? Yes/No
5. If you were John, would you answer honestly? Yes/No
6. How might you respond right now? Withdraw/Pursue
7. Can John and Jane still make up? Yes/No
8. Do you feel anxious? Yes/No
9. Would you yell at John if you were Jane? Yes/No
10. Would you continue fight? Yes/No
11. Do you feel anxious now? Yes/No
12. Do you feel scared? Yes/No
13. Did the fight seem real? Yes/No
14. Have you had a fight like this? Yes/No
15. Did this feel familiar? Yes/No

Appendix G**Curriculum Vitae****Kylie N. Coleman**

3240 Winter Park St. ♦ Bozeman, MT 59718
 (406) 209-7848 ♦ kylie.coleman1@montana.edu

EDUCATION

- Doctor of Psychology, Psy.D, Clinical Psychology** *Anticipated July 2018*
 George Fox University, Newberg, OR
 Graduate Department of Clinical Psychology: APA Accredited
- Master of Arts, Clinical Psychology** 2015
 George Fox University, Newberg, OR
 Graduate Department of Clinical Psychology: APA Accredited
- Bachelor of Arts, Psychology and English with Honors** 2013
 Indiana University, Bloomington, IN

SUPERVISED CLINICAL EXPERIENCE

Montana State University Counseling and Psychological Services 2017—Present
 Bozeman, MT
Pre-Doctoral Intern, APA Accredited Doctoral Internship

- Providing brief and long-term individual psychotherapy to graduate and undergraduate students with diverse identities and backgrounds of ethnicity, gender, sexual orientation, race, nationality, spirituality, socioeconomic status, age, and cognitive ability
- Co-facilitating couples therapy with a senior staff psychologist utilizing emotion-focused and attachment models
- Co-facilitating ongoing, weekly mindfulness skills group therapy, which includes facilitating meditations and other mindful practices such as qi gong, gentle yoga, and learning to sit with difficulty
- Providing walk-in crisis intervention and risk assessment, as well as management of crisis for clients on caseload; collaborating with other staff and university police to transport crisis clients for hospitalization/residential care as well as reducing access to lethal means; participated in suicide prevention programming within community; will provide on-call crisis coverage and intervention in the spring semester

- Conducting three to five intake assessments each week; writing intake reports including demographic and historical information, risk assessment, diagnosis, conceptualization, and treatment recommendations
- Receiving direct observation through individual and group supervision through the video-recording of each psychotherapy session and intake, with specific attention to transference and countertransference process within the therapeutic relationship
- Administer and interpret CCAPS prior to each appointment and utilized Titanium for scheduling and record-keeping
- Provide outreach and consultation to campus organizations, community members, and Medical Services, including:
 - Developed programming and facilitated “Dinner & Dialogues” series focusing on relationship distress, academic distress, and microaggressions with American Indian/Alaska Native and TRIO students
 - Engaged in consultation, check-ins, and provided information about coping skills and campus resources to Hilleman Scholars and WWAMI medical students
 - Provided introduction to services and service overview about CPS to Diversity Awareness Office, TRIO, American Indian/Alaska Native Office of Student Success
 - Compose articles on a monthly basis for the Family Grad Housing newsletter about mental wellness, conflict, and coping
 - Became SafeZone certified to provide education and awareness about safety and inclusivity for members of LGBTQIAAP community
- Consult and present cases within a multidisciplinary, weekly Clinical Team meeting with CPS staff and Medical Services staff
- Attend five hours of formal weekly training, including diversity seminar, professional development seminar, assessment seminar, supervision of supervision seminar, and guest trainings
- Constructed formal case report and presentation including tape of session, presenting problem, history, socio-cultural factors, conceptualization, and transferences, with receipt of formal feedback from training committee
- Will conduct two comprehensive psychological assessment batteries including a clinical interview, cognitive, personality, and projective measures; will present in integrated report and provide assessment feedback to client and referring therapist
- Will provide weekly individual supervision to a Master’s level clinician in spring semester

Supervisors: Brian Kassar, Psy.D., & Cheryl Blank, Ph.D.

Washington State University Vancouver Counseling Services
Vancouver, WA

2016—17

Practicum III Pre-Internship Graduate Student Therapist

- Provided brief and long-term psychotherapy to diverse population of graduate and undergraduate students including adults, low SES, and ethnically and religiously diverse clients

- Facilitated weekly individual and group therapy for undergraduate and graduate students struggling with trauma, anxiety, depression, disordered eating, interpersonal problems, and other mental illness
- Co-facilitated an interpersonal process group for two semesters with licensed supervisor
- Implemented interventions utilizing evidenced based treatments, such as supportive psychotherapy, brief psychodynamic therapy, emotion-focused techniques, cognitive therapy, and mindfulness
- Conducted intake interviews, engaged in treatment planning, assessed risk, and provided working diagnosis
- Wrote intake reports, developed and presented case reports and conceptualizations, created treatment plans, and documented clients' individual progress with session notes
- Administered CCAPS every three to five sessions and utilized Titanium for scheduling and record-keeping
- Received direct observation within individual supervision through the video-recording of each psychotherapy session and intake
- Engaged in outreach presentations with student organizations and classes across campus, including trainings on mind-body connection and services available at Counseling Services

Supervisors: Allison Chambers, Psy.D, Brooke Kuhnhausen, Ph.D.

Chehalem Counseling Center

2015—16

Newberg, OR

Practicum II Graduate Student Therapist

- Provided long-term, outpatient psychotherapy to low SES, rural population of clients including children and adolescents, families, adults, elderly, homeless, and adolescents in Chehalem Youth and Family Services's residential treatment program for adolescents
- Provided psychotherapy for treatment of acute and complex trauma, addiction, abuse, depression, anxiety, and other mental illness utilizing attachment and brief psychodynamic therapy as a framework for implementing strategies for symptom reduction, like mindfulness, DBT and CBT skills
- Co-facilitated group psychotherapy for adolescents in residential care, including psychoeducation on emotion regulation, mindfulness, and other DBT strategies
- Administered and interpreted assessment measures including OQ-45, YOQ-45, DLA-20, GAD 7, PHQ-9, SBIRT/CRAFT prior to each session or intake
- Conducted intake interviews, wrote intake reports, engaged in treatment planning, assessed risk and created safety plans, collaborated with local authorities for crisis clients and continuity of care, developed working diagnoses, wrote session notes, and wrote mental health assessments including thorough history, case conceptualizations, and diagnostic justification

Supervisors: Holly Hetrick, Psy.D., Paul Stoltzfus, Psy.D.

Supplemental Practicum: Long-term Psychodynamic Psychotherapy

2016

Portland, OR

Supplemental Practicum Graduate Student Therapist

- Sought out additional/optional supervision to improve understanding of technique and delivery of psychodynamic psychotherapy from a psychoanalytic therapist in private practice
- Received bi-monthly psychodynamic supervision and instruction for long-term clients
- Presented de-identified case material in supervision, processed transference and countertransference material, and received feedback related to the provision of psychodynamic psychotherapy

Supervisor: Ryan Kuehlthau, Psy.D.

Supplemental Assessment: George Fox University Behavioral Health Clinic 2015—16
Newberg, OR

Student Therapist, Graduate

- Recruited additional/optional opportunities for assessment training and supervision through providing assessment for community health clinic, which provides sliding scale services to rural community of Newberg, OR
- Conducted formal psychological evaluations including intake interview, behavioral observations, mental status exam, additional supplemental interviewing, and formal comprehensive assessments of 3+ instruments including WAIS-IV, MMPI-2, WRAT4, CPT-3, RAADS-R, and ABAS-3
- Following assessment, completed written integrated reports detailing results of testing, diagnosis, and recommendations which were discussed and explained to client within feedback sessions

Supervisor: Joel Gregor, Psy.D.

Cedar Hills Hospital 2014—15
Portland, OR

Practicum I Graduate Student Therapist

- Provided individual inpatient crisis stabilization, short-term behavioral health services, milieu therapy, and brief interventions for patients of diverse demographic and identity variables with severe mental illness, chemical dependence, and a history of trauma
- Facilitated multiple inpatient group therapy programs including Women's, Mental Health, Chemical Dependence, and Crisis Mental Health groups
- Co-facilitated and independently facilitated intensive, three-hour outpatient group therapy for patients following their release from inpatient services including Women's, Chemical Dependence, and Mental Health groups
- Developed treatment plans, documented progress within S.O.A.P format, provided risk assessment and safety planning, and coordinated care within a multidisciplinary team of doctors, nurses, psychiatrists, social workers, and medical technicians in an integrated psychiatric hospital setting

Supervisors: Jory Smith, Psy.D., Kristie Knows His Gun, Psy.D.

George Fox University Graduate Department of Clinical Psychology

2014

Newberg, OR

Pre-practicum Graduate Student Therapist

- Provided weekly psychotherapy for two George Fox University undergraduate clients for ten sessions
- Received direct observation via recordings of each session in group supervision
- Conducted intake interviews, developed treatment plans, wrote formal intake reports, and completed termination summaries

Supervisors: Carlos Taloyo, Psy.D., Mark McMinn, Ph.D., ABPP

TEACHING & RELATED WORK EXPERIENCE

Adjunct Professor, INTRODUCTION TO THE DSM-5

2016

George Fox University, Master of Social Work Program

- Trained advanced-practice social work students in history, knowledge, utilization, and application of DSM-5 in order to effectively assess and diagnose mental disorders as well as develop and implement mental health service plans
- Developed course material including summaries of the required reading, case vignettes, diagnostic conceptualizations, and lectures, as well as assisted in course development
- Supervised and facilitated group learning and clinical skill building in diagnosis and assessment in 8 hour lectures and group exercises

Supervisor: Clifford Rosenbohm, Ph.D.

Teaching Assistant, ADVANCED COUNSELING

2016

George Fox University, Undergraduate Psychology Department

- Met for one hour weekly with a small group of undergraduate students to help facilitate engagement and understanding of foundational counseling skills
- Facilitated development of clinical skills through supporting the students' personal insight, role modeling, mentoring, providing feedback to mock-therapy recordings, role playing, and teaching

Supervisor: Kristina Kays, Psy.D.

Clinical Lab Group Leader, PSYCHODYNAMIC PSYCHOTHERAPY

2016—17

George Fox University, Graduate Department of Clinical Psychology

- Facilitated development of clinical skills in second-year PsyD graduate students through mentoring, teaching, and providing feedback about case conceptualization from a psychodynamic orientation

Supervisor: Nancy Thurston, Psy.D.

Contract Tutor

2013—15

Tutor Doctor and Wyzant

- Met 2-3 times weekly in students' homes to help address their individual academic needs through private tutoring sessions, as well as scheduling, record keeping, serving as a liaison between parents and their children, and facilitating goal setting and organizational skills

Supervisor: Mark Seker

Supplemental Instructor, INTRODUCTORY PSYCHOLOGY (PSY-P 101)

2013

Indiana University, Undergraduate Department of Psychology

- Paid position to provide supplemental introductory psychology lecturing to Indiana University student athletes, generally 5-12 students for one hour twice weekly
- Developed multiple practice exams and study handouts prior to each exam
- Facilitated an understanding of the material from class through lecturing and answering questions that arose for students throughout the week

Supervisor: Dan Woodside

SUPERVISION EXPERIENCE

Supervision of Masters of Counseling Interns

2018

Montana State University, Counseling & Psychological Services

- Currently engaging in Supervision of Supervision Seminar on a bi-weekly basis
- Will provide individual supervision to Master's intern for one hour weekly
- Will foster development of knowledge, skills, and attitudes of professional therapists
- Will provide consultation on case conceptualization, modes of treatment, ethical matters, the impact of diversity on clinical work, reflective practice, and the use of research in clinical work

Supervisor: Betsy Asserson, Ph.D.

Peer Oversight

2016—17

George Fox University, Graduate Department of Clinical Psychology

- Provided individual supervision to second-year PsyD student for one hour weekly
- Facilitated the development of knowledge, skills, and attitudes of professional psychologists
- Provided consultation on case conceptualization, modes of treatment, ethical matters, the impact of diversity on clinical work, reflective practice, the use of research in clinical work, conducting and interpreting assessment, conflict de-escalation
- Role-played difficult clinical and supervisory conflicts at supervisee's request

Supervisor: Rodger Bufford, Ph.D., Brooke Kuhhausen, Ph.D.

PRESENTATIONS & PUBLICATIONS

Coleman, Kylie. (March 2017). *Cognitive Functioning During Conflict in Intimate Relationships Between Traumatized and Non-Traumatized Samples*. Poster presented at Richter Scholars Poster Session, George Fox University (Newberg, OR).

Rabie, A., Coleman, K., Goins, L., Winterrowd, M., & Juliette's House Child Abuse Intervention Center. (2016). *Speak Up! The Right to Refuse Abuse: A School-Program for Child Sexual Abuse Prevention*. Publication and copyright in process by Juliette's House Child Abuse Intervention Center.

HONORS, AWARDS, & SCHOLARSHIPS

Richter Scholar, George Fox University	2016
<ul style="list-style-type: none"> Awarded \$1,594.00 for independent dissertation research through the Richter Scholars Program, which funds 11 universities including Yale, Dartmouth, and George Fox University 	
English Honors Award, Indiana University	2012—2013
Dean's List, Indiana University	2010, 2012
Hudson and Holland Scholar, Indiana University	2009—2013
<ul style="list-style-type: none"> Awarded \$6,000/year for outstanding academic achievement, leadership, commitment to social justice, and enhancing diversity 	
Recognition Scholarship, Indiana University	2009—2013
<ul style="list-style-type: none"> Awarded \$2,000/year for SAT score achievement 	
Match Scholarship, Indiana University	2009—2013
<ul style="list-style-type: none"> Awarded \$2,000 for academic achievement 	
Hispanic Scholarship Fund	2009—2013
<ul style="list-style-type: none"> Awarded \$5,000/year for academic achievement 	
Mexican Scholarship, Central Indiana Community Foundation	2009—2013
<ul style="list-style-type: none"> Awarded \$2,000/year for demonstrating academic promise 	
HACER Scholarship, Hispanic American Commitment to Educational Resources	2009
<ul style="list-style-type: none"> Awarded \$1,000 for community involvement and academic achievement 	
Salute to Women of Promise Scholarship, YWCA	2009
<ul style="list-style-type: none"> Awarded one-time funds for working towards social and economic independence 	

RESEARCH EXPERIENCE

Doctoral Dissertation 2017

Cognitive Functioning During Conflict in Intimate Relationships Between Traumatized and Non-Traumatized Samples

- Preliminary Defense: May 2015
- Final Oral Defense: Full Pass May 2017

Dissertation Chair & Committee Members: Glena Andrews, Ph.D., Carlos Taloyo, Ph.D., Jory Smith, Psy.D.

Consultant

2015—16

Juliette's House: Child Abuse Intervention Center

- Consulted with Juliette's House, a child abuse intervention center in McMinnville, OR in order to research, design, and implement a teacher curriculum to assist the state schools in meeting the requirements of a recent change in Oregon Legislature (Oregon Senate Bill 856) relating to a child sexual abuse prevention instructional program in public schools
- Developed a program that included four developmentally-appropriate, research-based teacher packets, including lesson plans, as part of a child sexual abuse prevention instructional program for students in grades K-12
- Program is currently being implemented in several primary and secondary schools in Oregon
- Program material developed included teacher informational material, parent handouts, lesson plans incorporating developmentally appropriate lecture material, in-class activities, role-plays, and additional resources/materials to educate teachers, parents, and students about how to understand, prevent, and communicate incidents of sexual abuse

Faculty Advisor: Marie-Christine Goodworth, Psy.D.

Research Vertical Team Member

2014—17

George Fox University Graduate Department of Clinical Psychology

- Participated in bi-monthly meetings to discuss, collaborate, and evaluate the design, methodology, and progress of independent and group research projects

Supervisor: Glena Andrews, Ph.D., MSCP, Director of Clinical Training

Telephone Interviewer

2013

Center for Survey Research, Indiana University

- Recruited subjects and collected confidential data through telephone interview surveys for research studies

Supervisor: Jerome Sibulo, M.A.

Undergraduate Research Assistant

2012—2013

Indiana University

Department of Psychology, Developmental Cognitive Neuroscience Lab

- Assisted in the development and facilitation of research projects, developed skills using ELAN, E-Prime, Adobe Illustrator, and Adobe Premiere, created and edited stimuli, edited and coded data, recruited parents and their children for studies, acted as a confederate in experiments, recorded data, and read related research papers for weekly lab meetings

Supervisor: Bennett Bertenthal, Ph.D.

RELEVANT PROFESSIONAL EXPERIENCE

Columbia Care

2015—16

Portland, OR

Residential Associate, QMHA/QMHP

- Organization provided residential care for individuals with severe and persistent mental illness
- Supported and developed residents' life skills through therapeutic interventions
- Provided meal preparation, housekeeping, and transportation for residents

AFFILIATIONS, MEMBERSHIPS, & LEADERSHIP EXPERIENCES

President, Student Council, George Fox University, 2016—2017

Co-President, Neuropsychology Student Interest Group, 2016—2017

Student Council Member, George Fox University, 2015—2017

Mazamas Member, 2016—Present

Division 39 Psychoanalysis Student Affiliate, 2017—Present

Society for Exploration of Psychoanalytic Therapies & Theology, 2015—Present

Oregon Psychological Association, Student Member, 2016

American Psychological Association, Student Affiliate, 2013—Present

Division 56 Trauma Psychology, 2015—2017

Psi Chi, the National Honors Society in Psychology, 2009—Present

SELECT PROFESSIONAL TRAININGS AND WORKSHOPS

Beil-Adaskin, D. (2014). *Evidenced Based Treatments for PTSD in Veteran Populations: Clinical and Integrative Perspectives*. Lecture Presented at George Fox University Graduate Department of Clinical Psychology, Newberg, OR.

Bourg, W. (2016). *When Divorce Hits the Family: Helping Parents and Children Navigate*. Lecture Presented at George Fox University Graduate Department of Clinical Psychology, Newberg, OR.

- Brown, S. (2017). *Native Self-Actualization: It's Assessment and Application in Therapy*. Lecture Presented at George Fox University Graduate Department of Clinical Psychology, Newberg, OR.
- Dodgen-Magee, D. (2014). *Face Time in an Age of Technological Attachment*. Lecture Presented at George Fox University Graduate Department of Clinical Psychology, Newberg, OR.
- Hall, T. & Janzen, D. (2016). *Neuropsychology: What Do We Know 15 Years After the Decade of the Brain?* Lecture Presented at George Fox University Graduate Department of Clinical Psychology, Newberg, OR.
- Hill, M. (2017). *Safezone training and certification*. Presented at Montana State University Counseling & Psychological Services, Bozeman, MT.
- Hoffman, M. (2015). *Relational Psychoanalysis and Christian Faith: A Heuristic Dialogue*. Lecture Presented at George Fox University Graduate Department of Clinical Psychology, Newberg, OR.
- Medical University of South Carolina (2015). *Trauma-Focused Cognitive-Behavioral Therapy training and certificate*. Retrieved from <http://tfcbt.musc.edu>.
- Sandoval, B.E. & Cutts, J. (2013). *Primary Care Behavioral Health*. Lecture Presented at George Fox University Graduate Department of Clinical Psychology, Newberg, OR.
- Suicide Prevention Resource Center. (2017). *CALM: Counseling on Access to Lethal Means training and certification*. Retrieved from <https://training.sprc.org>
- Thum, L. & Saab, M. (2017). *Ethics and Montana Law*. Lecture presented at Montana State University Counseling & Psychological Services, Bozeman, MT.
- Warford, P. & Baltzell, T. (2017). *Domestic Violence: A Coordinated Community Response*. Lecture Presented at George Fox University Graduate Department of Clinical Psychology, Newberg, OR.
- Yamhill County Health and Human Services (2015). *The Daily Living Activities Functional Assessment (DLA-20)*. Newberg, OR.