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Men and Masculinity: How the Brain and Heart Respond to Shame

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Abstract

This dissertation examined the influence that level of adherence to traditionally masculine gender values, norms, and beliefs has on how men cognitively and physiologically respond to a shame based projective measure. A 2-stage study was used. In the first stage 208 undergraduate men responded to the Conformity to Masculine Norms Inventory (CMNI; Mahalik, Burns, & Syzdek, 2007). Utilizing the total masculinity score from the CMNI, quartiles were constructed. The two extreme quartiles comprised 2 groups; most traditionally conforming (TMASC) and most non-traditionally conforming (NTMASC) to masculinity norms. Men from these groups (TMASC n = 11; NTMASC n = 13) were invited into the 2nd stage during which physiological measures were recorded while they viewed and responded to the Thurston-Cradock Test of Shame (TCTS, Thurston & Craddock, 1998), a projective measure. Verbal responses to the shame test were coded and scored, electrical activity from the EEG and Heart Rate Variability were utilized in analyzing the results. Minimal differences in verbal responses to shame were found. However, significant differences and/or large effects sizes occurred as TMASC men and NTMASC experienced shame.

The results provide indications that men may respond verbally in a similar manner but differ in their physiological responses. Furthermore, results identified potential cognitive process of avoidance of shame experienced by TMASC.

Keywords: masculinity, shame, projective assessment, heart-rate variability, EEG

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Chapter 1

Introduction

Traditional Masculinity

From an early age, young boys are learning, navigating, and fighting for what it means to be a man. For many men, there is an internal struggle as they wrestle to fit into the culturally accepted definitions of being a man within U.S. society. There are pressures from every angle to fit within a specific mold. It is a process of exploration, redirection, and conformity. Boys learn masculine gender-role norms from the majority culture, and these provide direction and boundaries regarding normative masculine behavior. Yet these socially agreed upon norms are not all-encompassing, and many men struggle with balancing their own experiences and feelings with what is socially acceptable within masculine gender-role norms (Genuchi & Valdez, 2015). This very tension has been named gender-role conflict and masculine gender-role strain (O'Niel, 1981; Pleck, 1995). While this theory has been known for some time, men are not necessarily aware of it, and among those who are, many choose not to discuss it (Gorski, 2010).

This internalization and gender role conflict has resulted in serious consequences for men. They currently lead women in 9 out of 10 of the leading causes of death (Center for Disease Control and Prevention [CDC], 2010), and are four times more likely to commit suicide than women. They are less likely than women to seek out both annual physical exams and mental health support. Men are at greater risk of death in every age group, especially 15-24 year-old men, due to higher rates of risk-taking and suicide. Men are more likely to be the perpetrators and victims of more violent and aggressive behaviors (Jakupack, Tull, & Roemer, 2005), and

they more likely to carry negative attitudes towards seeking help, thus are less likely to receive help (Addis & Mahalik, 2003). It is evident that while men may continue to prosper financially in the United States, they are suffering internally and physically. Men who subscribe to more traditional masculine gender-norms are at the greatest risks (Mahalik, Burns, & Syzdek, (2007).

To understand gender and gender discourse, we must explore its roots. The women's liberation movement, and all waves of it, has been vital in bringing women's rights and equality to the forefront of public discussion (Fraser, 2015). The second wave of the Feminist Movement that originated from within the New Left of the 60s, was the beginning of a movement that has continued to progress women's rights and equality (Fraser, 2015). Nancy Fraser (2015) stated this movement, "became a relatively freestanding social movement, dedicated to challenging male domination in all its forms" (p. 96). She explains the movement engaged women from virtually every class, age, ethnicity, race, sexuality, and nationality, and succeeded more than any other strand of 60's radicalism in reshaping the social landscape (Fraser, 2015). Because of the work and bravery of thousands of women, both women and men are now speaking out against female body shaming, wages disparity, and many other social issues that have historically marginalized women (Fraser, 2015). There has been an evident shift and movement toward having more and open discussions around issues of inequality and gender.

However, a predominately missing piece of the discourse has been the discussion of men's issues. This lack of focus on men's issues has largely left masculinity unexamined and invisible until recently (Short, 2007). Earp, Jhally, and Young, (Producers), and Earp and Katz, (Directors; 2013) in their video, *Tough Guise 2*, explain the phenomenon this way,

> One of the ways dominance functions is through being unexamined … we focus always on the subordinated group and not on the dominant group. And that's one of the ways that the power of dominant groups isn't questioned – by remaining invisible." (Earp et al., 2013).

This appeared to be the root of much of the resistance to men's studies. If society tackled men's issues and masculinity, then masculine gender-role norms may change and men could feel like they are losing some of the power they have historically held. This loss of power could be a direct threat to a man's sense of masculinity itself.

Paul Kivel (2010) helped to describe masculinity as a confining and socially constructed box. Many boys learn, experience, figure out, or are explicitly told what it means to be a man growing up in society from many different sources. Terms like strong, competitive, caretaker, sex seeking, stoic, leader, and dominant have formed a narrow and, at times, rigid framework for being defined as "a man". Kivel explained that boys must exhibit these traits to fit within the "Act Like a Man Box" (p. 97). If or when they do not fit within this narrow box they are labeled using derogatory terms that are also often used against women, and pressure is created through the use of shaming to put boys back into the box. This is where masculinity becomes a performance, a role in a play. Since very few males can always be in the box for their entire lives, the trick is to act like you are in order to cover for any lapses. In effect, the performance of masculinity requires constant vigilance to make sure that nobody sees any missteps. Since the logic of the box is an either/or, a man is either all the way in or all the way out (Kivel, 2010).

The "Act Like a Man Box" is both explicit and implicit from childhood to adulthood (Kivel, 2010). From this socially constructed framework of traditional masculinity, Kilmartin

(2014) labeled the four pillars that have risen to define men and masculinity. The first, "No Sissy Stuff" (p. 7) is used to create distance from anything deemed feminine; homophobic, emotional, and the color pink. The second, "Be a Big Wheel" (p. 7) requires that men strive for success, achievement, and focus on competition. Third, "Be a Sturdy Oak" (p. 7) keeps men disconnected and safe by avoiding vulnerability, maintaining composure and control, and being tough. The last pillar, "Give Em' Hell (p. 7) is primarily designed to prove that you still belong in the "Man Box" based upon being aggressive and dominant. Thus, it is no surprise that male socialization patterns emphasizing emotional restrictiveness and stoicism have resulted in men's decreased access to vulnerable feelings, limited emotional insight, and heightened psychological distress. Researchers have argued that boys are embedded in cultural ideals of masculinity that have limited and stigmatized their emotional expression and willingness to respond to or acknowledge feelings (e.g., Reilly, Rochlen, & Awad, 2014).

This performance of masculinity can be likened to a dance performed in a minefield. As men learn and figure out what it means to be a man within societal contexts, the consequences are substantial. The consequences of being outside of the box are shame-laden, so much so, that even as male gender role socialization promotes a "shame phobic" male, the experience of shame may become both a vehicle of gender socialization and an internalized product of it (Krugman, 1995). When they find themselves outside of the "Act like a Man Box" males know the consequences and quickly ramp up the performance to prove they are in the box. Thus, it has been suggested that men have been socialized to deny and avoid self-conscious emotions, including shame, yet regularly have their behavior policed by others in a deeply shameful manner (Reilly et al., 2014). It is this heightened experience of shame used as policing adherence

to traditional gender norms that also inhibits men from expressing or dealing with the shame in comprehensive ways.

Shame

Separation of shame from guilt. Frequently shame and guilt are utilized interchangeably within the therapeutic context and within emotion research. However, why they both fall under the classification of "Self-referential emotions" their social capital and results may have varying consequences. The differentiation of guilt and shame and the general function of self-referential emotions are subjects of a longstanding and ongoing debate (Roth, Kaffenberger, Herwig, & Bruhl, 2014). This discussion must include Helen Block Lewis' (Dearing & Tangney, 2011) widely accepted contributions to the differentiation of guilt and shame. From her explanation, the difference lies upon whether the focus of attention is on guilt as it is utilized in addressing the actions of an individual, or more generally where shame is related to the individual as a whole (Dearing & Tangney, in press)

Analytic perspective of shame. A comprehensive review of the literature around shame is far beyond the scope of this dissertation; however an analytic historical perspective in combination with the most recent literature is necessary to help fully understand it for the purposes of this study. Freud introduced the idea of shame as a psychological concept in his theory (1895; as cited in Rote, 2002). It is here that Freud, with contributions from Josef Breuer, identified shame as both a defense and an effective response to the patient's ego being approached by an idea that proved to be incompatible and provoked a rebelling force, of which the purpose was to defend against the incompatible idea (Rote, 2002). Lansky explained Freud's and Breuer's "incompatible idea," understanding shame as being part "the emotion itself, the

searing emotional pain involving exposure and disgrace" (p.31), and the signal that such danger toward the psyche is imminent. However, Lansky pointed out that Freud later moved away from his usage of shame and failed to connect it to narcissistic phenomenon (Lansky, 1995).

It is at this point that shame takes a backseat in the analytic literature. It is briefly mentioned in Silvan Tomkins' (1965; as cited in Rote, 2002) writings where he developed an idea for shame based around a psychological model wherein shame has an inborn psychological script that is inherent, internally programmed, and acts as a dampening circuit to a positive experience. Just like a circuit breaker, shame, per Tomkins, is an all-encompassing reaction of the organism to halt the overwhelming experience (Rote, 2002).

Shame reemerges in psychoanalytic work in the early 1970s in both Helen Block Lewis' work, *Shame and Guilt in Neurosis* (1971) and Hein Kohut's, *The Analysis of Self* (1971). According to Lansky (1995), Lewis, using transcripts from sessions and coding explicit and inexplicit shame responses in interchanges, concluded that many therapeutic interchanges resulted from shame experiences that were unacknowledged and thus, nearly all hostility, overt anger, and rage in sessions were immediately followed a clear-cut experience of shame that was unacknowledged by the therapist or patient. Kohut found a highly linked relation to shame and the transference process in the room such that the therapists could be the initiator of a shame based response in the patient (Rote, 2002). Most recently, shame has been understood as feelings that arise in situations in which an individual recognizes that he or she has committed an offense or violated either a personal or social standard that is held to be important. Furthermore, it is frequently associated with a sense of powerlessness, as well as sensations of shrinking, feeling small, being exposed, and wanting to disappear (Dearing & Tangney, in press).

Shame as masculine gender-role socialization. Using the analytic perspective of shame, a response to a violation or attack to the ego can be plugged into the script of masculine gender-role socialization. Kindlon and Thompson (2000) suggested that shame, anger, and sadness can become the most commonly felt, yet least regulated, emotions in boys' lives. As mentioned before, the strong walls of the "Act Like a Man Box" (Kivel, 2010) have established robust gender role norms where young men learn to fear tender or vulnerable emotional states emphasizing emotional restrictiveness and stoicism all-the-while they are monitored by the use of these emotions to encourage masculine norm adoption (Jakupcak et al., 2005). It is these attacks on the ego in which men's masculine identity is wrapped up with an aversion to experience shame, and in return lowers their ability to negotiate psychological distress and vulnerable emotions that promote understanding, sympathy, and self-kindness (Sabatino, 1999).

Although men are socialized to distance themselves from emotion, they may initially feel shame in response to a particular interpersonal event. It has the potential to pervade the self, "embracing our worth, our adequacy and our very dignity as human beings ... leaving us feeling naked, defeated, and intensely alone" (Shepard & Rabinowitz, 2013, p. 451). This is adaptive for the masculine identity that values stoicism. Thus, this cycle of distancing oneself from emotion has become adaptive to alleviate the gender-role strain and the policing, explicitly and implicitly, of masculinity.

Masculinity, Shame and Biology

Gender differences. There has been a growing amount of research aiming to differentiate the male brain from the female brain. This research has many different goals and agendas. However, from a comprehensive study looking at gendered discourse Kimura (2002)

concluded, "the degree of difference [in gendered discourse] has not changed over four decades despite substantial changes in women's roles and access to higher education," (p. 341). It is believed, from early on in brain development, that women and men are primarily similar, with salient variances only accounting for a small amount of normal behavior differences. Early sex-related individual differences begin to account for differences between male and female brains through the mediating and moderating effects of socialization on sex hormone-influenced or early gene expression in behavioral development. Case and Oetama-Paul (2015) explain a cause and effect interaction in which testosterone influences the brain and provides a slight advantage on spatial tasks such as block playing; males look for opportunities to engage in activities that further build upon this natural propensity. As this further develops, an initially small difference between men and women grows larger. Brain changes result from different life experiences and genetic propensities that influence future behavior, further impacting brain development. Case and Oetame-Paul (2015) point out that this circular pattern is depicted in a biopsychosocial model where nature and nurture are continuous and inseparable.

Corpus callosum. From this circular pattern of hormones affecting behavior and behavior affecting environmental responses that, in turn, affect how the brain develops further, we begin to see greater differences between the female and male brains. One of the greatest gender differences in the brain is in the development of the corpus callosum, a dense band of neural fibers running down the center of the brain connecting right and left hemispheres (Case & Oetama-Paul, 2015). Case and Oetama-Paul did not find significant differences in the size of the corpus callosum between genders, but rather found connectivity differences within the corpus callosum accounting for significant differences between genders. For example, the two sides of

women's brain have a larger number of connections allowing more information to exchange and communication between the hemispheres (Case & Oetama-Paul, 2015). This is largely due to a slightly larger callosal splenium, in the back third of the corpus callosum. The larger splenium appears to improve communication between hemispheres specifically in language processing and increasing social sensitivity. A larger corpus callosum is also important for faster information transfer and better organization for using both hemispheres in cognition as well as relationship building and connecting (Case & Oetama-Paul, 2015).

Interhemispheric transfer studies have shown that men tend to have a strong right-hemispheric dominance and longer transfer times for information to travel from the right to the left hemisphere (Godard, Leleu, Rebai, &Fiori, 2013). This difference in whole brain processing is specifically important for an understanding of negative emotions, such as shame, and emotional regulation associated with left-hemisphere activation. Thus, regulation of negative emotion would require interhemispheric communication (Rempala, 2011) and may be more difficult for men especially those adhering to more traditional masculine gender-role norms where emotional processing is further distanced from acceptable behavior.

Shame in the Brain

Emotion processing is a complex system requiring connections from many areas of the brain. Of this complex system, the hypothalamus, hippocampus, and amygdala, play a highly specialized role in processing the entire spectrum of human emotion. The amygdala, in particular, processes raw input from the visual stream before it reaches the visual cortex and consciousness (Pegna, Khateb, Lazeyras, & Seghier, 2005) and is larger in men than women (Case & Oetama-Paul, 2015). Thanks to functional magnetic resonance imaging (fMRI) studies

research has found that shame/guilt compared with neutral conditions activation was similarly associated with activity in the left medial fusiform gyrus (FG) extending to the anterior cingulate cortex and with activity in the superior and middle FG as well as the precentral gyrus, all belonging to the dorsal lateral prefrontal cortex (DLPFC), bilateral dorsomedial prefrontal cortex, insula, and ventral striatum, along with the amygdala are specifically activated in response to shame (Roth et al., 2014). Activation in these areas was differentiated from activation of brain areas when a guilt or sadness response was elicited (Michl et al., 2014). Michl et al. also found that a majority of the activation in shame responses was within the right hemisphere.

Heart Response

Through numerous studies on PTSD, we continue to learn more about emotions and their effect on the brain and the effects they have on the body. As a result of this research we understand that emotions guide our decisions (Damasio, 2003), provide a substrate for social interaction (Keltner & Kring, 1998), and facilitate responses to challenge (Tooby & Cosmides, 1990). As emotions provide insight into our responses to situational context as they unfold, they are more likely to facilitate adaptive responses physically. Thus the capacity to regulate emotion and physical responses is vital to social functioning (Eisenberg, 2011).

HRV is the measure of variability between heart rate intervals. HRV provides measures of both the excitatory sympathetic nervous system (SNS) and inhibitory parasympathetic nervous system (PNS; Bernston, Quigley, & Lozano, 2007). During physical or psychological stress, activity of the PNS becomes more dominant to aid in adapting/coping with the perceived challenge. The balancing between these two systems allows for quick generation or modulation

of physiological and emotional states in response to situational demands. This adjusting and balancing act back-and-forth between the sympathetic and parasympathetic systems affects the length of time between consecutive heartbeats, creating variability. As Appelhans and Luecken (2006) explain, "an increase in heart rate could arise from increased sympathetic activity or decreased parasympathetic inhibition (vagal withdrawal)" (p. 230). The amount of variability reflects the degree to which the physiological and emotional systems are adapting to meet changing situational demands and stress.

Porges et al. (2007; as cited by Scott & Weems 2014), suggests that individuals with emotional and behavioral problems have difficulty regulating emotional states during stressful events (i.e., change in vagal tone from rest to stress will predict emotional problems). Their research provided empirical support for using resting vagal tone as an indicator of one's actual ability to regulate emotional states. In addition to resting vagal tone, Porges et al. (2007) postulated that vagal withdrawal (or suppression) during times of stress (i.e., decrease in vagal tone from a resting baseline to a stressful event) may be an adaptive response that helps one's biological system to adequately prepare for a challenging or stressful situation (i.e., increased arousal). Blunted vagal withdrawal or perhaps even an increase in vagal tone during stressful events may represent a maladaptive response associated with poor outcomes (e.g., anxiety or aggression) (Scott & Weems, 2014).

The Present Study

Reilly et al. (2014) state in their research on men's self-compassion, that more research is needed on the informal coping methods men may utilize to manage emotional distress. This study intends to answer the question of how men process shame in the brain and autonomic

nervous system (specifically heart) and how adherence of masculine gender-norms affects that processing using a repeated measures factorial design. The independent variables include level of adherence to traditional masculine gender-norms and the TCTS cards. The dependent variables include responses to shame stimuli and neurophysiological measurements of the EEG (10 channels), ECG (RMSSD square root of the mean square of the standard deviation of R to R intervals) and EDA (microsiemens). RMSSD allows us to see the levels of vagal withdrawal, equating to participant coping with interpersonal emotional stress, as mediated by the parasympathetic system (Appelhans & Luecken, 2006).

My hypotheses are as follows:

1. Men who adhere to more Traditional Masculine Gender-Norms (TMASC) will have lower scores on the Thurston-Cradock Test of Shame.
2. Men who adhere to a greater level of CMNI will experience a greater level of stress when presented with the TCTS cards resulting in higher EDA/GSR readings.
3. Men who adhere to more traditional masculine gender norms will have higher mean power for the right hemisphere leads than left hemisphere leads.
4. Men with higher scores in traditional masculine gender norms will have greater vagal withdrawal than men with lower adherence to traditional masculinity.

Chapter 2

Method

Study 1

Participants. Male undergraduate students from a private Christian university were invited to participate in the study. All participants were involved on a voluntary basis. A total of 250 students started the survey with a completion rate of 84 % leaving a total of 208 completed surveys. Students were invited to participate in the study through the University Sona System where students find many opportunities to participate in research done on campus. To be included in the study students needed to complete the Sona Systems (a cloud-based subject pool software for universities) questionnaires or via Survey Monkey. IRB approval preceded data collection. Detailed demographic information can be found in Appendix I.

Materials. The Study 1 measures included an informed consent (Appendix A), demographic questionnaire (Appendix B), and the Conformity to Masculine Norms Inventory (Appendix C). The demographic questionnaire asks for information such as name, age, race, sexual orientation, and ethnicity. This information was used to better understand variables that may influence responses to the masculinity.

The Conformity to Masculine Norms Inventory (CMNI; Mahalik et al., 2003) is a 94-item measure answered on a 4-point rating scale (0 = *strongly disagree* to 3 = *strongly agree*) and is designed to measure attitudes, behaviors, and cognitions reflecting both conformity to, and non-conformity to, 11 masculine normative messages (i.e., Winning, Emotional Control, Risk-Taking, Violence, Power Over Women, Dominance, Playboy, Self-Reliance, Primacy of Work,

Disdain for Homosexuals, and Pursuit of Status). The CMNI has internal consistency for men, coefficient alpha of .94 for the total CMNI score. For the Masculinity Norms subscales, alphas ranged from .72 for Pursuit of Status to .91 for Emotional Control (Appendix D). The total CMNI score was significantly positively correlated with all the subscale scores and the subscales correlated in expected directions independently from each other.

Procedures. For Study 1 male students were invited to participate through the university Sona System and via Survey Monkey link sent out to their student email. They were invited to give their name and contact information with the disclaimer that some will be asked to participate in further studies on men's issues, thus their information would not be anonymous but will be confidential. Students that chose to participate were prompted to give this information as the informed consent (Appendix A) and to move forward to complete the online questionnaire. They filled out a brief demographics questionnaire online **(**Appendix B). Finally, they answered the 94 questions of the CMNI (Appendix C) also through the Sona System or via Survey Monkey.

Study 2

Participants. Male participants who completed the questionnaires in Study 1 were considered for Study 2. Two groups were formed from the participants and were invited to participate in the EEG session, those who scored in the upper quadrant (TMASC) and those who scored in the lowest quadrant (NTMASC) of the masculinity scale.

Materials. To measure for shame and stimulate physiological reaction, the Thurston-Cradock Test of Shame (TCTS; Thurston & Cradock, 1998) projective assessment was used. This assessment elicits open-ended responses to ambiguous stimuli using 10 stimulus cards

(Appendix E) for which participants provided stories including a beginning, middle, and end, and characters' thoughts and feelings and events represented in each picture (Thurston & Cradock, 1998). Stories were recorded using a mic and recording software and behavioral observations noted. Participant responses were scored for shame (direct, indirect), shame defenses utilized (deflation, aggression, inflation/contempt), resolution (highly adaptive, adaptive, unresolved/ambivalent, maladaptive, highly maladaptive), and response style to testing (personalization, laughter, word production). Construct validity for the TCTS test was found using the 16PF APQ (Rote, 2002).

Physiological equipment. All physiological measurements were gathered in the neurocognitive lab of the Graduate School of Clinical Psychology, George Fox University during the second phase of the study (Study 2). The equipment included: Electrophysiological Encephalography (EEG), Electrocardiogram (ECG) and Galvanic Skin Response (GSR/EDA Electrodermal Activity). The data were acquired using the Biopac Data acquisition system (http://www.biopac.com/data-acquisition-analysis-system-mp150-system).

A 24-channel electrode cap was worn during the recordings. Readings from 10 of the channels were recorded. These 10 channels included Fp1, Fp2, F3, F4, F7 F8, C3, C4, T7, and T8. These channels were chosen to record best the activity in the brain associated with shame; the bilateral dorsal medial prefrontal cortex (dmPFC), amygdala, insula, and the ventral striatum (Reilly, et al. 2014). Two gold ear-clips are used for reference grounds. Silver GSR electrodes are attached to the second and third finger of the left hand. Electrodes are attached (adhesive) to the right clavicle area and just beneath the left rib area. Electrode gel was pre-applied on the

adhesive of the GSR and ECT electrodes. Electrode gel was applied to the scalp with a blunt syringe.

Acqknowledge software loaded on a PC computer, was used to follow and record the physiological measures. The researcher was seated behind the participant and with a view of the stimulus computer screen on which the visual stimulus was presented to the participant. During the measurement, the researcher completed an event record form (Appendix F) to note when each sequence happened as well as any auditory or visual interruptions.

SuperLab software was used to program the visual stimulus presented to the participants. The visual stimulus included in sequence: an initial screen with instructions for the participant to prepare to rest, a rest screen (image of a mountain), timed to 180 seconds, an instruction screen prompting the participant to think of a story that has a beginning middle and end and imagine what each character is thinking and feeling upon seeing the following image, then the 10 TCTS cards were presented in order 1-10. Each card was presented through SuperLab for amount of the time needed for each participant to share their projected story.

Kubios software (https://www.kubios.com) was used to analyze the ECG data. This data will be used to assess for changes in heart rate variability.

The projected stories were recorded using a USB voice microphone and later transcribed. Each story was saved using a coding system to protect participant confidentiality. The file to where the documents were saved was encrypted and password protected on the computer that is also password protected.

Procedure. Participants who responded to the first stage of the study were separated into quartiles used their responses to the CMNI entered into SPSS. Men whose scores placed them in

either the top or bottom quartiles were invited to come and participate in the second part of the study in the EEG lab. Upon arrival in the lab the students were given the second informed consent (Appendix G). The student spent about 45-60 minutes in the lab completing the TCTS while EEG, EDA/GSR and ECG are recorded. During the neurophysiological measure, the students experienced a cycle of rest (A), prompt (B), stimulus (C), stop EEG, and rest (D).

The stimuli were presented on a computer screen using Superlab software. The student was seated in a comfortable chair facing the computer screen, approximately 250cm from the screen. During the stimulus cycles (B and C), the students viewed the TCTS 10 cards and were prompted to *think* of a story that has a beginning middle and end, and what each character is thinking and feeling for 30 seconds. The EEG reading began after the prompt when the card is presented and ended after 30 seconds. The movement of the vocal cords and jaw would interfere with the EEG recordings, thus the reason for the 30 seconds of thinking. Next they were asked to share the story audibly. The story was recorded. This cycle of prompt, card, record, and response was repeated for all 10 cards. This measurement session provided data points of mean power of 10 brain channels, beats per minute of heart rate, and microsiemens (sweat) from skin.

Responses to the TCTS were coded, removing any identifying information and a master list was kept separate and secured. The TCTS was transcribed and scored by trained confederates within the Graduate School of Clinical Psychology. Confederates were trained by the researcher and received valuable assessment experience and trackable hours in their education for their time.

Confidentiality was maintained by meeting the participant in the neurocognitive lab of the graduate department for the physiological measures. The data from the recordings were kept

on two password protected computers and a password protected flash drive within a locked lab room. All participants were given an ID code that was used for all folders on the computers with data and all questionnaires. Participants were debriefed at the EEG reading session and told that the general results will be emailed to them at the completion of study along with an explanation of the study if they so wish. A final email will go out to all participants from Study 1, who gave their email through Sona Systems, about the general results of the study.

Chapter 3

Results

Study 1

CMNI responses were gathered via survey monkey with 235 individual responses received and 202 usable. The distribution of total scores was multimodal (See Appendix H) with a $M = 125.29$ and median = 124.0 ($SD = 21.42$). The final full group was representative of the larger student population at this university. The respondents were all men who were single; 83% white, 17% men of color, age range 18-29 years old. See Appendix I for details.

The effect of ethnicity on masculinity scores was evaluated with the participants of color only, $F(3,31) = 1.207$, $p > .05$). See Figure 1 for group means. There was no difference in CMNI means based upon ethnicity/racial groups.

An independent t-test was used to evaluate the CMNI scores between the two masculinity groups. A significant difference was found, $t(103) = 22.920$, $p < .0001$. The men scoring higher on the CMNI had significantly higher mean scores ($M = 151.86$) than the men scoring in the lower quartile ($M = 99.3$).

Additional analyses. The sample clustered into two of the ages groups (18-20 and 21-29). To examine masculinity score differences between age groups, an independent t-test was used with total CMNI score as the DVs ; $t(199) = 1.127$, $p > .05$). There was no difference in the total CMNI score based on age group.

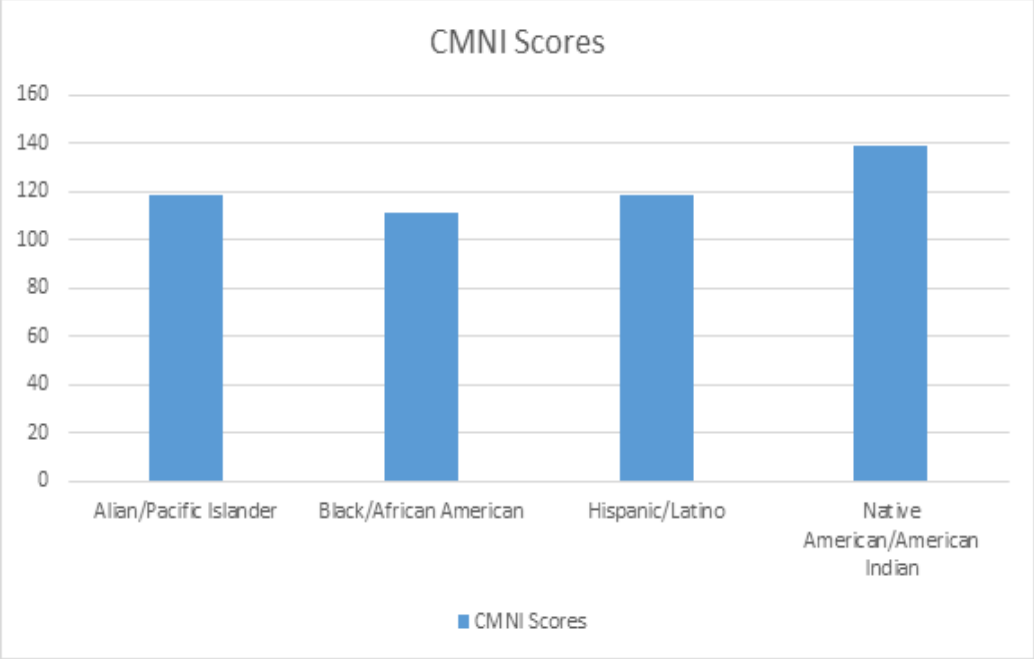

Figure 1. CMNI Mean Scores by Racial Groups. This graph depicts the CMNI mean scores for men of color based upon racial groups by which each participate self-identified.

Participants were distributed across the four levels of college (first-year through senior year). A 1-WAY ANOVA was used to examine any CMNI total score differences based upon year in college, $F(3,195) = 1.97$, $p > .05$). Mean CMNI scores were in close proximity to one-another: First-year $M = 129.2$, Sophomore $M = 124.05$, Junior $M = 119.14$, and Senior $M = 126.5$. There was no significant difference between groups but it was noted that this sample CMNI scores fell below the norms reported in the CMNI manual.

Study 2

Using the total CMNI scores, quartiles were calculated. Men whose scores fell into the highest total CMNI score (TMASC) or lowest (NTMASC) quartile (as calculated using SPSS)

were invited via email to participate in an EEG study. This resulted in two groups of 52 participants in each quartile, labeled; the lower masculinity group (NTMASC) and high masculinity (TMASC) group. All 52 were invited at least once and several multiple times. The NTMASC groups (n = 13) mean score on the CMNI was 99.3 (SD = 11.6) while the TMASC (n = 11) group's mean score was 152 (SD = 11.9; See Appendix I).

TCTS

An independent t-test was used to analyze data for the first hypothesis: men who adhere to more Traditional Masculine Gender-Norms (TMASC) will have lower scores on the Thurston-Cradock Test of Shame. There was no significant difference between the NTMASC and TMASC groups on the total scores on the TCTS cards, $t(21) = .063$, $p > .05$ (TMASC M = 51.45, SD = 7.26; NTMASC M = 51.25, SD = 8.32). To understand this further I looked at the different shame responses between groups (TMASC/NTMASC) across all 12 phases (2 rests and 10 cards) for a baseline difference between groups on the interaction with the cards. A 3x2 Independent Chi-square (See Appendix J) using expected counts as determined by N was used to examine the variables of the NTMASC and TMASC groups and the three possible responses scored for the shame score (0: *no shame*, 1: *indirect*, 2: *direct shame*). Of the 10 cards, only Card 7 (Office Cooler) reached significance, $\chi 2$ (n = 23) = 5.84, $p < .05$, showing the TMASC group, who primarily responded with no shame coded responses, was significantly different than the NTMASC group who predominantly responded with responses coded as indirect shame.

To test the second hypothesis, men who adhere to a greater level of CMNI will experience a greater level of stress when presented with the TCTS cards resulting in higher EDA/GSR readings, I planned to analyze the EDA/GSR data utilizing a MANOVA to compare

across all 10 cards. However, during administration there was an equipment error and not all EDA/GSR results were collected accurately. Therefore, to assess for physiological responses to the TCTS, changes in heart rate were assess and calculated. To accommodate for this change, hypothesis 4 was added in order to more effectively articulate the anticipated response difference and is discussed below.

EEG

The third hypothesis takes a more physiological look at potential differences between the two groups of men and how adherence to more traditional masculine gender norms may affect differences in cognitive processes. Given the literature review, it was hypothesized that men who adhere to more traditional masculine gender norms will have higher mean power for the right hemisphere leads than left hemisphere leads. To do this, multiple MANOVA's were used to evaluate the intersecting variables including, masculinity adherence, card with mean power of brain regions from the EEG. The results were grouped by corresponding right and left hemisphere electrodes.

FP1/FP2. Beginning with the prefrontal cortex, no main effect was found for hemisphere: $F(1,189) = 3.239$, $p = .086$, $\eta 2 = .134$. There is no three way interaction (Figure 2) between hemisphere, cards, and masculine adherence: $F(9,189) = .334$, $p > .05$ but we begin to see a pattern in responses that will appear elsewhere.

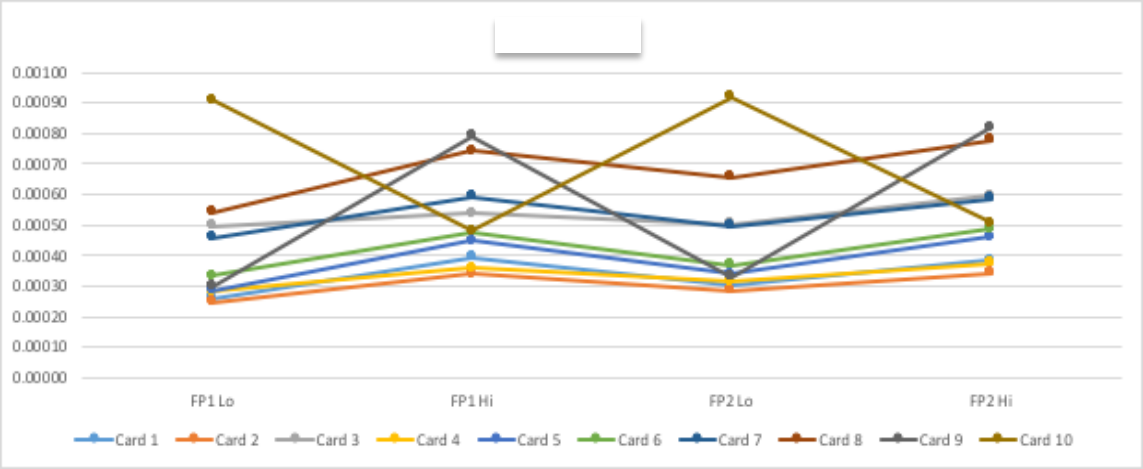

Figure 2. FP1/FP2 3-Way Interaction. This graph depicts the mean powers between the TMASC (Hi) and NTMASC (Lo) groups for electrodes FP1 and FP2 across each of the 10 TCTS cards.

There is a no main effect for cards but there is a large effect size: $F(9, 189) = 2.157$, $p = .101$, $\eta^2 = .599$ indicating the cards had an effect on mean power for the prefrontal cortex. The highest mean power for FP1 was on Card #10 ($M = .000705$), while the lowest mean power for FP1 was on Card #2 ($M = .0002925$) (See Figure 2). This indicated the left frontal pole (left prefrontal medial cortex) was most activated when the person was viewing Card 10. This result is across masculinity groups.

Figure 2 depicts the mean power per card for FP1 and FP2 by Low and High Masculinity groups. It shows that Card 10 has the most variability with the NTMASC men having the strongest response with both left and right frontal poles and high TMASC men having the lowest response. Also, Card 2 has the lowest response across both groups. Lastly, notable from the graph it is evident that Card 3 also has an opposite response between TMASC/NTMASC groups.

F3/F4. Channels F3 and F4 are slightly more lateral and dorsal. They are typically located above the middle frontal gyrus. There was no main effect for hemisphere $F(1,189) = 2.757$, $p > .05$. The mean across cards for F3 was .00024128 and for F4 .00018246. However, there is a main effect (trend) for cards: $F(9, 189) = 2.364$, $p = .077$, $\eta^2 = .62$ with a large effect size. Figure 3 shows how the combined F3/F4 mean power across groups increases as the cards are shown to the participant with an unusual increase in mean power for Card 3.

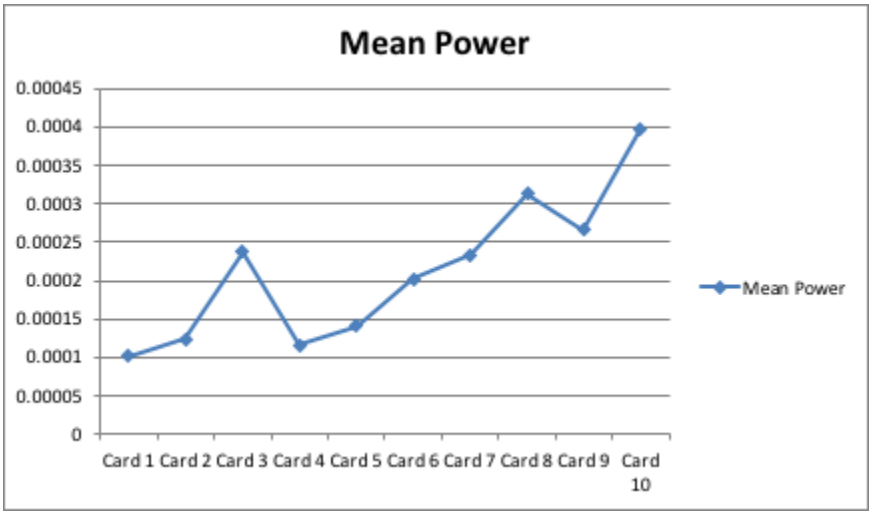

Figure 3. F3/F4 Mean Power by Cards. This graph depicts the combined mean powers for electrodes F3 and F4 across each of the 10 TCTS cards.

Taking a closer look, there was a significant interaction between hemisphere (Figure 4) and card for F3 and F4: $F(9, 189) = 5.886$, $p = .002$, $\eta^2 = .80$ with a large effect size.

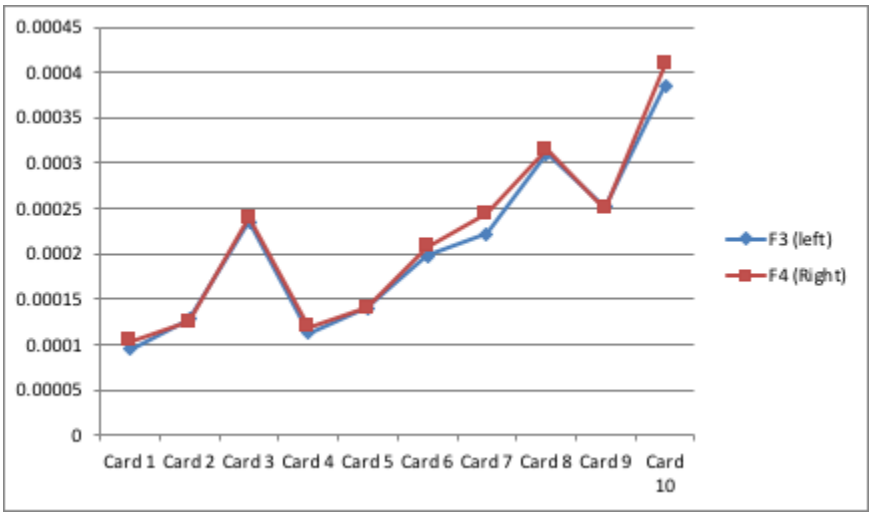

Figure 4. F3/F4 Hemisphere Mean power by Cards. This graph depicts the mean powers between the hemispheres for electrodes F3 and F4 across each of the 10 TCTS cards.

Adding in masculinity groups, the effect size becomes even larger for the 3-way interaction (Figure 5) between hemisphere, cards and masculinity although this is not a significant difference: $F(9, 189) = 2.051$, $p=.116$, $\eta^2 = 587$.

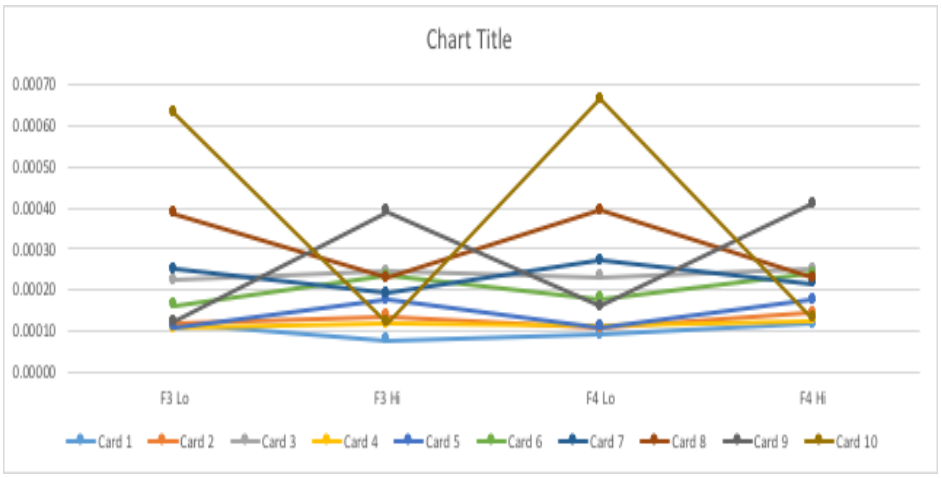

Figure 5. F3/F4 3-Way Interaction. This graph depicts the mean powers between the TMASC (Hi) and NTMASC (Lo) groups for electrodes F3 and F4 across each of the 10 TCTS cards.

Figure 6 below shows the cards where the lateral, left (F3) and right (F4), move together across all ten cards, separated by the TMASC and NTMASC groups. The greatest differences are for Cards 9 and 10 for which the two groups show opposite mean powers suggesting differing excitatory and inhibitory activity. For Card 9, those in the TMASC group had higher power for both left and right than those in the NTMASC group. This result drastically switches for Card 10. Lastly, the NTMASC group on Card 8 has a pronounced right/left hemisphere difference, which did not appear on any other card for these leads.

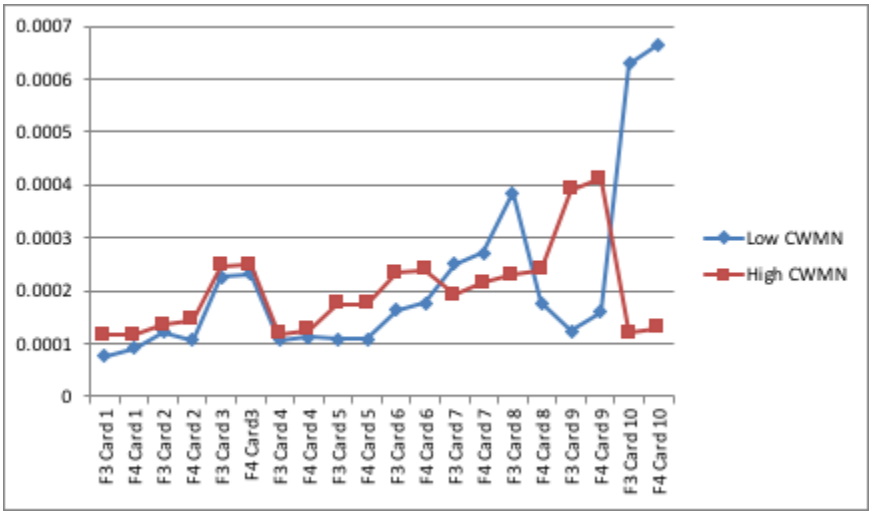

Figure 6. F3/F4 Mean Power by Card and Groups. This graph depicts the mean powers between the hemispheres and TMASC (High) and NTMASC (Low) for electrodes F3 and F4 across each of the 10 TCTS cards.

C3/C4. The location for channels C3 and C4 are found slightly more dorsal and central. These channels collect information from the central sulcus and sensory processing area as well. For these channels there is no significant difference for cards, hemispheres or our TMASC and NTMASC groups. Moderate effect sizes were found for a main effect for cards and interactions

between cards and groups as well as hemispheres and groups. None of these were statistically significant. I determined that these could be explained by the 3-way interaction with cards by hemisphere by groups (Figure 7) which shows a moderate effect size, $F(9, 189) = .897$, $p = .554$, $\eta^2 = .383$.

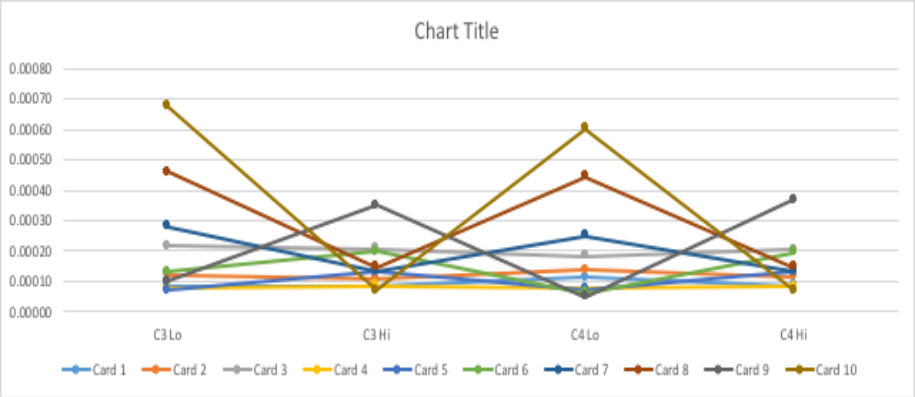

Figure 7. C3/C4 3-Way Interaction. This graph depicts the mean powers between the TMASC (Hi) and NTMASC (Lo) groups for electrodes F3 and F4 across each of the 10 TCTS cards.

As evident in Figure 8, there are differences between TMASC/NTMASC groups on Cards 7-10. This pattern is similar to reactions seen on electrodes F3 and F4.

F7/F8. Electrodes F7 and F8 are located along the temporal regions of the frontal lobe. Typically they are important impulse control sites, with F8 in particularly helping with emotional regulation and social inhibition. The MANOVA for the mean power across both of these electrodes resulted in a large effect size for card: $F(9, 189) = 1.554$, $p = .228$, $\eta^2 = .518$. As previously seen, in Figure 9, it is evident that mean power across hemispheres and across TMASC/NTMASC groups increases as the participant goes through the 10 cards on lateral

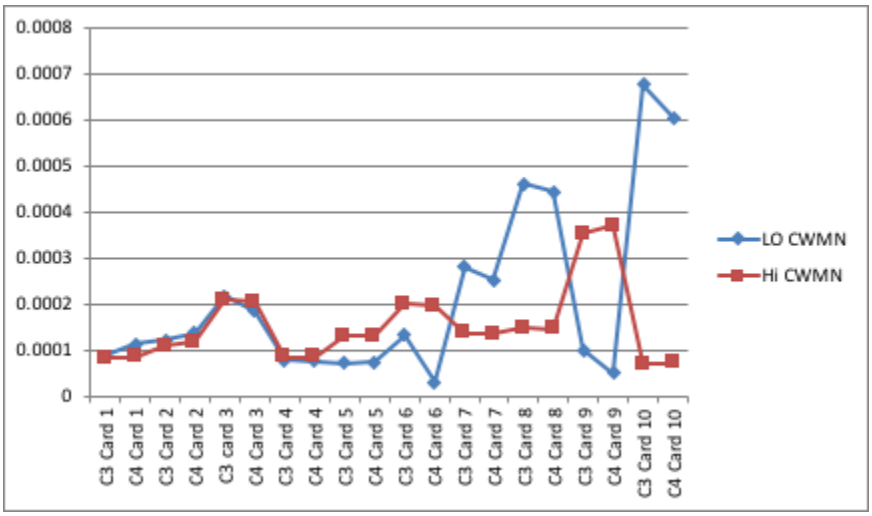

Figure 8. Mean Power by Card and Groups. This graph depicts the mean powers between the hemispheres and TMASC (Hi) and NTMASC (Lo) for electrodes C3 and C4 across each of the 10 TCTS cards.

posterior frontal lobes. Again, it appears that Card 3 evokes more of a response for the early cards, while Card 8, 9, and 10 evoke higher levels of power from these frontal areas.

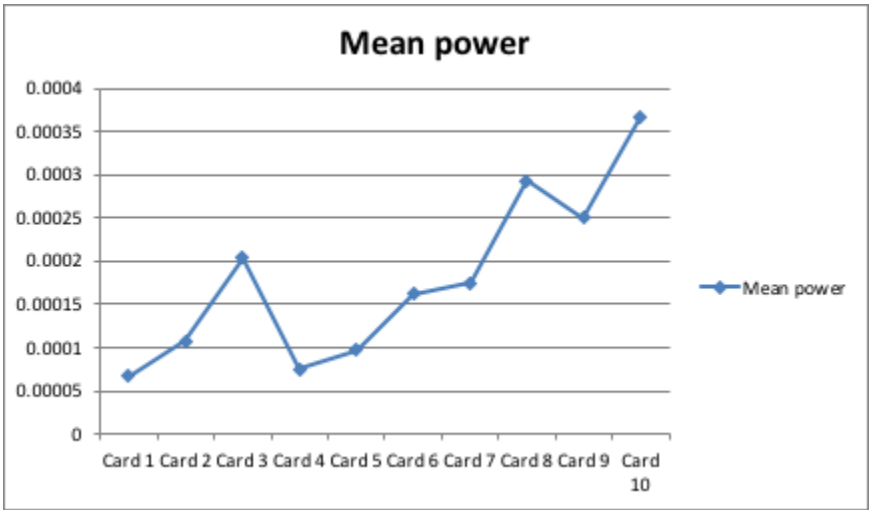

Figure 9. F7/F8 Mean Power by Card. This graph depicts the combined mean powers for electrodes F7 and F8 across each of the 10 TCTS cards.

Figure 10 shows the hemispheres by card interaction. There is a large effect size interaction, $F(9, 189) = 1.553$, $p = .228$, $\eta^2 = .518$.

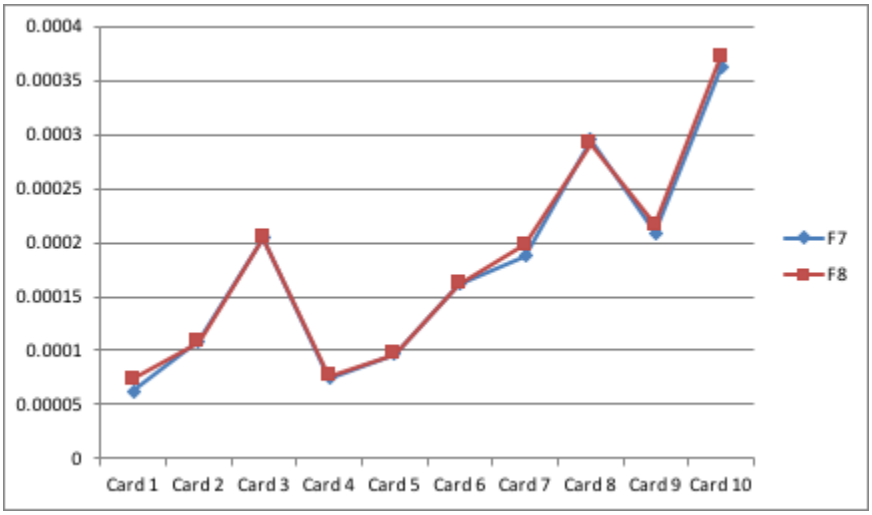

Figure 10. F7/F8 Mean power by Card. This graph depicts the mean powers between the hemispheres for electrodes F7 (left) and F8 (right) across each of the 10 TCTS cards.

I found a moderate effect size for the 3-way interaction of hemisphere by cards by TMASC/NTMASC groups, $F(9, 189) = .768$, $p = .648$, $\eta^2 = .347$. While this is only a moderate effect size, the variability between the TMASC/NTMASC groups continue the trend from previous electrode leads as Cards, 7, 8, 9, and 10 continue to show stark differences in neurological activity between the TMASC/NTMASC groups. Unique to these outputs is the difference in mean power across hemispheres that the NTMASC group emits on Card 7 and Card 10. It is on these leads that the NTMASC group shows a strong right hemisphere dominance. This high of a hemisphere mean power was not recorded on any other leads or cards. See Figure 11

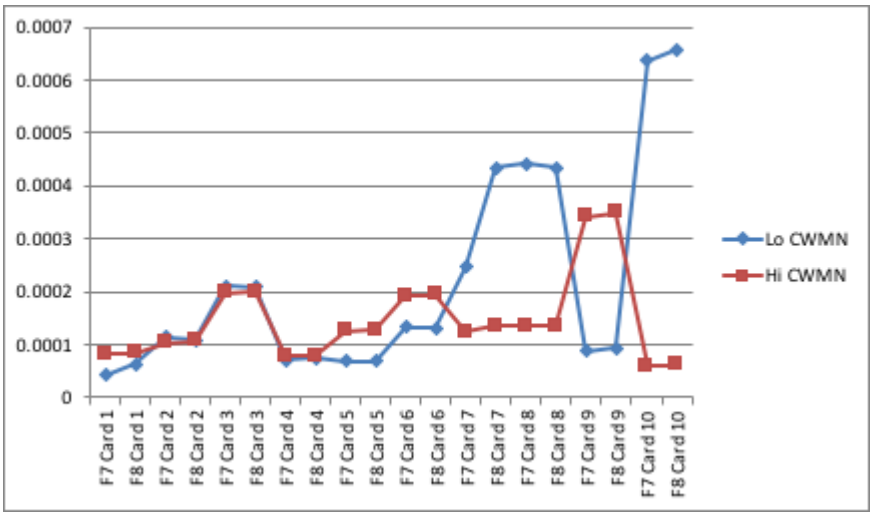

Figure 11. F7/F8 Mean Power by Card and Hemisphere. This graph depicts the mean powers between the hemispheres and TMASC (Hi) and NTMASC (Lo) for electrodes F7 and F8 across each of the 10 TCTS cards.

T3/T4. Leads T3/T4 fall on the most temporal poles of the left and right hemispheres, located just above each ear and the closest we can get to recording activity in the amygdala and hippocampus, the main emotional and memory structures inside the temporal lobes on each side. They handle different functions: the left side handles declarative memory, the narrative of what happened, and right side handles feelings associated with how one felt about what happened (Reilly et al., 2014). A moderate effect sizes were found for the main effect for Cards, $F(9, 189) = 1.050$, $p = .454$, $\eta^2 = .421$. Moderate effect sizes also occurred for the interaction of Cards by TMASC/NTMASC groups, $F(9, 189) = 875$, $p = .569$, $\eta^2 = .377$. Lastly, moderate effect sizes were found for the interaction hemisphere by cards, $F(9, 189) = 1.262$, $p = .341$, $\eta^2 = .466$.

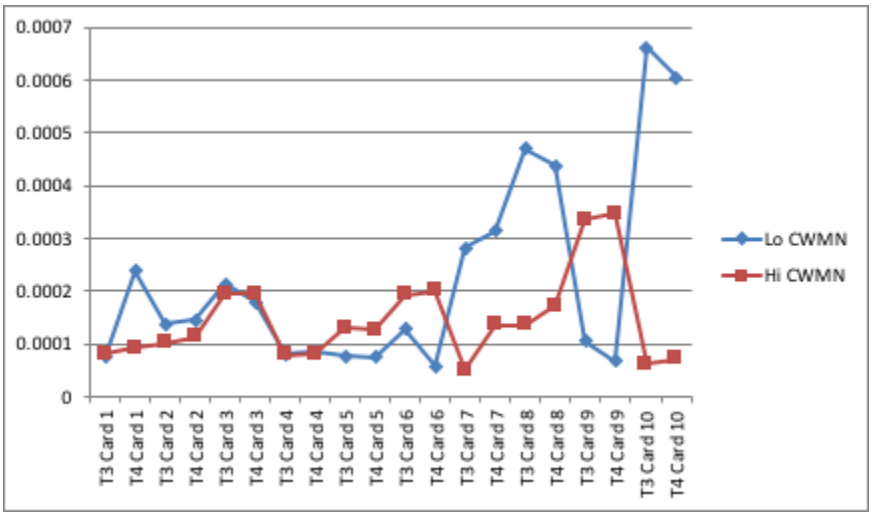

Figure 12. T3/T4 Mean Power by Card and Hemisphere. This graph depicts the mean powers between the hemispheres and TMASC (Hi) and NTMASC (Lo) for electrodes T3 and T4 across each of the 10 TCTS cards.

There is a significant 3-way interaction (Figure 13) with a moderate effect size for cards by hemisphere by groups, $F(9, 189)$, = .955, p = .514, η^2 = .398. It is in these regions that we see the strongest difference between the TMASC and NTMASC groups. While the hemispheres remain close per card (except on Card 1 for the NTMASC group), between cards we see Cards 7, 8, 9 and 10 show different mean power between the TMASC and NTMASC groups. The low group appear to be more reactive overall than the high group.

Hypothesis 3 was not supported. There appears to be a bilateral response to shame rather unilateral. It appears that when there is a an excitatory or inhibitory response, it is seen in both hemispheres rather than more right hemisphere.

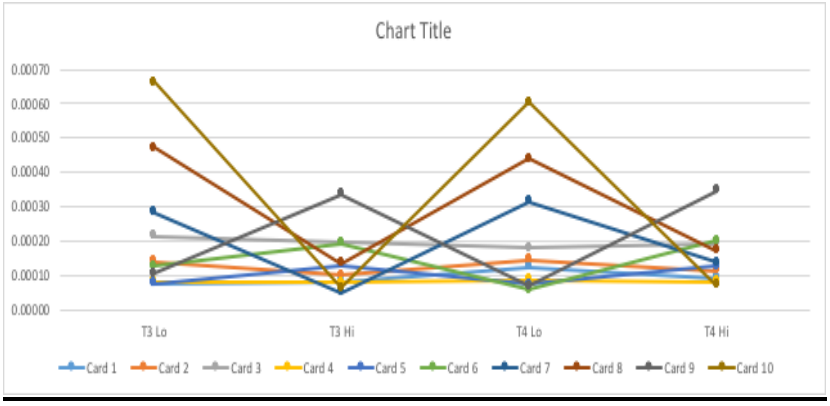

Figure 13. T3/T4 3-Way Interaction. This graph depicts the mean powers between the TMASC (Hi) and NTMASC (Lo) groups for electrodes T3 and T4 across each of the 10 TCTS cards.

Heart Rate Variability

Laborde, Mosley and Thayer (2017) describe the various ways of measuring and calculating HRV. The present study meets the baseline recording recommendations from the authors while also consisting of ten 30 sec heart-rate recordings per participant. Given these parameters and short recording periods, the authors recommend calculating the Root Mean square of the successive differences (RMSSD) which bests reflects vagal tone and is preferred to other HRV calculations as a 10 second ECG reading was found to have a valid RMSSD measurement for calculating HRV. RMSSD was calculated from the original Acknowledge files loaded into Kubios software which calculated RMSSD per each rest recording (2) and all ten cards of the TCTS.

Heart rate variability (HRV) was analyzed to assess each participant's stress activation and level of physiological coping to each TCTS card in order to test the fourth hypothesis. HRV provides a different way to view how respondents are experiencing the Shame cards. The changes in heart rate can provide a more accurate depiction of the stress experienced as it relates

to fight or flight changes compared to GSR arousal that is broad in nature. Given the recommendations previously described (Laborde et al., 2017), analysis of the RMSSD (square root of the standard deviation of the R-R interval) was used to test the second hypothesis.

A Mixed ANOVA with repeated measures factors and between subject factors was utilized to evaluate the participants' stress reaction to the shame stimulus. Due to unequal variances (Mauchley's Test of Sphericity) a more conservative formula was used (Huynh-Feldt) for interpretation. A main effect was found for Cards, F, (5.657,118.795) = 2.367, p = .037, η^2 = .101 (moderate effect size). The highest RMSSD (vagal tone) is for Card 2 (M = 64.72) compared to the lowest RMSSD (vagal withdrawal) for Card 7 (M = 42.9856). A main effect for masculinity groups was not significant though, $F(1,21) = .923$, $p > .05$, $\eta^2 = .042$.

Since there were no significant differences between how men in the two groups verbally responded to the cards, I looked closer at how the groups interacted with identifying projected shame in the cards influenced autonomic stress responses. To do this, a 2-way ANOVA was calculated for each card. Significant results were found for Card 1 and Card 5, and a large effect size found with Card 10. On Card 1 (female looking in the mirror), there was an interaction between high and low masculinity and Shame (present or not present), $F(1,18) = 4.88$, p = .04, η^2 = .213). Card 5 produced a main effect for TMASC/NTMASC groups, $F(1,18) = 5.22$, ; p = .035, η^2 = .225 and an interaction between TMASC/NTMASC groups and shame, $F(1,18) = 3.981$, p = .061, η^2 = .181. The mean for the NTMASC and shame RMSSD M = 37.57, compared to the mean for the TMASC and shame RMSSD M = 133.25.

On Card 10, the interaction between TMASC/NTMASC groups and shame for Card 10 RMSSD is not significant, $F(2,17) = 2.798$, $p = .089$, $\eta^2 = .248$. However this effect size is moderate.

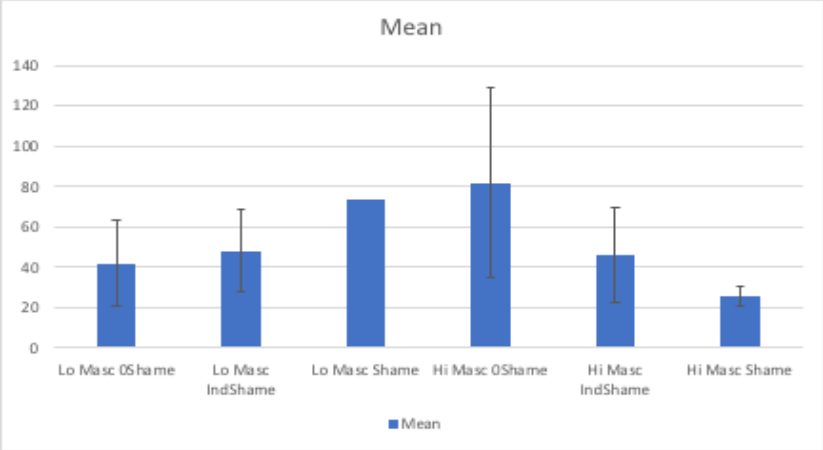

Figure 14. Mean RMSSD Scores for TMASC/NTMASC Shame Responses. Depicts the mean RMSSD scores for TMASC (Hi Masc) and NTMASC (Lo Masc) based on if they provided a shame based responses or not on the TCTS.

Chapter 4

Discussion

Gender roles are deeply ingrained sets of beliefs and values encouraged by the society in which the person is a member. These values, understandings, and core underpinnings of masculinity are deeply ingrained within our culture. Whether or not men adhere to traditional gender roles they still deeply understand, feel, and know the consequences of falling outside the ideals of adhering because of messages such as , "No Sissy Stuff, Be a Big Wheel, Be a Sturdy Oak, and Give Em' Hell" (Kilmartin, 2014). The results of this study are more effectively understood within current and historical social context, and the current socio-political environment of the United States during this time of the 21st century. While the values of traditional masculinity are being challenged and expanding, there has followed a strong push-back towards traditionally held values. The results of this study shine light to this push and pull and speak to the complexity of this construct.

Study 1

Although the sample was majority white, men from this sample were not significantly different in their adherence to masculine norms based on ethnicity or age groups. The sample was young adult men at a time in their lives when they were emerging into adulthood and embarking on possible careers. Their beliefs, values, and behaviors were reflected in several ways in the results of the masculinity scale, CMNI. These beliefs, values, and behaviors did not change based on moving from late adolescences to late twenties, thus experience (e.g., age) alone

does not change CMNI scores. In addition education did not cause a change in adherence to masculine norms. As the men moved through their entrance into college to their final year, the scores were not different.

When the two groups were selected from the opposite poles (top quarter and bottom quarter) there was a significant difference in CMNI scores. The variance of the scores for the sample was great enough that the men in the two groups were found to have very different beliefs, values and behaviors. For example, men in the high masculinity group (TMASC) were more likely to agree with statements such as, "It is best to keep your emotions hidden," "I love it when men are in charge of women," and "I hate it when people ask me to talk about my feelings." Whereas, men in the low masculinity group (NTMASC), were more likely to agree with statements such as, "If there is going to be violence, I find a way to avoid it," "I should take every opportunity to show my feelings," and "I would only have sex if I was in a committed relationship." This demonstrates the possible character differences between these two groups and a range of adherence to traditional masculine gender norms that is still evident within male populations on college campuses. While, there appears to be movement toward acceptance of more non-traditional views of masculinity, it was clear from the CMNI results that there were many men who still adhere to more traditionally masculine gender norms. Anecdotally, when invited to participate in the EEG study, the men in the NTMASC group came after the first and second email invitation. The TMASC group did not come with the invitation, an invitation from a person with power in the university, or when offered $10 to participate. It was not until they were offered $20 for their hour of participation did those in the TMASC group agree to participate.

Study 2

I fully expected that the TCTS Shame scores would differ between the TMASC and NTMASC groups. As they viewed the 10 cards designed to evoke a shame response and told their stories, I expected the content to vary. This did not happen. When I looked at the total scores of the TCTS, there was no difference between the groups. Looking at the verbally offered responses to the cards did not differentiate these groups. This task to project a story onto the stimulus cards appeared difficult for the participants regardless of group. There was inconsistency in the responses and many of the participants required additional prompting to provide a story rather than name what they saw in the image. This appears to be a role of gendered-socialization as it has an impact on men's capacity to verbalize, and utilize their imagination to project onto projective measures (Schultheiss & Brunstein, 2001). This can be one reason why society tends to "lump" men, especially young men, together and apply stereotypes to them. Men in their young adult years are transitioning developmental stages as they seek to develop their own personal identity while they explore more autonomy and intimate relationships. For men, this appears to cause some internal conflict between known ways of being a "man" traditionally, and how they actually feel given more autonomy, or with how they may need to be with an intimate partner. However, these traditional masculine values are deeply rooted from childhood. Traditionally, men do not explore or practice discussing emotions from an early age, thus limiting their abilities to express their feelings. This process is reinforced as they develop into adolescence where, socially, showing emotion is ostracized on the playground, sports field, and battlefield of developing manhood. This limiting of emotional experience, reinforcement of avoidance of emotional expression, and permission for expressions of restricted

anger limit men's ability to engage in emotional content as adults that may be beneficial personally and interpersonally too.

As I investigated their responses and the TCTS scoring closer, it became clear that although the scores ended up being similar, their responses to the different cards varied between groups. There were patterns of naming shame-based emotions or ignoring the shame for the cards that suggested the men were in fact responding differently. TMASC men would give responses indicating no shame to certain cards when the NTMASC men would provide indirect or direct shame responses elicited from the cards. One example is with Card 7 that depicts coworkers at a water cooler with one person left out. TMASC men ignored identifying any shame-based emotions on that card while the NTMASC projected at least indirect shame at the behavior being depicted with the drawing. These patterns led me to wonder how I might better understand if the responses were different between the two groups in "non-cognitive" ways (e.g., heart rate variability, EEG activity, EDA). Through HRV we could see how identifying shame (or not) has a larger physiological impact as we looked closer at the stress response of participants as they engaged the cards.

People respond to stress in a variety of ways. Looking at drawings that are designed to evoke a shame response may lead to experiences of some stress especially for men who are prone to shame-based experiences yet traditionally lack abilities to address emotions in an integrative way. I expected to find that the EDA/GSR would rise during the viewing of cards believed to be demonstrating higher levels of shame (e.g., a swastika painted on a fence). Due to equipment failure, the EDA measures were not available, so I used the RMSSD (HRV) to investigate how the autonomic nervous system responded. RMSSD allows us to "see" the levels

of vagal withdrawal which is indicative of to the participant's level of coping or stress reaction with interpersonal emotional stress, as mediated by the parasympathetic system (Appelhans & Luecken, 2006). As mentioned prior, the inadvertent change of focus from GSR readings to a more sophisticated measurement of the autonomic nervous system proved to be extremely beneficial to the understanding of the men's responses to the shame stimuli (TCTS). I was a little surprised that each card pulled different heart responses. This showed the individual cards, specifically the differences between Card 2 and 7, evoked different stress responses from the participants. As a group, the men were most stressed (sympathetic nervous system was activated) to the card depicting an office scene around the watercooler (Card 7), whereas the card that showed children in classroom with a boy doing a math problem on the board (Card 2) was much less stressful for the men as a group. Also fascinating was that adherence to either the TMASC or the NTMASC group was not more or less stressful. Heart rate variability did not change just because the men were in one of the two CMNI groups. This tells us that it is not necessarily more stressful to be a young man who adheres to traditional masculine group norms any more than it is stressful to be a young man who thinks and believes differently from the traditionally masculine norms.

Though, while RMSSD alone did not show a main effect for masculinity groups, when shame responses were analyzed across groups on the cards there was a significant interaction. This indicates that when NTMASC men named shame in the cards they experienced an increase in vagal withdrawal, a response to stress. On the other hand, the TMASC men, when avoiding shame in their verbal response to the TCTS cards, did not experience heightened stress and exhibited adaptive coping in their vagal tone. This was most evident on Card 7. As mentioned

above, this sheds light to first hypothesis, showing that NTMASC men were more likely to engage in emotional content, however that engagement led to a stressful physiological reaction as they managed what to do with shame content. Card 10 resulted in a very large effect size for vagal tone when compared across groups. This suggests a difference in how the groups responded to the content of Card 10. From a physiological level this illuminates Jakupcak et al.'s (2005) explanation that that men's behavior is highly shame-phobic and policed by shame, causing a strong avoidance of emotions. Despite many men knowing, all too well, the experience of shame, by having their performance of masculinity scrutinized by shame, social norms also limits their expressiveness and contact with emotions. This contact without adaptability with the experience of shame is evident in the NTMASC group's vagal withdrawal, and why the TMASC group perpetuates an avoidance of contact with shame.

As I started this study, I was especially interested in how the brain might react differently between the TMASC and the NTMASC groups. I was not disappointed. EEG mean power values of the amount of electricity produced for right and left hemisphere sites on frontal, temporal and parietal areas tells a very interesting story. The neural networks of men who adhere to traditional masculine norms and those who are low in their adherence to traditional masculine norms respond differently to shame in the brain. There are multiple instances in which the neural activity is inhibitory for one group and excitatory for the other group. The most interesting story comes from the three-way interactions found between CMNI groups, mean power, and cards.

The prefrontal cortexes, both right and left, show varied responses between the groups on Card 10 that shows boys walking by woman with physical disabilities in alley with a dog. The NTMASC men show a bilateral excitatory response while the TMASC men have more of a

bilateral inhibitory response. This card appears to cause more of an emotional response for NTMASC men. Hypotheses can be made about this response. It may be that the TMASC men are "ignoring" the response which was found in the stories in which there was no shame response verbalized. It might also be that the lower mean power in this area is more of a "trauma" response seen also with people experiencing anxiety (Shumway, 2017). It is more likely the emotional areas of the brain are "protecting" the men from experiencing a negative emotion. It might be an intuitive response to think of the NTMASC men experiencing more stress and anxiety because they are "fitting" in with the masculine stereotype. Possibly this is the incorrect interpretation. Maybe, it is more stressful for men who self-report strong beliefs, values, and behaviors in the traditional masculine stereotype to maintain the "role". Thus, something that is so shame inducing must be "ignored" in order to cope.

As the men worked their way through the TCTS cards (all in the same order), I noted a general increase in mean power in the frontal lobes overall. It appears that Card 3, which shows a basketball coach yelling at his player on the sideline, is especially poignant for both groups of men. Mean power continues to increase until they get to the last three cards which tend to elicit the strongest excitatory response. This increase in mean power occurs bilaterally. Could it be that what is happening is an aggregation of stress as each card was presented? It is possible that the accumulation of experiencing shame with the various drawings increased the overall experience of shame for both groups of men. Consistently the NTMASC group had the highest mean power on Card 10. As we evidenced in the RMSSD data, Card 10 produced a large effect size for between the groups of men and here we see the NTMASC group, across the brain and hemispheres, responding the most to Card 10. The NTMASC group's strong responses to Card

10 are split between hemispheres. Thus, as the NTMASC men viewed Card 10, their right frontal lobes were significantly activated suggesting scanning, planning, and identifying how they many respond to the environment in the image. Leads C3 and T3 (left hemisphere), which were significantly activated for NTMASC group on Card 10, illustrating the NTMASC men's self-referential responses as they likely image how they would respond to the environment scanning previous memories and emotions that may be connected to this image.

This is juxtaposed by Card 9 and the TMASC group. On Card 9, the TMASC group responded differently than previous cards, and from the NTMASC group. For a majority of the cards the TMASC and NTMASC groups had similar mean power responses across most leads. Although, beginning on Card 7 through Card 10, we see a larger spread in the mean powers between the groups. For most of these interactions we see the TMASC group with lower mean powers across both hemispheres than the NTMASC group. However, on Card 9 this is significantly reversed. On this card, this TMASC group had the strongest mean power for this group than any other card. The highest mean powers for the TMASC group across all 10 cards in these interactions was consistently in the right hemisphere on Card 9. This shows that the content on this card impacted the TMASC group more so than any other card and more the NTMASC group's mean power responses.

The content of this card is designed to pull for more racially based shame and has the most overt aggression depicting a group of boys who have spray-painted a Jewish family's fence and it appears the son of the family is about to confront them with a shovel in his hand. This content is important to note as the aggression and power dynamics present in the card are more similar to traditional masculine value response (aggression). Thus, this familiarity and overt

content of the card make it more likely for the TMASC group to cognitively respond to the card. But, this jump in cognitive mean power on Card 9 was limited to the right hemispheres across all leads for the TMASC group. This suggests that when viewing Card 9, the TMASC group was identifying the conflict, orienting, and understanding the situation but did not exert the mean power to the right as much in order to emotionally or verbally engage in the content of the card. Lastly, incorporating the RMSSD data to these findings, there was no evidence for any significant change in vagal tone on Card 9 for the TMASC group, indicating a minimal autonomic reaction and a disconnect of cognition and physical response.

Difference between the groups of men start to occur with the medial, posterior areas of the frontal lobe. Here we see the TMASC men showing an increase in mean power as they make their way through the cards but then drops dramatically in mean power at Card 10 (homeless woman). The NTMASC men show a little more variability. They have a right/left hemisphere difference with Card 8, which shows a boy striking out in a baseball game, an inhibitory response with the Card 9 and then a huge mean power burst bilaterally to the last card. This is one of the few times a bilateral split occurred for a card. NTMASC men appear able to experience the shame from seeing a homeless, disable woman. It seems that TMASC and NTMASC mean experience negative emotions differently from one another. A similar mean power pattern was found with the lateral frontal areas with the variations in responses to specific cards between the two groups of men. This is a critical finding. Even though what the men say (their verbal response) is not significantly different their brain activity is telling another story.

The temporal lobe areas also responded with variations between the TMASC and NTMASC groups. These recordings are the closest to recording amygdala activity thus seeing

the opposite response between the groups also gives a hint at how the limbic system of TMASC and NTMASC men might respond differently when stimulated with negative emotions. Not all the cards caused different responses between the groups. When viewing Card 3(Basketball coach yelling at player on the sidelines) both groups of men had relatively equal mean power bilaterally. This type of shame does not appear to induce as much limbic system response as Card 10 (boys walking by woman in alley with dog), Card 8 (boy striking out) and Card 5 (girl playing with cat in paint).

Limitations

The results from this study indicate and reinforce the complexity of studying sociological constructs, biological responses, and dynamic underpinnings in a multimodal research design. The focused study of masculinity is a relatively new area of study that is confounded with an ever changing idea and definition of masculinity in today's current society (Short, 2007). The complexity of understanding masculinity has provided its challenges as it and shame fall on continuums. Also, both the concepts of traditional masculinity and shame encapsulate many differing ideas of how to define these concepts. Trying to measure these qualitative ideas in quantitative ways leaves room for possible alternative interpretations.

First, my sample comes from a small Christian college and may not be fully representative of other male identities from other regions or communities of the U.S. Also, volunteerism is not typically a trait of traditional masculinity, making it difficult to recruit men from the TMASC group to participate in the second part of the study. A step-up process of incentives was utilized to recruit these men. This may have influenced our groups as this again separated men based on values. Traditionally masculine men were less responsive in both their

verbal responses and physiologically as we saw from the results. This may have been strong defenses or a lack of masculinity threat in the TCTS perceived resulting in less activation. Additionally, the TCTS lacks norms and, while each card is designed to elicit shame based responses, each card is unique and shame responses may not be equal across all 10 cards. For example, it appeared that men were more prone to respond with images of other men in the cards or images of conflict, however this was not consistent and some groups responded (either verbally, cognitively, or physiologically) to more shame neutral cards such as the office coworkers around the watercooler.

Successfully recruiting men, coupled with the limitations of time and space of the neuropsychological lab resulted in a small sample size. This limited sample size had a greatest impact on the statistics. There were indications that additional probability differences may have been found with a larger sample size from the large effect sizes found.

Lastly, while utilizing RMSSD was fruitful, this was an unexpected shift due to equipment failure of the GSR recordings. This led to increased research to better understand HRV and vagal tones, a field new to this researcher and his supervisor. The use of HRV and RMSSD is a growing and rather new field of study typically used for heart and training purposes. In those type of studies, RMSSD is typically used in longer duration readings than my research design.

Future Directions

By synthesizing these data we see a very complex interplay between brain (frontal to temporal), physiological response (parasympathetic and sympathetic), and verbalization. Broadly, we see that adherence to traditional masculine gender norms has, and is, adaptive in

avoidance of negative emotional experiences as the TMASC group experienced less stress and overall less cognitive responses during the study. The NTMASC group, however, exhibited some propensity to engage in emotional content, both verbally and cognitively, and experienced more stress by this. This gives light to what researcher, Sabatino (1999), explained from his observations after leading a male sexual offenders group. He concluded that there is a challenge of expanding masculine gender norms from a foundation of traditional masculinity that limits the resources and experience to adequately cope with emotional experiences. The current study provides physiological explanations for this. Therefore, this helps us develop a more accurate understanding that men respond psychologically and emotionally different depending on their views, values, and beliefs about masculinity. This is important clinically, to help clinicians avoid broad assumptions about all male clients, and show that male-identified clients will likely not have the same viewpoint on issues and ideas around masculinity but their verbalizations are not where the emotional experience and stress are likely to be found. Lastly, these results can help us to better appreciate the adaptability and safety that men who continue to subscribe to traditional masculine gender norms likely experience due to the deeply ingrained social constructs of gender roles.

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Appendix A

Sona Systems Informed Consent
Understanding Male Responses

Informed Consent:

Thank you for participating in this survey. Your feedback is important. Please answer the following questions as honestly as possible. These questions concern how males respond different to stimuli.

I do not anticipate that taking this survey will contain any risk or inconvenience. Furthermore, participation is strictly voluntary and you may withdraw my participation at any time without penalty. The approximate total time of your involvement will be 45 minutes in total.

I understand that the responses and information collected will be used only for research and will be kept confidential. There will be no connection to you specifically in the results or in future publication of the results**.**

This study follows the ethical guidelines of the American Psychological Association and has been approved by the George Fox Institutional Review Board. Once the study is completed, I would be happy to share the results with you if you desire. In the meantime, if you have any questions please ask or contact:
Christopher Spromberg at cspromberg14@georgefox.edu

By clicking START SURVEY you are verifying that you have read the explanation of the study, and that you agree to participate. You also understand that your participation in this study is strictly voluntary.

Questions and comments may be addressed to Glena L. Andrews, Ph.D. Graduate Department of Clinical Psychology, George Fox University, 414 N Meridian St. Newberg, OR, 503-554-2386, gandrews@georgefox.edu

Appendix B

Understanding Male Responses
Demographics

Please read the following items and answer as completely as possible.

1. What is your gender? Male Female (circle one)

2. What is your age: _____

3. Ethnicity origin (or Race): Please specify your ethnicity.
   - White
   - Hispanic or Latino
   - Black or African American
   - Native American or American Indian
   - Asian / Pacific Islander
   - Other

4. What is your marital status?
   - Single (never married)
   - Married
   - Separated
   - Widowed
   - Divorced

5. Are you a US citizen?
   - Yes
   - No

6. Are you a native English speaker?
   - Yes
   - No

7. In terms of education and income, would you say your parents are:
   - Upper class
   - Upper-middle class
   - Middle class
   - Lower-middle class
   - Working class
   - Decline to answer

8. Do you have siblings?
   - Yes
   - No

9. If yes (to #8), how many?
   - 1
   - 2
   - 3
   - 4
   - 5
   - 6
   - 7
   - 8+

10. What is your birth order? (i.e., first child, second child, etc.)
    - First
    - Second
    - Third
    - Fourth
    - Fifth
    - Sixth
    - Seventh
    - Eighth

11. Do you consider yourself to be a religious person?
    - Yes
    - No

12. with what religion are you affiliated
    - Nonreligious Secular
    - Agnostic/Atheist
    - Christianity
    - Judaism
    - Islam
    - Buddhism
    - Hinduism Sikhism
    - Unitarian-Universalism
    - Wiccan Pagan Druid
    - Spiritualism
    - Native American
    - Baha'i
    - Not Listed
    - N/A

13. Handedness:
    - Left-handed

- Right-handed
- Ambidextrous

14. Which class/level most closely describes you?
    - Freshman
    - Sophomore
    - Junior
    - Senior
    - Co-Term
    - F. High School Summer Session Student
    - G. Other

Appendix C

Sample Conformity to Masculine Norms Inventory

Instructions: The following pages contain a series of statements about how men might think, feel or behave. The statements are designed to measure attitudes, beliefs, and behaviors associated with both traditional and non-traditional masculine gender roles.

Thinking about your own actions, feelings and beliefs, please indicate how much **you personally agree or disagree with each statement** by circling SD for "Strongly Disagree", D for "Disagree", A for "Agree", or SA for "Strongly agree" to the left of the statement. There are no right or wrong responses to the statements. You should give the responses that most accurately describe your personal actions, feelings and beliefs. It is best if you respond with your first impression when answering.

1.	It is best to keep your emotions hidden	SD	D	A	SA
2.	In general, I will do anything to win	SD	D	A	SA
3.	If I could, I would frequently change sexual partners	SD	D	A	SA
4.	If there is going to be violence, I find a way to avoid it	SD	D	A	SA
5.	I love it when men are in charge of women	SD	D	A	SA
6.	It feels good to be important	SD	D	A	SA
7.	I hate it when people ask me to talk about my feelings	SD	D	A	SA
8.	I try to avoid being perceived as gay	SD	D	A	SA
9.	I hate any kind of risk	SD	D	A	SA
10.	I prefer to stay unemotional	SD	D	A	SA
11.	I make sure people do as I say	SD	D	A	SA

Appendix D

Internal Consistencies and Intercorrelations for Total Score and Subscales of the CMNI

Factor	1	2	3	4	5	6	7	8	9	10	11	a
1. Winning	--											.88
2. Emotional Control	.19**	--										.91
3. Risk-Taking	.32**	.07*	--									.82
4. Violence	.33**	.20**	.36**	--								.84
5. Power Over Women	.33**	.27**	.16**	.35**	--							.87
6. Dominance	.45**	.10**	.24**	.23**	34**	--						.73
7. Playboy	.25**	.30**	.15**	.31**	.49**	22**	--					.88
8. Self-Reliance	.24**	.49**	.06	.17**	.25**	.23**	.20**	--				.85
9. Primacy of Work	.15**	.13**	.03	.01	.15**	.21**	.14**	.13**	--			.76

10. Disdain for Homosexuals	.33**	.19**	.09*	.27**	.42**	.21**	.21**	.12**	.03	--		.90
11. Pursuit of Status	.31**	−.06	.19**	.13**	.09*	.33**	.09*	.05	.10**	.20**	--	.72
Total conformity	.51**	.36**	.29**	.46**	.58**	.46**	.46**	.38**	.18**	.39**	.23**	.94

Note. N = 752. Subscale/total conformity correlations are corrected. *p < .05. **p < .01.

Appendix E

Thurston-Cradock Test of Shame Sample

Card Descriptions

1. Female Looking in the Mirror

2. *Children in Classroom doing math on board (Males highlighted)

3. *Coach & Player interacting on the sidelines (player figure androgynous)

4. Boys walking down bus aisle

5. Girl playing with cat (color)

6. *Child receiving spanking (Male child, female adult)

7. Person walking through doorway into room with others (androgynous figure)

8. *Baseball game (male players)

9. *Family on porch w/gang in yard (color)

10. Boys walking by woman in alley with dog

*Explicit shame content in card

Appendix F

EEG Event Record Form

Initials of Participant: _____ Name of Evaluator: _____

Date: _____

Time:_____

Calibration

Note any abnormalities or technical issues:

Rest 1

Beginning time (seconds) of Acknowledge:_____

End time of Acknowledge:_____

Note any abnormalities or technical issues:

Card 1

Beginning time (seconds) of Acknowledge:_____

End time of Acknowledge:_____

Note any abnormalities or technical issues:

Card 2

Beginning time (seconds) of Acknowledge:_____

End time of Acknowledge:_____

Note any abnormalities or technical issues:

Card 3

Beginning time (seconds) of Acknowledge:_____

End time of Acknowledge:_____

Note any abnormalities or technical issues:

Card 4

Beginning time (seconds) of Acknowledge:_____

End time of Acknowledge:_____

Note any abnormalities or technical issues:

Card 5

Beginning time (seconds) of Acknowledge:_____

End time of Acknowledge:_____

Note any abnormalities or technical issues:

Card 6

Beginning time (seconds) of Acknowledge:_____

End time of Acknowledge:_____

Note any abnormalities or technical issues:

Card 7

Beginning time (seconds) of Acknowledge:_____

End time of Acknowledge:_____

Note any abnormalities or technical issues:

Card 8

Beginning time (seconds) of Acknowledge:_____

End time of Acknowledge:_____

Note any abnormalities or technical issues:

Card 9

Beginning time (seconds) of Acknowledge:_____

End time of Acknowledge:_____

Note any abnormalities or technical issues:

Card 10

Beginning time (seconds) of Acknowledge:_____

End time of Acknowledge:_____

Note any abnormalities or technical issues:

Rest

Beginning time (seconds) of Acknowledge:_____

End time of Acknowledge:_____

Note any abnormalities or technical issues:

Appendix G

Informed Consent
Understanding Male Responses: An EEG Study

I authorize Christopher Spromberg, M.A. of the Graduate Department of Clinical Psychology at George Fox University, Newberg, Oregon, and his designated research assistants to gather information from me on the topic of understanding male responses (EEG, ECG, and GSR/EDA).

I understand that the general purposes of the research is to explore how men respond to stimuli (GSR (skin) and ECG (heart)). I understand that my responses to the TCTS, and EEG, ECG and GSR data will be recorded and confidential. The approximate total time of my involvement will be 1 hour in total. This will be scheduled in ways that will not interfere with course work.

I understand that my permission is voluntary, and that I can discontinue at any time without penalty or loss of benefits to which I am otherwise entitled. I understand that I will be wearing a cap with electrodes and will have electrodes applied to two fingers, my ear lobes, and my shoulder and side with a gentle adhesive gel. I understand I will also wear a chest strap (used to hold the cap on tight).

I understand that if I have questions about the research Glena Andrews, Ph.D. will be available for consultation.

All the data gathered from my recordings and my performance will be kept confidential. No notes will be shared from the mental skills training. Confidentiality of research results will be maintained by the researcher.

_____ _____
Signature of Participant Date

_____
Name

_____
Email

Questions and comments may be addressed to Glena L. Andrews, Ph.D. Graduate Department of Clinical Psychology, George Fox University, 414 N Meridian St. Newberg, OR, 503-554-2386, gandrews@georgefox.edu

Appendix H

CMNI Total Score Frequency Table

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	55.00	1	0.4	0.5	0.5
	71.00	1	0.4	0.5	1.0
	72.00	1	0.4	0.5	1.5
	83.00	1	0.4	0.5	2.0
	85.00	1	0.4	0.5	2.5
	86.00	1	0.4	0.5	3.0
	88.00	1	0.4	0.5	3.5
	89.00	1	0.4	0.5	4.0
	90.00	1	0.4	0.5	4.5
	91.00	1	0.4	0.5	5.0
	92.00	4	1.7	2.0	6.9
	95.00	1	0.4	0.5	7.4

96.00	1	0.4	0.5	7.9
97.00	1	0.4	0.5	8.4
98.00	3	1.2	1.5	9.9
99.00	2	0.8	1.0	10.9
101.00	1	0.4	0.5	11.4
102.00	5	2.1	2.5	13.9
103.00	3	1.2	1.5	15.3
104.00	4	1.7	2.0	17.3
105.00	1	0.4	0.5	17.8
106.00	1	0.4	0.5	18.3
107.00	1	0.4	0.5	18.8
108.00	2	0.8	1.0	19.8
109.00	2	0.8	1.0	20.8
110.00	5	2.1	2.5	23.3
111.00	1	0.4	0.5	23.8
112.00	5	2.1	2.5	26.2

113.00	4	1.7	2.0	28.2
114.00	6	2.5	3.0	31.2
115.00	5	2.1	2.5	33.7
116.00	1	0.4	0.5	34.2
117.00	3	1.2	1.5	35.6
118.00	2	0.8	1.0	36.6
119.00	8	3.3	4.0	40.6
120.00	1	0.4	0.5	41.1
121.00	4	1.7	2.0	43.1
122.00	4	1.7	2.0	45.0
123.00	8	3.3	4.0	49.0
124.00	3	1.2	1.5	50.5
125.00	3	1.2	1.5	52.0
126.00	2	0.8	1.0	53.0
127.00	3	1.2	1.5	54.5
128.00	4	1.7	2.0	56.4

129.00	1	0.4	0.5	56.9
130.00	7	2.9	3.5	60.4
131.00	5	2.1	2.5	62.9
132.00	5	2.1	2.5	65.3
133.00	3	1.2	1.5	66.8
134.00	1	0.4	0.5	67.3
135.00	1	0.4	0.5	67.8
136.00	4	1.7	2.0	69.8
137.00	2	0.8	1.0	70.8
138.00	3	1.2	1.5	72.3
139.00	4	1.7	2.0	74.3
140.00	7	2.9	3.5	77.7
142.00	3	1.2	1.5	79.2
143.00	1	0.4	0.5	79.7
144.00	5	2.1	2.5	82.2
145.00	2	0.8	1.0	83.2

146.00	1	0.4	0.5	83.7
147.00	7	2.9	3.5	87.1
149.00	1	0.4	0.5	87.6
150.00	2	0.8	1.0	88.6
153.00	2	0.8	1.0	89.6
154.00	3	1.2	1.5	91.1
155.00	4	1.7	2.0	93.1
156.00	1	0.4	0.5	93.6
157.00	2	0.8	1.0	94.6
159.00	3	1.2	1.5	96.0
162.00	1	0.4	0.5	96.5
164.00	1	0.4	0.5	97.0
167.00	2	0.8	1.0	98.0
168.00	1	0.4	0.5	98.5
170.00	1	0.4	0.5	99.0
172.00	1	0.4	0.5	99.5

209.00	1	0.4	0.5	100.0
Total	202	83.8	100.0	

A single sample t-test was conducted to determine a significant difference existed

Appendix I

CMNI Response Age-Groups Frequency

	Frequency	Valid Percent
18-20	138	58.7
21-29	96	40.9
30-39	1	0.4
Total	235	100.0

CMNI Demographics Frequency

Ethnicity origin (or Race):

	Frequency	Valid Percent
Asian/ Pacific Islander	18	7.7
Black or African American	6	2.6
Hispanic or Latino	14	6.0
Native American or American Indian	3	1.3
White	187	79.6
Other	7	3.0

Total	235	100.0

What is your marital status?

	Frequency	Valid Percent
Single (never married)	222	94.5
Married	13	5.5
Total	235	100.0

In terms of education and income, would you say your parents are:

	Frequency	Valid Percent
Upper class	6	2.6
Upper-middle class	65	27.7
Middle class	122	51.9
Lower-middle class	28	11.9
Working class	13	5.5
Decline to answer	1	0.4
Total	235	100.0

What is your birth order? (i.e., first child, second child, etc.)

	Frequency	Valid Percent
First	85	36.2
Second	81	34.5
Third	37	15.7
Fourth	17	7.2
Fifth	4	1.7
Sixth	2	0.9
Seventh	2	0.9
Eighth	1	0.4
N/A	6	2.6
Total	235	100.0

Do you have siblings?

	Frequency	Valid Percent
Yes	222	94.5
No	13	5.5
Total	235	100.0

With what religion are you most closely affiliated?

	Frequency	Valid Percent
Nonreligious Secular	6	2.6
Agnostic/Atheist	6	2.6
Christianity	220	93.6
Hinduism	1	0.4
Not Listed	2	0.9
Total	235	100.0

Do you consider yourself a religious person?

	Frequency	Valid Percent
Yes	210	89.4
No	25	10.6
Total	235	100.0

Which class/level most clearly describes you?

	Frequency	Valid Percent
Freshman	74	31.5
Sophomore	46	19.6
Junior	50	21.3
Senior	62	26.4
Co-term	1	0.4
Other	2	0.9
Total	235	100.0

Are you a native English speaker?

	Frequency	Valid Percent
Yes	221	94.0
No	14	6.0
Total	235	100.0

TMASC Group CMNI Scores

TOTAL

N	Valid	52
	Missing	0
Mean		151.8654
Median		148.0000
Mode		140.00[b]
Std. Deviation		11.89831
Skewness		2.382
Std. Error of Skewness		0.330
Kurtosis		9.301
Std. Error of Kurtosis		0.650
Minimum		140.00
Maximum		209.00

NTMASC Group CMNI Scores

TOTAL

N	Valid	53
	Missing	0
Mean		99.3774
Median		102.0000
Mode		102.00[b]
Std. Deviation		11.56790
Skewness		-1.602
Std. Error of Skewness		0.327
Kurtosis		3.490
Std. Error of Kurtosis		0.644
Minimum		55.00
Maximum		112.00

Appendix J

Chi-Squared Tables of High and Low Masculinity and Types of Shame Responses per Card.

			Total Quart		
			Low Masc.	High Masc.	Total
Shame Card 1	0	Count	3	2	5
		Expected Count	2.6	2.4	5.0
	Indirect Shame	Count	6	9	15
		Expected Count	7.8	7.2	15.0
	Direct Shame	Count	3	0	3
		Expected Count	1.6	1.4	3.0
Total			12	11	23
			12.0	11.0	23.0

Chi-Squared Tests

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.764[a]	2	.152
Likelihood Ratio	4.921	2	.085
Linear-by-Linear Association	.533	1	.465
N of Valid Cases	23		

	Total Quart		
	Low Masc.	High Masc.	Total

Shame Card 2	0	Count	1	1	2
		Expected Count	1.0	1.0	2.0
	Indirect Shame	Count	2	4	6
		Expected Count	3.1	2.9	6.0
	Direct Shame	Count	9	6	15
		Expected Count	7.8	7.2	15.0
Total			12	11	23
			12.0	11.0	23.0

Chi-Squared Tests

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.226[a]	2	.542
Likelihood Ratio	1.240	2	.538
Linear-by-Linear Association	.589	1	.443
N of Valid Cases	23		

			Total Quart		
			Low Masc.	High Masc.	Total
Shame Card 3	0	Count	2	5	7
		Expected Count	3.7	3.3	7.0
	Indirect Shame	Count	4	4	8
		Expected Count	4.2	3.8	8.0
	Direct Shame	Count	6	2	8
		Expected Count	4.2	3.8	8.0

Total		12	11	23
		12.0	11.0	23.0

Chi-Squared Tests

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.248[a]	2	.197
Likelihood Ratio	3.378	2	.185
Linear-by-Linear Association	3.3101	1	.078
N of Valid Cases	23		

			Total Quart		
			Low Masc.	High Masc.	Total
Shame Card 4	0	Count	4	6	10
		Expected Count	5.2	4.8	10.0
	Indirect Shame	Count	2	2	4
		Expected Count	2.1	1.9	4.0
	Direct Shame	Count	6	3	9
		Expected Count	4.7	4.3	9.0
Total			12	11	23
			12.0	11.0	23.0

Chi-Squared Tests

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.359[a]	2	.507

Likelihood Ratio	1.379	2	.502
Linear-by-Linear Association	1.286	1	.257
N of Valid Cases	23		

			Total Quart		
			Low Masc.	High Masc.	Total
Shame Card 5	0	Count	9	10	19
		Expected Count	9.9	9.1	19.0
	Indirect Shame	Count	1	1	2
		Expected Count	1.0	1.0	2.0
	Direct Shame	Count	2	0	2
		Expected Count	1.0	1.0	2.0
Total			12	11	23
			12.0	11.0	23.0

Chi-Squared Tests

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.013[a]	2	.366
Likelihood Ratio	2.782	2	.249
Linear-by-Linear Association	1.588	1	.208
N of Valid Cases	23		

			Total Quart		
			Low Masc.	High Masc.	Total

Shame Card 6	0	Count	3	2	5
		Expected Count	2.6	2.4	5.0
	Indirect Shame	Count	7	7	14
		Expected Count	7.3	6.7	14.0
	Direct Shame	Count	2	2	4
		Expected Count	2.6	1.4	4.0
Total			12	11	23
			12.0	11.0	23.0

Chi-Squared Tests

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.493[a]	2	.684
Likelihood Ratio	1.884	2	.597
Linear-by-Linear Association	.000	1	1.000
N of Valid Cases	23		

			Total Quart		
			Low Masc.	High Masc.	Total
Shame Card 7	0	Count	3	8	11
		Expected Count	5.7	5.3	11.0
	Indirect Shame	Count	7	3	10
		Expected Count	5.2	4.8	10.0
	Direct Shame	Count	2	0	2
		Expected Count	1.0	1.0	2.0

Total		12	11	23
		12.0	11.0	23.0

Chi-Squared Tests

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.840[a]	2	.054
Likelihood Ratio	6.733	2	.035
Linear-by-Linear Association	5.524	1	.019
N of Valid Cases	23		

			Total Quart		
			Low Masc.	High Masc.	Total
Shame Card 8	0	Count	3	4	7
		Expected Count	3.7	3.3	7.0
	Indirect Shame	Count	9	5	14
		Expected Count	7.3	6.7	14.0
	Direct Shame	Count	0	2	2
		Expected Count	1.0	1.0	2.0
Total			12	11	23
			12.0	11.0	23.0

Chi-Squared Tests

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.248[a]	2	.197

Likelihood Ratio	4.031	2	.133
Linear-by-Linear Association	.074	1	.785
N of Valid Cases	23		

			Total Quart		
			Low Masc.	High Masc.	Total
Shame Card 9	0	Count	5	5	10
		Expected Count	5.2	4.8	10.0
	Indirect Shame	Count	4	2	6
		Expected Count	3.1	2.9	6.0
	Direct Shame	Count	3	4	7
		Expected Count	3.7	3.3	7.0
Total			12	11	23
			12.0	11.0	23.0

Chi-Squared Tests

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.767[a]	2	.681
Likelihood Ratio	.779	2	.677
Linear-by-Linear Association	.044	1	.835
N of Valid Cases	23		

	Total Quart		
	Low Masc.	High Masc.	Total

Shame Card 10	0	Count	5	5	10
		Expected Count	5.2	4.8	10.0
	Indirect Shame	Count	6	4	10
		Expected Count	5.2	4.8	10.0
	Direct Shame	Count	1	2	3
		Expected Count	1.6	1.4	3.0
Total			12	11	23
			12.0	11.0	23.0

Chi-Squared Tests

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.691[a]	2	.708
Likelihood Ratio	.699	2	.705
Linear-by-Linear Association	.043	1	.836
N of Valid Cases	23		

Appendix K

Curriculum Vitae

Education

2014 – Present **George Fox University, Newberg, Oregon**
Doctor of Clinical Psychology Program: **APA Accredited**
PsyD Anticipated: May 2019
Advisor: Glena Andrews, PhD

2016 **Master of Arts, Clinical Psychology**
George Fox University

2011 **Bachelor of Science, Psychology (Minor: Sociology)**
Portland State University, Portland, Oregon

Supervised Clinical Training and Experience

08/2018 – Present **Pre-Doctoral Internship at Montana State University**
Counseling and Psychological Services (CPS)
Bozeman, MT

Treatment Setting*: University Counseling*
Supervisors*: Cheryl Blank, PhD., Ryan Niehus, PsyD*
Clinical Duties:

- 2000 hour APA accredited internship.
- Utilize Psychodynamic and Interpersonal interventions in a primarily brief therapeutic model to serve a diverse student population struggling with trauma, anxiety depression, acculturation difficulties, and suicidality.
- Administer and interpret integrated cognitive, academic, and psychodiagnostic assessments.
- Consult and collaborate with medical providers within integrated clinic setting.
- Participate in weekly two hour individual supervision.
- Participate in weekly group training focusing on various clinical and diversity issues.
- Plan, coordinate, and participate in monthly outreach to diverse student populations on campus, including leading monthly didactic and dialogue with Native American students, suicide awareness for student population, and mental health awareness
- Provide weekly supervision to a masters level intern

6/2016 – 06/2018 **Oregon Health & Science University Family Medicine**
Portland, OR

***Title**: Behavioral Health Counselor*
***Treatment Setting**: Integrative Primary Care Clinic*
***Supervisors**: Joan Fleishman, PsyD.*
Clinical Duties:

- Two-day, 20 hour per week practicum, therapeutic interventions and assessments within an integrated primary care clinic.
- Utilizes Cognitive Behavioral and Solution Focused interventions in a primarily brief therapeutic model to serve a diverse clinical population.
- Provides brief therapeutic consultation for providers and patients.
- Conduct individual therapy with patients presenting with a broad range of psychopathological symptoms.
- Administer, interpret, and provide feedback for integrated cognitive, neuro, academic, and psycho-diagnostic assessments.
- Consult with medical staff to create collaborative treatment plans.
- One hour weekly individual supervision.
- Two hours weekly of group training focusing on various clinical issues.

5/2016 – 6/2017 **George Fox University Behavioral Health Clinic**
Newberg, OR

***Title**: Assessment Administrator*
***Treatment Setting**: Community Mental Health*
***Supervisors**: Joel Gregor, PsyD*
Clinical Duties

- Conducted intake interviews.
- Provided assessments for high needs and low income population.
- Provided weekly individual psychotherapy.
- Engaged in treatment planning.
- Wrote professional reports and presented cases.

8/2015 – 8/2016 **George Fox Health and Counseling Center**
Newberg, OR

***Title**: Behavioral Health Provider*
***Treatment Setting**: College Counseling Center*
***Supervisors**: Bill Buhrow, Psy.D., Luann Foster, Psy.D.*
Clinical Duties:

- Two-day, 16 hour per week practicum, therapeutic interventions and assessments within an integrated college health clinic.

- Utilizes Cognitive Behavioral and Solution Focused interventions in a primarily brief therapeutic model to serve a diverse clinical population.
- Conduct individual therapy with students presenting with a broad range of psychopathological symptoms.
- Administer and interpret integrated cognitive, academic, and psycho-diagnostic assessments.
- Consult with medical staff to create collaborative treatment plans.
- One hour weekly individual supervision.
- Two hours weekly of group training focusing on various clinical issues.

1/2014 – 4/2014 **George Fox University Pre-Practicum Therapy,**
Newberg, OR

Title*: Pre-Practicum Therapist*
Treatment Setting*: University*
Supervisors*: Glena Andrews, PhD; Michelle Satterlee, M.A.*
Clinical Duties

- Conducted intake interviews and made recommendations for treatment.
- Provided weekly individual psychotherapy for two undergraduate students.
- Engaged in treatment planning and weekly supervision.
- Wrote professional reports and presented cases.

1/2013 – 05/2018 **Clinical Conceptualization and Application Team**
George Fox University**,** Newberg, OR
Supervisors: *Mary Peterson, PhD, ABPP; Kris Kays, PsyD; Mark McMinn, PhD, ABP; Carlos Taloyo, PhD*

- Participated in formal presentations and team dialogue to help conceptualize individual cases from different perspectives and brainstorm appropriate evidence based interventions

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Additional Clinical & Professional Experiences

01/2017 – 07/2018 **Assessment Referral Counselor**
Cedar Hills Hospital
Portland, OR

Treatment Setting*: Psychiatric Inpatient Hospital*
Supervisors*:* Alisha Kauffman, MS, QMHP

Clinical Duties

- Process referral calls and transfers to/from hospitals.
- Administer comprehensive intake and risk assessments.

- Make appropriate referrals/appointments.
- Assisting in arranging for admission or referral to other local resources.
- Process admission documents, psychiatric holds, and releases of information.
- Contact insurances for payment authorizations and verification of benefits.

01/2017 – 06/2017 **Adjunct Faculty**
Multnomah University
Portland, OR

Course*: Education Psychology*
Treatment Setting*: Undergraduate College Course*
Supervisors*:* Elliot Lawless, PsyD.

Clinical Duties

- Developed course, assignments, and syllabus.
- Developed and implemented weekly lesson plans.
- Met one-on-one with students to provide support on assignments.
- Taught weekly lectures utilizing multimedia and group dynamics.
- Developed rubrics and grades for assignments.

09/2016 – 12/2016 **T.A. for Undergraduate Advanced Counseling Course**
George Fox University
Newberg, OR

Populations*: Diverse Undergraduate Students*
Supervisors*:* Kris Kays, PsyD.

Clinical Duties

- Facilitated weekly group discussions for 5 students.
- Reviewed theory and application of theoretical orientations.
- Facilitated role plays within group.
- Reviewed mock therapy videos.
- Met one-on-one with students to provide feedback.

12/2011 – 8/2014 **Group Counseling Facilitator/ Supervisor**
Northwest Behavioral Healthcare Services
Gladstone, OR

Treatment Setting*: Dual-Diagnosis Adolescent Inpatient Lockdown Facility*
Supervisors*:* Becca Paust, MA, LPC

Clinical Duties

- Planned and implemented a 7-week therapeutic group curriculum.
- Facilitated 5 therapeutic, process, and psycho-education groups daily.
- Accompanied clients to therapeutic groups and worked with therapist in implementing treatment goals and behavioral changes for clients.
- Worked quickly, ethically, and efficiently in a high stress and often volatile environment.
- Maintained safety of individual clients and staff members.
- Consulted with medical doctors and nurses regarding client presentation, diagnoses, and medication.
- Frequently used collaborative problem solving and de-escalation tactics.
- Piloted program to help groups leaders develop group curriculum.

6/2011 – 8/2011 **Julie Nelligan PhD, Private Practice**
Portland, Oregon

***Title**: Intern*
***Supervisor**: Julie Nelligan, PhD*

Duties:

- Met weekly implementing research on private practice foundations and publicity.
- Discussed and collaborated on professional development best practices.
- Built a website, blog, and online presence for the private practice .
- Developed articles, informational videos, and created a social media page.

Research Experience

2017 – Present **Dissertation Prelim – Full Pass**
Title: Masculine Adherence and the Experience of Shame in the Brain and Body.

Successfully Defended February 2019
George Fox University, Newberg, Oregon
Chair: Glena Andrews, PhD, ABPP
Committee: Nancy Thurston PsyD ABPP; Mark McMinn, PhD, ABPP

- Dissertation proposal presented to committee and chair.
- IRB Approval given for data collection for dissertation.
- Full Pass granted for dissertation.
- Original 2-stage data collected and analyzed.

2014 – 2018 **Research Vertical Team Member**

George Fox University, Newberg, Oregon
Chair: Glena Andrews, PhD,

- Bi-monthly small group for developing research competencies.
- Dissertation development.
- Collaborative supplemental research projects.
- Develop fellow colleagues' areas of research interests.
- Various areas of team interest and focus: Neuropsychology, trauma, gender issues, sports psychology, and diversity.

9/2011 – 3/2012 **Research Assistant**
Positive Acorn LLC, Milwaukie, Oregon
Supervisor: Dr. Robert Biswas-Diener

- Researched high and low rated professors at colleges in southern states.
- Contacted and conducting interviews at major colleges.
- Transcribed all interviews verbatim.
- Collected data on best and least effective practices for student success and educator success.

Selected Symposia and Professional Presentations

Polensek, N., Higgins, K., **Spromberg, C**. (2017) *The "Problem Patient": Teenage Behavioral Issues*. Presented at the 21st Annual Pennington Lectures at Oregon Health and Sciences University. Portland, Oregon.

Spromberg, C. (2016). *Masculinity and Men's Health Seeking Behaviors.* Presented to Family Medicine Behavioral Health staff at Oregon Health and Sciences University. Portland, Oregon.

Spromberg, C. (2015). *The Making of a Man: Men, Masculinity, psychotherapy, and the interplay of manhood and feminism.* Presented to faculty and students at George Fox University. Newberg, Oregon.

Poster Presentations

Spromberg, C., Andrews, G., Broughton, T., (2019) *Heart and Brain Responses to Aggression: Studying Conforming and Non-Conforming Men.* A poster to be presented at the 47th annual of the International Neuropsychological Society, New York, NY.

Spromberg, C., Andrews, G., Robertson, S., Webster, K. (2018) *Influential Factors for Conformity to Masculine Responses*. A poster presented at the 126th annual meeting of the American Psychological Association, San Francisco, CA.

Spromberg, C., Robison, M., Andrews, G., & Shumway, K. (2017) *Differences in Social Function Among Children Diagnosed with Disorders of the Corpus Callosum*. A poster presented at 37th Annual meeting of the National Academy of Neuropsychology, Boston, MA.

Spromberg, C. (May, 2017). *Masculine Adherence and the Experience of Shame in the Brain.* A poster presented at the 97th annual meeting of the Western Psychological Association Conference, Sacramento, CA.

Andrews, G., **Spromberg, C**., Shumway, K. T., & Robison, M. (August, 2017). *ADHD and Controls: Adolescents and Executive Functioning Performance Tasks.* A poster presented at the 125th annual meeting of the American Psychological Association, Washington, DC.

Smith, C., Lowen, J., Oliver, H., Peterson, M., Theye, A., Lee, J., **Spromberg, C**., . . . Ellis, J. (2015). *Predictors of Success in a Graduate Clinical Psychology Program*. A poster presented at the 122nd annual convention of the American Psychological Association (APAGS*),* Toronto, ON.

Professional Affiliations and Memberships

2017 – Present	American Men's Studies Association
2016 – Present	International Honor Society in Psychology – Graduate Member
2015 – Present	American Psychological Association Division 51: Society for the Psychological Study of Men and Masculinity
2016 – 2017	Western Psychological Association
2014 – 2017	Oregon Psychological Association

Leadership and Involvement

2018 – Present	*Member,* Montana State University CPS Internship Selection Committee
2015 – 2016	*Student Council Secretary,* George Fox University Graduate Department of Clinical Psychology
2014 – 2015	*Student Council Member,* George Fox University Graduate Department of Clinical Psychology
2014 – 2016	*Member,* Admissions Committee, George Fox University Graduate Department of Clinical Psychology

2014 – 2016 *Peer Mentor Leader,* Facilitated, matched and assisted first year Psy.D. students in their transition to graduate school

2014 – 2018 *Member*, George Fox Neuropsychology Special Interest Group

2014 – 2018 *Member*, George Fox Gender, Sexuality and Identity Special Interest Group

2014 – 2018 *Participant,* George Fox University Annual Community Service Day

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PROFESSIONAL AND EDUCATIONAL TRAINING EXPERIENCES

03/14/2018 Integration and Ekklesia
Presentation presented at George Fox University, Graduate Department of Clinical Psychology
Spring Colloquium, Newberg, OR.
Mike Vogel, PsyD.

02/14/2018 History and Application of Interpersonal Psychotherapy
Presentation presented at George Fox University, Graduate Department of Clinical Psychology
Spring Grand Rounds, Newberg, OR.
Carlos Taloyo, PsyD.

10/11/2017 Using community based participatory research to promote mental health in American Indian/Alaska Native children, youth and families.
Presentation presented at George Fox University, Graduate Department of Clinical Psychology Fall Grand Rounds, Newberg, OR.
Eleanor Gil-Kashiwabara, PsyD - Research Associate Professor.

6/20/2017 Suicide Prevention at the VA
Oregon Health & Science University, Portland Oregon, Psychiatry Grand Rounds
Monireh Moghadam, LCSW - Suicide Prevention Coordinator, Portland VA Healthcare System
Dimitri Ntatsos, LCSW - Suicide Prevention Coordinator, Portland VA Healthcare System.

4/25/2017 Consequences of Childhood Maltreatment: Integrating Behavioral, Brain, and Clinical Research

Oregon Health & Science University, Portland Oregon, Psychiatry Grand Rounds
Kristen Mackiewicz Seghete, PhD - Assistant Professor and Principal Investigator of Stress, Cognition, Affect, and Neuroimaging Lab, OHSU

4/18/2017 Cannabis and Anxiety: A Clinician's Debate
Oregon Health & Science University, Portland Oregon, Psychiatry Grand Rounds
Neisha D'Souza, MD - Psychiatrist and Assistant Professor, OHSU
Sean Stanley, MD - Psychiatrist and Assistant Professor, OHSU
Jeramy Peters, DO - Psychiatry Resident, OHSU
Eric Weathers, MD - Psychiatry Resident, OHSU

4/4/2017 The Power of Lived Experience
Oregon Health & Science University, Portland Oregon, Psychiatry Grand Rounds
Meghan Caughey, MD - Senior Director of Peer and Wellness Services
Elizabeth Schmick, DO - Psychiatry Resident
Jessica Myers, DO - Psychiatry Resident, OHSU
Pari Faraji, MD - Psychiatry Resident, OHSU

3/28/2017 "ADHD Research Updates"
Oregon Health & Science University, Portland Oregon, Psychiatry Grand Rounds
Joel Nigg, PhD - Professor of Psychiatry, Pediatrics, and Behavioral Neuroscience, OHSU; Director: Division of Psychology, OHSU

2/28/2017 "Management of Chronic Pain with Medical Marijuana: Clinical Correlates and an Update in the Evidence"
Oregon Health & Science University, Portland Oregon, Psychiatry Grand Rounds
Ben Morasco, PhD; Shannon Nugent, PhD.

2/21/2017 "Exploring the Psychological Impacts of Racism"
Oregon Health & Science University, Portland Oregon, Psychiatry Grand Rounds
Alisha Moreland, M.D.; Monique Jones, M.D.; Kali Hobson, M.D.

1/24/17 "Exposure and Response Prevention Therapy for Obsessive-Compulsive Disorder"
Oregon Health & Science University, Portland Oregon, Psychiatry Grand Rounds
Paige Anderson, NP - Psychiatric-Mental Health Nurse Practitioner, OHSU

12/27/16 "Psychosocial Interventions for Auditory Hallucinations"
Oregon Health & Science University, Portland Oregon, Psychiatry Grand Rounds
Jessica Murakami-Brundage, PhD.

11/09/16 "When Divorce Hits the Family: Helping Parents and Children Navigate"

George Fox University, Newberg, Oregon, Grand Rounds
Wendy Bourg, PhD.

11/01/16 "Invisible Wounds: Listening to the Trauma Story"
Oregon Health & Science University, Portland, Oregon, Psychiatry Grand Rounds
Omar Reda, M.D.

10/25/16 "Bipolar Disorder: Best Practices in Screening, Diagnosis and Treatment"
Oregon Health & Science University, Portland, Oregon, Psychiatry Grand Rounds
Julie Anderson, M.D.

10/12/16 "Sacredness, Naming and Healing: Lanterns Along the Way"
George Fox University, Newberg, Oregon, Colloquium
Brooke Kuhnhausen, PsyD.

References

Dr. Carlos Taloyo
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Private Practice Clinician
Former Director of Clinical Training
George Fox University
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