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Differential Effects of State Shame and Self-Affirmation on Reactive Aggression

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DIFFERENTIAL EFFECTS OF STATE SHAME AND

SELF-AFFIRMATION ON REACTIVE AGGRESSION

BY

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OF

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ABSTRACT

Reactive aggression is retaliatory behavior in response to a transgression from another, especially when self-control is compromised through cognitive exhaustion. This defensive reaction is especially pronounced when the transgression is made public, increasing the intensity of the status-threat experienced, but research is mixed on whether this is due to the experience of shame or damage to self-esteem. Self-affirmation has been used in a variety of studies to reduce defensiveness and increase prosocial behavior, but there have been no studies to explore the effects of self-affirmation on reactive aggression in non-clinical populations. Drawing from an undergraduate college student population (N=101), the present study examined the effects of self-affirmation and cognitive depletion tasks on the propensity to react aggressively in the Point Subtraction Aggression Paradigm (PSAP), while measuring changes in implicit experiential state shame (ESS). State shame was found to be related to aggressive reaction; this shame was exacerbated by cognitive depletion and mediated by self-affirmation. The effects found were weak in a mixed sex sample, and this may be due to how males are differentially affected by the self-affirmation task, particularly when they are from a college student population. Gender differences and a critique of how aggression is operationally defined in research are discussed as confounding variables and suggested as potential areas for future research.

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<div align="center">

Social Psych legends

Armitage through Zimbardo

Got nothing on Wood

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CHAPTER 1

INTRODUCTION

"If the path of the peacemaker, of happiness, is being open and receptive and one with your experience, then settling the score is the path of making war, whereby aggression gives birth to aggression and violence gives birth to violence. Nothing is settled. Nothing is made even. But the mind of settling the score does not take that into consideration. When you are caught by that mind, because of the highly charged and ever-expanding emotionality you're going through, you do not see what settling the score is really doing."

- From *Choosing Peace* (November 18, 2015) by Pema Chödrön

The Social Valuation of Aggression

Aggression can be defined as any kind of behavior, physical or verbal, that is intended to cause harm to another individual or group, and it is often categorized into two types – hostile or instrumental. Hostile aggression, better known in the literature as reactive aggression, is a spontaneous reaction based on increased feelings of anger. Instrumental aggression is the premeditated intent to injure, but as a means to an end, such as gaining, regaining, or maintaining status. Arguably, both reactive and premeditated aggression seem to have the same underlying mechanisms and motivations to mediate self-threat, but the relationship between these motivations and reactive aggression are less obvious because they are implicit. For example, frustration-aggression theory posits that frustration induces anger thereby increasing a readiness to aggress. Frustration is anything that blocks us from attaining our goal,

arising as a result of the disconnect between expectations and attainments, similar to the discomfort we experience during cognitive dissonance when our expected attitudes fail to line up with our exhibited behaviors. Frustration arises when one feels disrespected (Bettencourt & Miller, 1996; D. Cohen, Nisbett, Bowdle, & Schwarz, 1996; Felson, 1978; Miller 2001) and also when someone feels as if they have been treated unfairly (Anderson, Hildreth, & Howland, 2015). One may react to implicit motivations to regain status in the moment (reactive), or may ruminate on how to regain that status in the future (premeditated). But how do we learn what types of behaviors will help us to regain that status?

Learned social behavior theory hypothesizes that we learn about aggressive behavior by experiencing the reward or punishment in response to that behavior. Later research by Bandura, Ross, and Ross (1961) suggested that we do not have to be directly involved but rather can watch behavior and subsequent consequences in order to facilitate learning; this version was termed observational or Social Learning Theory. Subsequent research supporting Social Learning Theory observed that children who are physically aggressive usually come from physically punitive parents (Patterson, Chamberlain, & Reid, 1982) and that 30% of those children will go on to abuse their own children, a rate four times greater than those who do not come from such a background (Kaufman & Zigler, 1987; Widom, 1989). Although the simple explanation for this seems to be that children who see or experience aggressive behavior in general will later exhibit similar behavior, the link may not be so direct. A later study found that spanking can be linked to aggression later in life, but when controlling for extreme forms of punishment and isolating families who deliver "tough

love," these effects all but disappear (Gershoff, 2002). This implies that it is not simply the experience of physical punishment that directly leads to being aggressive, but rather there is some influence of the punisher's intentionality that manifests itself later in life. In other words, children who are physically abused, as opposed to experiencing the culturally acceptable "tough love," learn to develop self-worth contingent on how others treat them, a type of social comparison. They may grow up to be more aggressive because their sense of self-worth is more sensitive to negative judgment and unjustified punishment from others, and as such, the need to protect their self-worth may be more easily triggered.

There is more evidence that cultural cues play a key role in determining how someone becomes more prone to aggression. Some cultures, including mainstream America, value "toughness" in the form of masculinity, but additionally, the cultural value of defending one's honor, as in the American South (Vandello, Cohen, & Ransom, 2008), increases both direct (e.g., physical) and indirect (e.g., gossiping) aggression as a way to compensate for any threats to status (Cohen, Nisbett, Bowdle, & Schwarz, 1996; Miller, 2001; Nisbett, 1993; Willer, Rogalin, Conlon, & Wojnowicz, 2013; Wilson & Daly, 1985). Aggression is simultaneously taught to be a negative behavior, and socialized as an acceptable way to (re)affirm one's self-worth. The cultural cues do not have to be from direct exposure to aggression, but can come in the form of exposure to objects and concepts that are associated with normalized or valued forms of interpersonal aggression, a process called priming. In one longitudinal study in Chicago, those who had even indirect exposure to gun violence were twice as likely to participate in violent acts themselves (Bingenheimer, Brennan, & Earls,

2005). Simply holding a gun can prime a person to have hostile thoughts and punitive

judgments. However, this effect is limited to those who only have exposure to guns as

representing status or dominance, and is not seen in those whose exposure is

utilitarian, such as a hunter handling a rifle (Anderson, Benjamin, & Bartholow, 1998;

Dienstbier et al., 1998). Further, moderate priming effects have been found after

media consumption, including television and video games, resulting in direct (e.g.,

Eron, 1987) and indirect aggression, such as gossiping and ostracizing (Coyne &

Archer, 2005) in children.

       In addition to normalizing aggression as a means to self-affirm, media often

label aggressive acts as "justified" or "unjustified," giving a person excuses to draw on

when trying to reduce the cognitive dissonance. The Fundamental Attribution Error

(Ross, 1977) is one cognitive shortcut wherein we view our own negative actions as

having some sort of external justification and blame the negative actions of others on

internal traits, maintaining our worth while decreasing theirs. This works in reverse for

positive actions. We tend to attribute our own positive acts to our own internal traits;

however, if the positive act is that of another, we tend to attribute it to outer

circumstances (Malle, 2006). This also perpetuates the just-world phenomenon, or the

idea that "you get what you give," which in addition to justifying our direct actions,

helps us justify not acting when we see others being victimized (Furnham, 2003). This

is enhanced through our ability to depersonalize others to further reduce cognitive

dissonance when our explicit actions (or inactions) do not match the values we claim

to hold.

The Social Learning Theory of aggression is generally supported throughout the literature, but the misconception that the effects of exposure to aggression are a direct influence on behavior and not part of a larger system of self-worth evaluation and social comparison needs to be more comprehensively addressed. For example, there are children who grow up in violent neighborhoods and therefore would be expected to become violent themselves, but they do not. This exposure to violence, directly or through media, may not be the driving force behind why people resort to aggression in the face of adversity. Rather, it may be the direct experience of feeling ashamed when experiencing aggression that normalizes using external sources to determine self-worth, which, in turn, sensitizes one to self-threat and normalizes the use of aggression when attempting to compensate for it.

Research to date has not attempted to make much of a connection regarding the relationship between self-worth compensation, self-affirmation, and shame, particularly in non-clinical populations. This research attempts to fill that void.

CHAPTER 2

REVIEW OF THE LITERATURE

Reactive Aggression

Reactive aggression is a retaliatory response to actual or perceived provocation, often associated with a lack of impulse control (DeWall, Baumeister, Stillman, & Gailliot, 2006). A study done with criminal offenders showed relations between decreased self-control and a variety of undesirable behaviors, such as negative interactions and assaults on prison staff, substance abuse, rule breaking (e.g., carrying a weapon), and retaliatory actions against other inmates (DeLisi, Hochstetler, Higgins, Beaver, & Graeve, 2008). In a later study (Denson, Capper, Oaten, Friese, & Schofield, 2011), reactive aggression was shown to be reduced by going through self-control training, particularly in those who scored higher in aggression initially.

Aggression as a Response to Status Threat

There is no shortage of studies that find aggression as a response to status threat. Status is often reflected in how one is treated by others. When one feels disrespected, it is interpreted as a direct threat to their status. Studies have repeatedly shown that disrespect provokes anger, with increased aggression if that disrespect is made in a public setting (Bettencourt & Miller, 1996; D. Cohen et al., 1996; Felson, 1978; Miller, 2001). Because status is determined through social comparison, it is no wonder that being socially disrespected increases the effects of shame and subsequent action to regain status. One could argue that aggression in response to being shamed is a form of self-affirmation. Even just through affirming "toughness" prior to a threat,

one can proactively maintain their status, effectively avoiding shame (D. Cohen et al., 1996; Lukeszowski, Simmons, Anderson, & Roney, 2016). Particularly in cultures that value defending one's honor, such as the American South or violent gangs, as well as cultures socializing hegemonic masculinity, this fast and firm reaction to a status threat is imperative, as anything less is perceived as weak (D. Cohen et al., 1996; Griskevicius, Tybur, & Van den Bergh, 2009; Miller, 2001; Nisbett, 1993; Wilson & Daly, 1985). Because direct aggression is more easily measured than indirect, and men are socialized to exhibit masculinity in the form of direct, physical aggression, it is often overlooked that women also commit aggressive acts in response to status threat, because these acts are often more indirect and verbal (Willer et al., 2013).

It is important to note that the higher one perceives their status to be, the more they value that social positioning (Blader & Chen, 2012). So even though higher status individuals are protected to some extent from lower level threats, they often respond more intensely to acute threats to their position (Gruenwald, Kemeny, & Aziz, 2006), which indicates that one can have a high sense of self-worth, but if it is based on external sources of validation, they are just as, if not more, susceptible to shame. This may explain the mixed results in studies that look at implicit and explicit self-esteem in the face of a threat to self-worth, particularly when a person is being measured against someone higher in status. Several experiments have shown that experiencing this threat actually increases implicit self-esteem through compensation but reduces explicit self-esteem (e.g., Greenwald & Farnham, 2000), while other studies have shown explicit self-esteem to increase (e.g., Baumeister & Jones, 1978; Pyszczynski,

Greenberg, Solomon, Arndt, & Schimel, 2004). Conversely, another study looked at high versus low self-esteem as a moderator for self-affirmation effectiveness and found no relationship (Harris & Napper, 2005). This also offers an explanation for why studies find that narcissists tend to express anger and use aggression when attempting to avoid negative experiences (e.g., shame; Bushman et al., 2009). It appears that aggression, therefore, is a reaction to a threat to one's status and self-worth, particularly if they are founded on an external source of validation.

Self-Affirmation: An Internal Source of Validation

Self-affirmation theory states that "people are motivated to preserve a positive, moral, and adaptive self-image and to maintain self-integrity" and that this process can be accomplished through reinforcing core values that are particularly important to the person, increasing one's self-worth (Steele, 1988). Some of the earlier studies using this theory examined the neutralizing effects of self-affirmation on threats to the self, such as cognitive dissonance (Aronson, Blanton, & Cooper, 1995; Steele & Liu, 1983) and rumination over being labeled as unintelligent (Koole, Smeets, van Knippenberg, & Dijksterhuis, 1999).

Following these earlier studies, which made connections between self-threat and self-affirmation, researchers in health psychology began to use a variety of self-affirmation techniques. They investigated self-affirmation as a buffer to self-threat prior to health interventions so that recipients of messages would be more likely to accept the warnings instead of being closed off and defensive to a message that challenged their life choices. Results from many of these studies indicate that those who went through a self-affirmation manipulation were more likely to be accepting of

health messages regarding caffeine consumption and breast cancer (Reed & Aspinwall, 1998), alcohol consumption (Armitage, Harris, & Arden, 2011; Harris & Napper, 2005), healthy eating habits (Epton & Harris, 2008), and smoking risks (Armitage, Harris, Hepton, & Napper, 2008; Harris, Mayle, Mabbott, & Napper, 2007), especially when they were at greater risk. Additionally, in a double-blind study by Armitage and others (2008), the self-affirmation manipulation was done successfully at a factory employing a lower socioeconomic status (SES) population with high-risk smokers, confirming the generalizability of the self-affirmation procedure on a population that was less educated than the usual university sample.

Clearly, self-affirmation is a technique that is gaining attention because of its demonstrated utility in many areas, as well as its ease of implementation. The studies listed above used different self-affirmation techniques, such as writing long essays, answering questions about helpfulness, or acknowledging one's values. The variety of techniques allows the researcher to choose between a longer or shorter task, as well as choosing a simpler version for those outside of the university population, such as adolescents (Sherman et al., 2013) and those with less education (Armitage et al., 2008).

The Relevance of Cognitive Depletion

Increased cognitive load, known as ego depletion or cognitive depletion, is experienced when the mind is working on a task and, in relation to research, it can be imposed by requiring a person to do anything that involves their attention, such as solving a puzzle, calling attention to detail, or multitasking. Cognitive depletion is related to reduced self-control, as exemplified by emotional regulation, the ability to

delay gratification, and the capacity to resist temptation, among other consequences (Muraven & Baumeister, 2000). Depletion of self-control has been linked to increases in unethical behavior (i.e., cheating; Gino, Schweitzer, Mead, & Ariely, 2011) as well as increased aggression when provoked (Denson et al., 2011; DeWall et al., 2006). Some of the earlier studies examined the neutralizing effects of self-affirmation on threats to the self, such as cognitive dissonance (Aronson et al., 1995; Steele & Liu, 1983). Participants who went through the self-affirmation exercise showed an increase in self-control, as demonstrated through a variety of tasks, such as pain tolerance, task persistence, and delay of gratification, but only after experiencing a manipulated cognitive depletion, which suggests that affirmation may help a person regain self-control back to baseline, but not necessarily improve beyond that (Schmeichel & Vohs, 2009).

The relationship between self-affirmation and implicit cognition measures has been established more recently. Cognitive functioning in general, as measured by a problem-solving task, was improved after a self-affirming task (Wen, Butler, & Koutstaal, 2013). Sherman and others (2013) conducted a longitudinal study examining the effects of self-affirmation on identity threat (i.e., stereotype threat) in young Latino American students. They showed that a variety of self-affirming exercises actually closed the academic achievement gap between Latino American and European American students, wherein the Latino American students' grades increased, but the European American students' grades did not. Similarly, Schmeichel and Vohs (2009) reported increases in self-control in response to the self-affirmation task, but only after ego depletion. Additionally, in a diary self-report, these students described

feeling that they fit in more and had more motivation to do well. It is noteworthy that

for many students this effect continued for three years (Sherman et al., 2013). This

attenuation of stereotype threat through self-affirmation was also found by Shapiro,

Williams, and Hambarchyan (2013) in Black college student's performance, as well as

women's interest and performance in the STEM (i.e., science, technology,

engineering, and math) disciplines. Self-affirmation has also been shown to buffer

threats to self-esteem and subsequent resentful and defensive reactivity, which is

discussed in more detail in the section on shame and self-esteem (Monin, Sawyer, &

Marquez, 2008).

Shame and Affirmation

Shame and affirmation are the negative or positive (respectively) feelings

gained from an experience that contributes to one's self-worth. Shame is the feeling

that there is something inherently bad or wrong within oneself, not to be confused with

the closely related feeling of guilt – the feeling that one did something wrong. To

clarify, shame is internal blame for a behavior or an attribution that is a reflection of

the self, as opposed to guilt, in which although the behavior itself was bad, the action

did not stem from something innately wrong with the self. Shame is a feeling gained

from an experience that negates our sense of internal goodness or adherence to values

that we view as positive because of the perception (real or imagined) of a negative

evaluation from others (Tangney, Miller, Flicker, & Barlow, 1996). Cognitive

dissonance then results from this misalignment of behavior and valued attitude.

Conversely, affirmation is a feeling gained from a positive experience that reaffirms

our internal goodness or adherence to values that we view as positive. This affirmation

can originate from internal or external sources, depending on whether the value being exhibited is externally or internally derived. This internal versus external source of affirmation is not to be confused with the concept of internal and external locus of control. Several studies have shown contradictory evidence as to whether locus of control is related to shame, indicating that the external locus of control may be a byproduct of repeated, context-specific shame experiences (e.g., Parsons & Betz, 2001), a failure to meet the expectations from external sources, like societal norms (Madding, 1995), or a failure to meet the expectation from internal sources, for example, in those who are "perfectionists" (Amster, 1994).

Shame, not Self-Esteem. Self-esteem can be viewed as three separate constructs (see Brown & Marshall, 2006) – domain specific (i.e., social comparison in abilities and attributes), state-based (i.e., the immediate feelings of shame or affirmation from an experience), and global (i.e., self-esteem derived from a collection of shame and affirmation experiences, which remains fairly stable in adulthood). Domain- and state-based self-esteem are the feelings of self-worth attached to status, which contribute to global self-esteem. Again, the higher one perceives their status to be, the more they value their social position (Blader & Chen, 2012), and they respond more intensely to threats to their position (Gruenwald, Kemeny, & Aziz, 2006), especially narcissists (Bushman et al., 2009). Global self-esteem is a product of the compounding effects of shame and affirmation experiences that determine one's status in different domains, and varies significantly from person to person depending on what they value. Using this theory, the contradictory outcomes in research on the relationship between self-affirmation and self-esteem can be explained. Self-

affirmation exercises buffer threats to status, regardless of how high or low one perceives one's status to be. If someone is low in status in several domains, they are likely low in global self-esteem. Conversely, if they are higher in status across several domains, they are likely to be higher in global self-esteem. Self-affirmation buffers a threat to their status, which has the potential to affect measures of their domain and state self-esteem if their status in that situation is valued. We would not see immediate effects in the collective or averaged global self-esteem because after a lifetime of experiences, one event would be unlikely to make a measurable difference in the average. In sum, depending on the type of self-esteem being measured (global, domain, or state) and the perceived value of that status in a particular domain or state, researchers may or may not find measurable changes or differences in self-esteem, but they may find differences in shame proneness (trait shame) and changes in feelings of shame before and after an attack on their status (state shame).

Present Study

Reactive aggression has been found to be directly related to weak self-control and retaliatory behavior (DeLisi et al., 2008; DeWall et al., 2006). However, reactive aggression can be attenuated through self-control training (Denson et al., 2011). Studies have repeatedly shown that disrespect provokes anger, with increased aggression if that disrespect is made in a public setting (Bettencourt & Miller, 1996; Cohen et al., 1996; Felson, 1978; Miller, 2001). With status being determined through social comparison, it is no wonder that being socially disrespected increases the effects of shame and subsequent action to regain status. Self-affirmation tasks have been used in a variety of areas to reduce defensiveness (Cohen, Aronson, & Steele, 2000), offset

feelings of schadenfreude (van Dijk, van Koningsbruggen, Ouwerkerk, & Wesseling 2011), increase prosocial feelings and behaviors (Thomaes, Bushman, de Castro, & Reijntjes, 2012), buffer self-esteem (Monin et al., 2008), and restore self-control after ego depletion (Schmeichel & Vohs, 2009). One could argue that aggression as a response to being shamed is itself a form of affirmation. Even just through affirming "toughness" prior to a threat, one can proactively maintain their status, effectively avoiding shame (Cohen et al., 1996; Lukeszowski, Simmons, Anderson, & Roney, 2016). A recent study indirectly used self-affirmation to reduce aggression by augmenting a message aimed to reduce relational aggression, in which damage is caused to someone's relationships or social status (Armitage & Rowe, 2016). Only one study (Thomaes, Bushman, de Castro, Cohen, & Denissen, 2009) was found that explored the direct effects of a self-affirmation exercise on aggression; the authors found that self-affirmation can attenuate the self-threat experienced by narcissistic adolescents. However, research has yet to investigate the effects of self-affirmation on aggression in a non-clinical sample of adults. Accordingly, the present study will examine these effects, as well as the interaction between self-affirmation and cognitive depletion on reactive aggression to social provocation, defined as a threat to social status but not necessarily a threat to self-esteem, as measured by the Point Subtraction Aggression game. This task allows us to measure aggression in a controlled, laboratory setting under the guise of a competitive one on one game of speed and decision making abilities. The participants will be under the impression that they are competing against a real opponent, but they will actually be responding to computer generated provocations.

Hypothesis 1. Reactive aggression will be greater for those in the cognitive depletion group and the explicit shame group versus the control group. In other words, if a person is cognitively exhausted through either direct (cognitive depletion) or indirect (completing a shame measure) means, they will react more aggressively.

Hypothesis 2. Reactive aggression will be attenuated by completion of the self-affirmation task in the cognitive depletion group and shame group, but not in the control group.

Hypothesis 3. Experiential Shame Scale (ESS – an implicit shame measure) scores will be significantly greater in the cognitive depletion and shame group (versus the control), and will be attenuated by completion of the self-affirmation task (versus the control).

Hypothesis 4. Implicit and explicit shame sub-scores will be predictors of reactive aggression.

CHAPTER 3

METHODOLOGY

Design

The current study was both a within- and between-subjects experimental design wherein participants were randomly assigned to one of six groups in a 3 x 2 factorial design. The first independent variable was being assigned to either completing a cognitive depletion writing task, a control writing task, or a shame-measurement task, the Test of Self-Conscious Affect, version 3 (TOSCA-3; Tangney, Dearing, Wagner, & Gramzow, 2000). The second independent variable was completing a self-affirmation (SA) writing task or an "other-affirmation" (OA) focused control writing task. Then they each compete independently in the Point Subtraction Aggression game. In addition to the between-subject differences described above, all participants complete an implicit shame measure both before these tasks and after the final aggression measure to examine within-subject changes for each group.

Participants

Participants included in the study were 107 undergraduate students from the University of Rhode Island in undergraduate psychology courses (i.e. General Psychology, PSY113 and Quantitative Methods, PSY200). Six participants' scores were excluded for not meeting certain criteria (see Analysis of Assumptions).

Procedure

For recruitment purposes as well as to increase interest in "winning" the game, students were informed that by participating, they would be winning entries into a

drawing for a $100 Visa gift card. In fact, all students received one entry into the

drawing for participating. Upon signing up for the study, the student was assigned a

unique participant ID number reflective of the randomly assigned condition (See Table

1) to ensure responses were all associated with the same subject but anonymity was

preserved. They were brought into an office where they sat down at a computer station

and were given instructions on what to expect as well as a verbal run through of the

informed consent. The study was explained as an investigation on how several

cognitive exhaustion procedures affect reaction time and decision making. They were

told they would complete some questionnaires and hand written cognitive depletion

tasks while the other participant located in an adjacent room did a similar series of

tasks. When "both" participants finished with the pre-game tasks, they would play a

game with one another on the computer that measures reaction time and decision

making. After receiving answers to any questions, the participant reviewed the

informed consent on the computer screen and selected "I Accept" at the bottom if they

were willing to participate. The computer screen then told them to await further

instruction. Next, the research assistant gave the participant Harber's (1995) Sources

of Validation Scale, which contained a list of traits and values (see Appendix A), and

asked them to rank order this list in order of personal importance to them, with one

being the most important through number 11 being the least important. Afterwards,

they completed the following measures and tasks as determined by their randomly

assigned condition.

       "Pre-physical and cognitive state" questionnaire. First, all participants

completed the Experiential Shame Scale (ESS; Turner, 1998, 2014; see Appendix B)

on the computer console which aimed to measure their baseline state shame under the guise of being a physical and cognitive state questionnaire. They were told that this was to measure their baseline and post-experiment physical and cognitive state from their subjective perspective. Participants were asked to select a number from 1 to 7 for each item, corresponding to how they felt at that moment on a continuum between two opposite word states, with some of the items being reverse scored. There were three categories (Physical, Emotional, and Social) relating to the sensations and experiences of shame while retaining low face validity. The "physical" category had three items (ex. Physically I feel… 1 = very warm – 7 = very cool). The "emotional" category had four items (ex. Emotionally I feel… 1 = content – 7 = distressed). Finally, the "social" category had three standard items (ex. Socially I feel like… 1 = talking – 7 = being quiet) and one that was modified to fit the current research. The original body of research pertained to academic performance and used 1 = "I AM willing to talk about my grades with an acquaintance right now" to 7 = "I AM NOT willing to talk about my grades with an acquaintance right now." In an attempt to capture this from a competitive / status standpoint, this research will use 1 = "If asked, my peers would say I have ABOVE AVERAGE cognitive speed" to 7 = "If asked, my peers would say I have BELOW AVERAGE cognitive speed." The entire measure can be found in Appendix B. When participants finished, the computer screen either instructed them to continue to the next questionnaire or to raise their hand to ask the research assistant for further instruction.

It was decided to use the ESS as a shame marker because it is a covert measure of shame. The importance of using a covert measure of shame has been highlighted in

the literature review but cannot be stressed enough because of the sensitive nature of our implicit cognition to mere exposure to emotional words. This is the only measure of state shame to the author's knowledge that does not use any sort of explicit emotional words that connect with experiences of shame, guilt, or embarrassment. Rüsch et al. (2007) found that the ESS measure had some overlap with measures of anxiety, however, many of our physiological reactions are self-described as anxiety and when these feelings of arousal are explored in relation to the context in which they are experienced, we find they are often misattributed based on manipulated conditions (e.g., Dutton & Aron, 1974; Savitsky, Medvec, Charlton, & Gilovich, 1998; Schacter & Singer, 1962). Arguably, it is more socially acceptable to claim one is anxious than to admit one feels shame, so careful consideration of the context in which the feelings occur is important in interpreting them from an objective perspective.

In 2014, Turner explored the effectiveness of the ESS scale in several studies using shame as the predicted response to an experience of perceived failure elicited by academic exam score feedback, wherein she successfully demonstrated satisfactory inter-item construct validity (Cronbach's $\alpha = 0.72$) and good concurrent validity with measures of shame, as well as state and global self-esteem. Furthermore, qualitative feedback through interviews included reports of feelings of failure, wanting to "crawl in a hole," and wanting to hide the poor grade received from others, and other theoretically related reactions associated with shame, such as reporting physiological feelings of "heart sinking" and upset stomach that can be (mis)attributed to any of several causes depending on the context. Further, the ESS showed no significant correlation with social desirability, perhaps one of the most important factors after

scale validity in measuring such a delicate topic. Therefore, through careful consideration of the research question at hand, the ESS seemed like the best option for an implicit shame measure, particularly since the current study will also have a condition wherein an explicit shame measure is used.

"Cognitive depletion" tasks. Depending on the group the participant was randomly assigned to, they either completed the cognitive depletion exercise, its associated control exercise, or the Test of Self-Conscious Affect, version 3 (TOSCA-3; Tangney, Dearing, Wagner, & Gramzow, 2000; see Appendix C), followed by either the self-affirmation task or its associated control exercise.

Cognitive depletion manipulation. If the participant was randomly assigned to the ego depletion task or the control task, the computer instructed them to raise their hand to alert the research assistant who was prepared to give them the appropriate instruction for their assigned task. In the cognitive depletion task, they were asked to write a story about any recent trip (e.g., grocery store, different state, or different country) but to avoid using the letters "a" or "n." In the control group, participants were asked to write the same story, but with no such constraint. The participants wrote for 6 minutes. This technique has been used successfully in prior studies (e.g., Schmeichel & Vohs, 2009). After the 6 minutes passed, the research assistant let them know by tapping the participant on the shoulder and collected the form.

TOSCA-3. If the participant was assigned to complete the Test of Self-Conscious Affect (TOSCA-3) questionnaire, upon completion of the ESS survey they were told to click continue and proceeded onto the next screen. The instructions asked the participant to imagine themselves in 16 different scenarios (11 negative and 5

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positive) and indicate how likely they would be to react in the given ways on a scale of 1 ("not likely") to 5 ("very likely"). Each described reaction measures shame, guilt, externalization of blame, or detachment (in negative scenarios), or guilt, shame, externalization of blame, or pride (in positive scenarios). An example of a hypothetical negative scenario would be, "You break something at work and then hide it." The response options are as follows: guilt "You would think: 'This is making me anxious. I need to either fix it or get someone else to.'", shame "You would think about quitting", externalization of blame "You would think: 'A lot of things aren't made very well these days.'", and detached "You would think: 'It was only an accident.'" The entire measure can be found in Appendix C. The TOSCA remains one of the most widely used measures of shame and guilt and its wide range of reliability and validity studies across many subject pools, including college students, is discussed in Tangney, Dearing, Wagner, and Gramzow (2000). Upon completion, the screen had the participant raise their hand to alert the research assistant that they were ready for the next task.

   Self-affirmation manipulation. Next, participants completed the self-affirmation or control written task. In the self-affirmation condition, also described to the participant as a cognitive depletion task, the research assistant used their highest ranked value from Harber's (1995) Sources of Validation Scale and the participant was instructed to write about why this value was important to them and to describe three or four occasions when they exhibited this value. In the control condition, they were given instructions that asked them to write about the value ranked 7th, of moderate to lower value, and why that value may be important to the average college

student. The participants wrote for 10 minutes. This manipulation has been successfully used in previous studies in combination with cognitive depletion (e.g., Monin et al., 2008). The need to keep the self-affirmation condition deceptive and labeled as a cognitive task was decided upon because in one series of studies it was found that the effects of self-affirmation are weakened when the participants become aware of the process and expected outcomes (Sherman et al., 2009). After the 10 minutes had passed, the research assistant alerted the participant and collected the form.

Measure of reactive aggression. Next, the participant competed in the Point Subtraction Aggression Paradigm-First Session (PSAP-FS; Cherek, 1981), a laboratory based measure of reactive aggressive in which participants believe they are paired with a real opponent (actually a computer) to compete for points that can be exchanged for a reward. The participant is told that the goal of the task is to accumulate more points than their opponent. In the current experiment, participants were told that they could trade in their points for entries in the raffle for the gift card.

Prior to the research session, the following instructions (adapted from Cherek, Lane, Dougherty, Moeller, & White, 2000) for the PSAP portion were given to them and read aloud by the research assistant.

For your next task, you will be able to earn points which

will be exchanged for entries into the raffle for the $100 gift

card. You will be paired up with another participant located in

the alternative lab site in the building.

You will play a game against another participant located at an alternative lab site in the building for 25 minutes. You have been randomly assigned to the Point Deletion condition, and the second participant has been assigned to the Point Stealing condition.

As you can see, the response controller has three buttons labeled A, B, and C. When the session starts, the letters A, B, and C and a counter will appear on the computer screen. The counter will be at zero. Pushing the A button will cause the B and C letter to go off the screen. Pushing the A button approximately 100 times will cause the A letter to go off the screen, and add one point to the counter. Each point is worth one raffle entry. After about one second, the A, B, and C letters will come back on the computer screen. At that time you can continue to press A or switch to button B or C.

During the session the counter on your computer screen may become larger and one point will be subtracted. After the point is subtracted, the counter will return to its normal size. This means that one of the other persons has subtracted a point from your counter by pushing button B on their response panel. Every point that this person subtracts from your counter is added to their counter.

If you push button B on your response panel, the A and C letters will go off the screen. After you have pushed button B approximately 10 times, the letter B will go off the screen and one point will be subtracted from the other person's counter. After about one second, A,

B, and C letters will come back on the computer screen. You

can continue to press button B and subtract additional points

from the other person or switch to button A to gain points or C.

If you subtract a point from the other person, it will not be

added to your counter. Remember, points that are subtracted

from your counter by the other person are added to that person's

counter.

If you push button C on your response panel, the A and

B letters will go off the screen. After you have pushed button C

approximately 10 times, the letter C will go off the screen and

your earnings displayed on the counter will be protected from

point subtractions initiated by the other person for some period

of time. After about one second, the A, B, and C letters will

come back on the computer screen. You can continue to press

button C or switch to button A or B.

In summary, pressing A 100 times gains you a point,

pressing B 10 times deletes a point from your opponent, and

pressing C 10 times will protect your points from your opponent

for a short period of time.

No additional information regarding the procedure was provided. Portions of

the instructions were repeated if the subjects asked questions. Studies show its validity

in measuring aggression (i.e. tendency to push the B button) with a variety of

populations, such as male parolees convicted of violent versus non-violent crimes (Cherek, Moeller, Schnapp, & Dougherty, 1997; Cherek, Schnapp, Moeller, & Dougherty, 1996), in children with aggression issues and ADHD (Casat, Pearson, van Davelaar, & Cherek, 1995), and moderate correlations between aggression on the PSAP and self-report measures (Gerra et al., 2001, 2007). Several studies have also used the measure with undergraduate college students (e.g., Pinto, Maltby, Wood, & Day, 2012). A shorter version of the original PSAP using just the first session (PSAP-FS; approximately 25 minutes) was validated for potential use in expanded settings when multiple trials over the course of hours and/or days was too time consuming (Golomb, Cortez-Perez, Jaworski, Mednick, & Dimsdale, 2007).

The proportion of times the participant chooses the B button response, subtracting a point from the opponent (a behavior intending to cause harm) with no potential gain of the point to their own total, as compared to A and C is the measure of aggression (PSAP B ratio: # of times B Option/A + B + C Options = Aggression Score).

"Post-physical and cognitive state" questionnaire. Afterwards, participants all filled out the Experiential Shame Scale (ESS; Turner, 1998, 2014) again to measure their current state shame to be compared to scores on the ESS pre-test at the beginning, once again under the guise of being a physical and cognitive state questionnaire.

Demographic Questions. Finally, the participants filled out a demographic questionnaire on the computer that asked them about their identified sex, race/ethnicity, age, college major, a variation of the MacArthur subjective community

and national socioeconomic status (SES; Adler, Epel, Castellazzo, & Ickovics, 2000), and political and social values (see Appendix D).

Debriefing. Upon completion of the post-ESS, participants saw a thank you message on the computer screen and were asked to report to the lab attendant that they were ready for debriefing. They were informed that we were looking at the interaction of self-affirmation and cognitive depletion on aggression levels. They were told that every participant got entered into the drawing for the $100 gift card and that there was never an actual "opponent," but rather they were responding to computer generated provocations that were trying to elicit a response of aggressiveness (B-button) or defensiveness (C-button). We gauged the extent to which the deception worked (e.g., surprised look, asked them for feedback) and it was recorded in our participant records. The participant was thanked for their time and asked to sign an "affidavit" that they would keep their knowledge about the current study to themselves to ensure a clean slate for each participant in the future.

CHAPTER 4

RESULTS

The data were downloaded from Survey Monkey and Inquisit 5.0 (for the PSAP) into Microsoft Office Excel for organization and then uploaded into SPSS 23.0 for subsequent analysis.

Demographics

One hundred and one participants were included in the final data analysis. Reasons for the exclusion of some participants are given under Analysis of Assumptions. The majority of participants identified as female (n = 73; 72.3%). Of the 101 participants, 64% identified as Caucasian / European / White, 21% Native American / Mexican / Hispanic, 12% African American / Black / West Indies, and 3% Asian / Pacific Islander. It should be noted that some participants selected more than one identity, and so the percentages reported should not be computed to represent the raw number. The participants ranged from 19 to 29 years of age (M=19.76, SD=1.372). Participants identified their preferred political party as either Independent (43.6%), Democrat (24.7%), Libertarian, (17.8%), or Republican (13.9%), as well their social values as being primarily Moderate (43.6%), Liberal (24.8%), Libertarian (16.8%), or Conservative (14.8%).

The subjective social status (see Table 2) was negatively skewed, more so for the community standing (*Mean*=11.95, *Median*=12, *Mode*=16) than the national standing (*Mean*=10.23, *Median*=11, *Mode*=11), which is reflective of the population

wherein 53% of the student body came from the top 20% of earners, with a median

family income of $115,600, according to recent data collected by The Equality of

Opportunity Project (Chetty, Friedman, Saez, Turner, & Yagan, 2017).

Analysis of Assumptions

Assumptions were assessed for the general linear model, including normality,

multicollinearity, homoscedasticity, skewness and kurtosis, and identification of

outliers (z-score >= 3), using scatterplots, Q-Q plots, box and whisker graphs, and

histograms. Six participants were considered outliers because they were found to have

too few total points in the PSAP (*n*=3), indicating a lack of effort or understanding, or

no attempts at the B option were made and the participant vocalized suspicion of the

attempted deception (*n*=3), and were excluded from the data analysis, resulting in the

final N, 101. No data were found to be missing.

Descriptive Statistics

Full descriptive values, including means and standard deviations (see Table 2)

and frequencies for discrete variables (see Table 3) are available in the Appendix.

Pearson correlations were unsurprisingly significant for several pairs of variables (see

Table 4).

**Hypotheses 1 & 2: Cognitive Depletion, Self-Affirmation, and Reactive
Aggression**

An analysis of variance (ANOVA) was performed to evaluate the effects of the

cognitive depletion / TOSCA tasks and self-affirmation tasks on reactive aggression.

There was no significant interaction between the self-affirmation group and the

cognitive depletion group (M = 27.611, SE = 3.654), the TOSCA group (M = 34.782,

SE = 3.766), and the control group (M = 26.887, SE = 4.026) compared to the other-

affirmation control ($M_{CognitiveDepletion}$ = 32.124, $SE_{CognitiveDepletion}$ = 3.456; M_{TOSCA} =

29.345, SE_{TOSCA} = 3.89; $M_{Control}$ = 27.991, $SE_{Control}$ = 3.368), $F(2, 95)$=.924, p=.40,

partial η^2=.019, but the explicit shame measure followed by self-affirmation condition

did trend opposite to the hypothesis and the other groups (see Figure 1). Although the

means trended in the hypothesized direction between the cognitive depletion group (M

= 29.867, SE = 2.515), the TOSCA group (M = 32.064, SE = 2.707), and the control

group (M = 27.439, SE = 2.625), the ANOVA was not significant and carried a small

effect size, $F(2,95)$=.754, p=.473, partial η^2=.016. A follow up t-test for self-

affirmation (M=29.8365, SE=2.135) and other-affirmation (M=29.8213, SE=2.0873)

revealed no significant differences in reactive aggression as well, $t(99)$=.005, p=.996,

95% CI [-5.9291, 5.9595].

Hypothesis 3: Cognitive Depletion, Self-Affirmation, and ESS

An analysis of covariance (ANCOVA) was performed to compare the ESS

post-scores between cognitive groups, affirmation groups, and their interaction, while

controlling for differences in ESS pre-scores to isolate the effect the independent

variables had on Experiential State Shame (see Figure 2). Overall, there was a

difference between cognitive groups, $F(2, 94)$=6.926, p=.002, η^2 =.128, with follow-

up test indicating a significant difference between both the cognitive depletion

(M=39.836, SE=.904, p=.018) and TOSCA (M=40.922, SE=.974, p=.002) groups

compared to the control group (M=36.156, SE=.943). There was a significant

difference in ESS post-scores between the self-affirmation (M=37.146, SE=.792)

group and other-affirmation (M=40.797, SE=.742), $F(1,94)$=11.319, p=.001, η^2=.107. No interaction between cognitive groups and affirmation was found, $F(2, 94)$=1.151, p=.321, η^2=.024.

Hypothesis 4: Implicit and Explicit Shame and Reactive Aggression

Significant but small relationships were found between reactive aggression and both the ESS pre- (r=.221, p=.026) and post-scores (r=.231, p=.02), but not at all between reactive aggression and any of the TOSCA subscales, including shame. However, ESS post-scores did have moderately sized relationships with TOSCA's shame (r=.411, p=.022), externalization of blame (r=.366, p=.043), and detachment (r=.374, p=.038), and approached significance in an inverse relationship with guilt (r=-.343, p=.059). Relationships involving ESS pre-scores were slightly larger with shame (r=.464, p=.009) and externalization of blame (r=.566, p=.001), with nonsignificant but similar trends with guilt (r=-.309, p=.091) and detachment (r=.345, p=.057).

To further explore the differences between those higher and lower in ESS post-scores, a median split was done to categorize high ESS (n=53, M=45.62, SE=.681) and low ESS (n=48, M=31.79, SE=.598). There was a significant difference in reactive aggression between the high (M=33.0488, SE=2.07386) and low (M=26.2725, SE=2.03226) ESS groups, $t(99)$=2.326, p=.022, Cohen's d=.4642, 95%CI[.99471, 12.55773]. There was also a significant difference in shame scores between high (n=19, M=54.37, SE=1.573) and low (n=12, M=47.45, SE=2.323) ESS groups, $t(29)$=2.097, p=.021, Cohen's d = .925664, 95%CI[1.09, 12.147], as well as externalization of blame scores for the high (M=38.95, SE=1.989) and low (M=32.92,

SE=1.764) ESS groups, *t*(29)=2.097, *p*=.045, Cohen's *d*= .803909, 95%CI[.149, 11.912].

Exploratory Data Analysis: Gender Differences

Unexpected differences were found between those identifying as male (*n*=28) and female (*n*=73). Although not significant, the data trend was reversed in that, for males, aggression was greater in the self-affirmation condition (*n*=11, *M*=35.1847, *SD*=11.9718) than the other-affirmation condition (*n*=17, *M*=29.8174, *SD*=13.3991), compared to females, where aggression was slightly less in the self-affirmation condition (*n*=36, *M*=28.2023, *SD*=15.1319) than the other-affirmation condition (*n*=37, *M*=29.8231, *SD*=16.327; see Figure 3). This interaction was observed in the cognitive depletion and control conditions, but for the TOSCA condition, self-affirmation resulted in increased aggression scores for both males (*n*=4, *M*=38.1867, *SD*=15.81363) and females (*n*=36, *M*=33.6475, *SD*=16.99534) compared to other-affirmation (*n*=5, M_{MALES}=26.86445, *SD*=16.02585; *n*=37, $M_{FEMALES}$=30.5857, *SD*=18.72272). ESS post-scores did follow the hypothesized trend of being greater in the other-affirmation as compared to the self-affirmation groups (see Figure 4), indicating a divergence in the relationship between ESS and aggression (r_{MEN}=.078, *p*=.693; r_{WOMEN}=.327, *p*=.005). Obviously, a larger sample size is needed to further explore if these trends persist.

CHAPTER 5

CONCLUSION

The present study attempted to manipulate reactive aggression by randomly assigning some participants to complete cognitively exhausting tasks followed by either self-affirmation or other-affirmation tasks to examine a potential attenuation of that behavior. Implicit experiential shame was predicted to have a positive relationship with reactive aggression. As predicted, the cognitive depletion and TOSCA survey task increased feelings of implicit experiential shame, which were reduced by the completion of the self-affirmation task, but the results were mixed on the reactive aggression measure. Participants in the TOSCA condition who completed the follow up self-affirmation task were actually more aggressive than those who completed the other-affirmation task, a finding contrary to the initial hypothesis and to the trend of the cognitive depletion group. Further exploratory analysis found that gender may be playing a role in the variance that lessened the expected effects found between groups. Valuation and motivation of outcomes as well as gender differences could offer some explanation as to why the results were more inconclusive and mixed than expected.

Can We Really Measure Aggression?

Self-affirmation and cognitive depletion, both alone and in conjunction, did not significantly affect the propensity to react aggressively in the PSAP game. While this result was counter to the original hypothesis, it is not entirely surprising. It may reflect the measure itself, and not the effectiveness of the cognitive depletion or self-affirmation tasks, considering the tasks did affect ESS outcomes. As suggested in the

literature review, reactive aggression is linked to feeling status threat in an area that someone values. A recent study by Velez and Hanus (2016) found that in order for an outcome to impact one's self-perception, the person must value the outcome enough so that his or her identity is actually contingent upon it. They had participants get positive or negative feedback on a purported intelligence test and on a follow-up video game. Only those participants who valued success in the video game benefited from the positive feedback (i.e., affirmation) of doing well, that is, having it serve as a buffer to the negative feedback on the intelligence test. Those who received positive feedback in the video game but did not place any sort of value on being successful in that measure (i.e., it did not affirm their self-worth) were in turn more defensive to the negative feedback on the intelligence test (i.e., status threat). There are several different personal interpretations of the PSAP that a participant could have. If they neither value winning competitive events, nor view success in the PSAP game as being reflective of or connected to their self-worth, no reactivity would be expected. So instead of measuring reactive aggression, the PSAP may be measuring the value someone puts on being a winner and their unwillingness to hurt (albeit not physical) another person to gain that win.

While the self-affirmation task inherently guarantees that a participant focuses on a value that they care about, the PSAP outcome is not guaranteed to be valued, particularly since the outcome cannot be singularly defined. It could be that participants have a macro-level view of success being an overall win against the other person, which can be secured without stealing from them by earning points faster or protecting one's own points. Higgins (2012) describes two different motivations for

attaining positive outcomes, one being promotion-focused (i.e., wanting to win) and one being prevention-focused (i.e., not wanting to lose). The PSAP, wherein a person may or may not actually place value on the outcome, is much like the video game test in Velez and Hanus (2016). A participant's reactivity, be it offensive or defensive, is not guaranteed and, therefore, the PSAP may not be a good measure of aggression, in general, but rather a measure of how important it is for them to win (promotion-focused) or not lose (prevention-focused). The importance of internal values and motivation was exemplified in Siegel, Brockner, Wiesenfeld, and Liu (2016) in conjunction with the use of a self-affirmation manipulation. Self-affirmation was more likely to attenuate the avoidance of self-threatening modes of evaluation (i.e., skills-based versus a more arbitrary measure) for more prevention-focused individuals. In other words, if a person was more susceptible to self-threat, self-affirmation buffered their avoidance of evaluation measures that opened them up to criticism, but the self-affirmation had much less of an effect on those who were more promotion-focused.

The participant may also focus on the micro-level provocations and feel that they cannot let the opponent's thievery go unpunished, if taken as an affront to their sovereignty over point accrual. Conversely, they could avoid punishing the other person if they felt that retaliation would reflect negatively on their integrity in front of the researcher. They could be weighing the consequences of each reaction simultaneously, wherein one value (i.e., justified retribution versus the cost of appearing petty) is of greater importance to them as an individual. This conundrum is what makes measuring reactive aggression difficult in the first place. Reactive aggression is not an inherently measurable construct, but rather a broad concept that is

used to label a specific type of reaction to a self-threat, arbitrarily defined to fit the measure. The intensity of this reactive aggression can only be expected to the extent that some part of the measure (e.g., direct benefit of the reaction OR being observed behaving that way) holds significant value for the participant.

Shame

There was a significant increase in ESS scores that was similar across conditions, indicating some level of arousal, but given the variability of interpretation based on the context, it is difficult to conclude that this was an increase in shame rather than an increase in anxiousness. The increase was prominent in the cognitive depletion and TOSCA conditions, but not in the control condition, which indicates that cognitive load played a similar role. These effects were subdued when participants followed up the cognitive depletion or TOSCA exercise with the self-affirmation task. The relationships between the cognitive depletion and TOSCA, but not the control task, with self-affirmation is not surprising, as it parallels the finding from previous studies showing that self-affirmation only mediates effects when the person is at some sort of deficit, be it through cognitive depletion (Schmeichel & Vohs, 2009) or stereotype threat (Sherman, et al., 2013). What is important to note is that taking the TOSCA questionnaire resulted in similar arousal to a very different, unrelated task, that is, writing a story and leaving out certain letters to induce cognitive exhaustion. One requires a person to reflect on their moral integrity, the other is a simple letter-omitting task, yet both result in the increase in arousal.

The relationship between a greater ESS post-score and increased aggressive responses in the PSAP further underscores the potential overlap of intense cognitive

processing and ethical decision making with the area of the brain that mediates reactive aggression. One may argue that answering the hypothetical questions in the TOSCA, and not the content of the TOSCA itself, is what results in the similarity with cognitive depletion, but further analysis within the TOSCA group shows a relationship between greater ESS pre- and post-scores and increased propensity for shame, externalization of blame, and detachment related responses, and a decreased propensity for guilt. Considering the difference between measures, TOSCA looks at shame proneness by asking participants what they would do/feel in hypothetical situations while the ESS looks at physiological indicators that measure feelings of shame in that moment. If a person is self-reporting a tendency for feeling ashamed, they may have a higher self-awareness wherein they would try to avoid shame by not hurting another person, while also protecting themselves from the shame of losing. This may indicate that while some people may be more or less prone to feeling ashamed, situational shame is still highly dependent on a person's personal value in the worth associated with the task at hand. The participants who had greater ESS post-scores need not have general shame proneness, but could have a situation specific shame, in this case tied to losing or being taken advantage of.

Those who scored higher in the ESS follow-up measure had greater reactive aggression percentages independent of task condition, and they also had greater scores in TOSCA's shame and externalization of blame subscales. The latter seems counterintuitive, shame being an internalization of blame while the other shows a focus on external factors, but this is similar to the original findings of Tangney, Wagner, Fletcher, and Gramzow (1992). None of the subscales are necessarily

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mutually exclusive within an individual, and it would make theoretical sense for a person who has shame proneness to try to counteract that emotion by attempting to place the blame on external circumstances and people.

Gender Differences

Participants were given the option to choose between more than just male or female, but all chose to identify with one of those two categories. In exploratory data analysis, a major difference in the trends was found for aggression as it related to gender and ESS scores. One way men are socialized to exhibit status is with direct, physical aggression (Kimmel & Mahler, 2003), but it is often overlooked that women also commit aggressive acts in response to status threat since these acts are more often indirect and verbal (Willer, Rogalin, Conlin, & Wojnowicz, 2013). In a review of the literature concerning gender differences in anger and aggression, Campbell and Muncer (2006) determined that men and women do not differ in reporting, willingness or ability to express anger, and, in some cases, women actually reported more anger than men, even after controlling for differences in how anger is expressed (Mirowsky & Ross, 1995).

Gender differences were not initially expected in this study because the PSAP does not measure typical physical aggression primarily exhibited by males nor the indirect aggression primarily exhibited by females. This characterization is supported, if only in a null fashion, by an earlier study (Allen & Dougherty, 1996) that found no difference in aggressive responses between males and females as measured by the PSAP. However, as suggest previously, we cannot conclude that the choice to react aggressively was similar between genders based on valuation of the outcome at hand.

In a recent study using the PSAP (Geniole, Cunningham, Keyes, Busseri, & McCormick, 2015), the provocation cost (number of points per provocation) and frequency (how many times during the interval provocation occurred) were manipulated to examine differences in how males and females would retaliate and to what they would attribute their behavior (i.e., tangible reward = points or status-threat = frequency). They found that men were more likely to retaliate when the frequency of provocation was greater, a threat to their status, whereas females were more likely to retaliate when the cost was greater, a threat to the tangible reward; furthermore, the groups explicitly acknowledged those associated reasons for their retaliation. Women are less likely to challenge or attack a provoker, at least when under low to moderate duress, but, as provocation increases, gender differences become less pronounced (Bettencourt & Miller, 1996). In other words, during low and medium levels of provocation, men were more likely to respond aggressively, but as the provocation increased, women and men were similarly prone to reactive aggression.

In the current study, each participant (regardless of gender identity) experienced the same cost and frequency of provocation, and aggression scores did not differ significantly in the cognitive control / other-affirmation condition, similar to Allen and Dougherty (1996), although male scores were greater in that condition, which could be explained by Bettencourt and Miller (1996) since the experience was that of a moderate level of provocation. If, as suggested by Geniole and others (2015), males reacted based more on perceived status-threat, then this may be what was being effectively manipulated by the self-affirmation task. However, contrary to the hypothesis, the self-affirmation task increased the aggressive response rather than

decreasing it. One study found that a greater sense of entitlement not only predicted unforgiving attitudes, but that self-affirmation exacerbated feelings of vengefulness and malevolence (Exline & Zell, 2009).

Not only is there evidence that a greater sense of entitlement is found in college students (Twenge, 2006), but also that this entitlement is greater in males than females (Ciani, Summers, & Easter, 2010). Males in both the cognitive depletion and control groups were more aggressive in the self-affirmation conditions than the other-affirmation condition, and the amount of aggression was inversely related to their implicit shame (ESS) scores. This was a departure from the expected trend that was found with females, wherein aggression was mediated by self-affirmation and had a positive correlation with their ESS scores. If ESS scores accurately reflect feelings of implicit state shame, then it makes sense that a decreased sense of shame would allow for a bolstered sense of entitlement, especially in response to a perceived injustice or status-threat, considering that greater entitlement has also been linked to a greater sensitivity to feeling offended by transgressions from others (Exline, Baumeister, Bushman, Campbell, & Finkel, 2004).

Limitations and Future Directions

Although the study used experimental methods to isolate the effects of self-affirmation and cognitive depletion, the sample consisted entirely of college students, as is the case with a lot of psychology research. Unfortunately, as discussed in the previous section, college students, particularly males, might be more inclined to have a greater sense of entitlement, which could lead to dramatic differences in the dependent

variables. Given the number of conditions, statistical power was limited in finding group differences between genders within the predetermined conditions.

Future studies could replicate the current design, but should increase the sample size and attempt to get an even distribution of self-identified males and females to further explore this possible interaction between gender and self-affirmation and their effects on aggression. Future studies should also consider comparing self-reported shame and the ESS scores across all the conditions to contribute to the legitimacy of ESS as an implicit measure of shame, and additionally explore the gender differences in how shame contributes to aggression. It is worth noting once again that the use of the term aggression may be too all-encompassing of specific behaviors and reactions, as exemplified in Geniole and others (2015), and consideration of extraneous variables, such as sense of entitlement (Exline et al., 2004), motivation for positive outcomes (Higgins, 2012; Siegel et al., 2016), and valuation of outcomes (Velez & Hanus, 2016), is necessary when interpreting the intensity and intent of an individual's reactions to interpersonal confrontation.

APPENDICES

Table 1

Task Order by Condition

Condition	Task Order				
1	ESS	Control	OA	PSAP	ESS
2	ESS	Control	SA	PSAP	ESS
3	ESS	CogDep	OA	PSAP	ESS
4	ESS	CogDep	SA	PSAP	ESS
5	ESS	TOSCA	OA	PSAP	ESS
6	ESS	TOSCA	SA	PSAP	ESS

Note. ESS = Experiential Shame Scale, CogDep = Cognitive Depletion task, TOSCA = Test of Self-Conscious Affect Version 3, Control = Control for Cognitive Depletion task, SA = Self-Affirmation task, OA = Other-Affirmation / Control for Self-Affirmation task, PSAP = Point Subtraction Aggression Paradigm

Table 2. *Descriptive Statistics*

	N	Mean	SE	SD	Range	Minimum	Maximum	Variance	Skewness	SE	Kurtosis	SE
Age	101	19.7624	.13654	1.37221	10.00	19.00	29.00	1.883	3.970	.240	21.830	.476
SES Community	101	11.95	.314	3.160	12	4	16	9.988	-.570	.240	-.431	.476
SES USA	101	10.23	.311	3.127	13	3	16	9.778	-.556	.240	-.004	.476
ESS Before	101	35.83	.809	8.129	38	18	56	66.081	.406	.240	.184	.476
ESS After	101	39.05	.827	8.308	36	24	60	69.028	.148	.240	-.785	.476
Aggression Percent	101	29.8284	1.48682	14.94232	65.01	2.17	67.19	223.273	.177	.240	-.329	.476
TOSCA												
Shame	31	51.81	1.422	7.918	31	32	63	62.695	-.343	.421	-.299	.821
Externalization	31	36.61	1.478	8.229	35	21	56	67.712	.412	.421	.310	.821
Guilt	31	65.81	1.291	7.190	34	44	78	51.695	-.856	.421	1.581	.821
Detachment	31	30.94	1.058	5.893	24	16	40	34.729	-.530	.421	-.153	.821

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Table 3. *Frequency Table: Discrete Variables x Affirmation Condition*

	Affirmation Condition			
	Self-Affirmation	Other-Affirmation	Total	Percent
	N	N	N	%
Gender				
Female	36	37	73	72.3
Male	11	17	28	27.7
Cognitive Task				
Cognitive Depletion	17	19	36	35.6
Control	14	20	34	33.7
TOSCA	16	15	31	30.7
ESS Group*				
Low ESS	28	20	48	47.5
High ESS	19	34	53	53
Social Values				
Conservative	7	8	15	14.9
Moderate	17	27	44	43.6
Libertarian	7	10	17	16.8
Liberal	16	9	25	24.8
Political Party				
Republican	7	7	14	13.9
Independent	17	27	44	43.6
Libertarian	7	11	18	17.8
Democrat	16	9	25	24.8
Affirmation Condition				
Total	47	54	101	-

Note : * ESS Groups determined through median split of ESS post-scores

Table 4. *Correlation Matrix*

	1	2	3	4	5	6	7	8	9	10	11
1. Aggression	-										
2. Increase in ESS	.019	-									
3. ESS Pre	.221*	-.365**	-								
4. ESS Post	.231*	.413**	.698**	-							
5. Shame	.175	-.003	.464**	.411*	-						
6. Exterternalization	.041	-.189	.566**	.366*	.340	-					
7. Guilt	-.030	-.092	-.309	-.343	.387*	-.104	-				
8. Detachment	-.214	.090	.345	.374*	.033	.404*	-.400*	-			
9. Local SES	.055	.042	-.154	-.119	.147	.165	.121	-.294	-		
10. National SES	.060	.203*	-.176	-.016	.005	-.265	-.141	-.102	.377**	-	
11. Gender	.087	-.042	-.170	-.199*	-.294	.083	-.364*	.068	.129	.061	-

Note. *p>.05, **p>.01. Shame, Externalization, Guilt, and Detachment were only measured in the TOSCA Group, n =31. Gender 1=Female, 2=Male.

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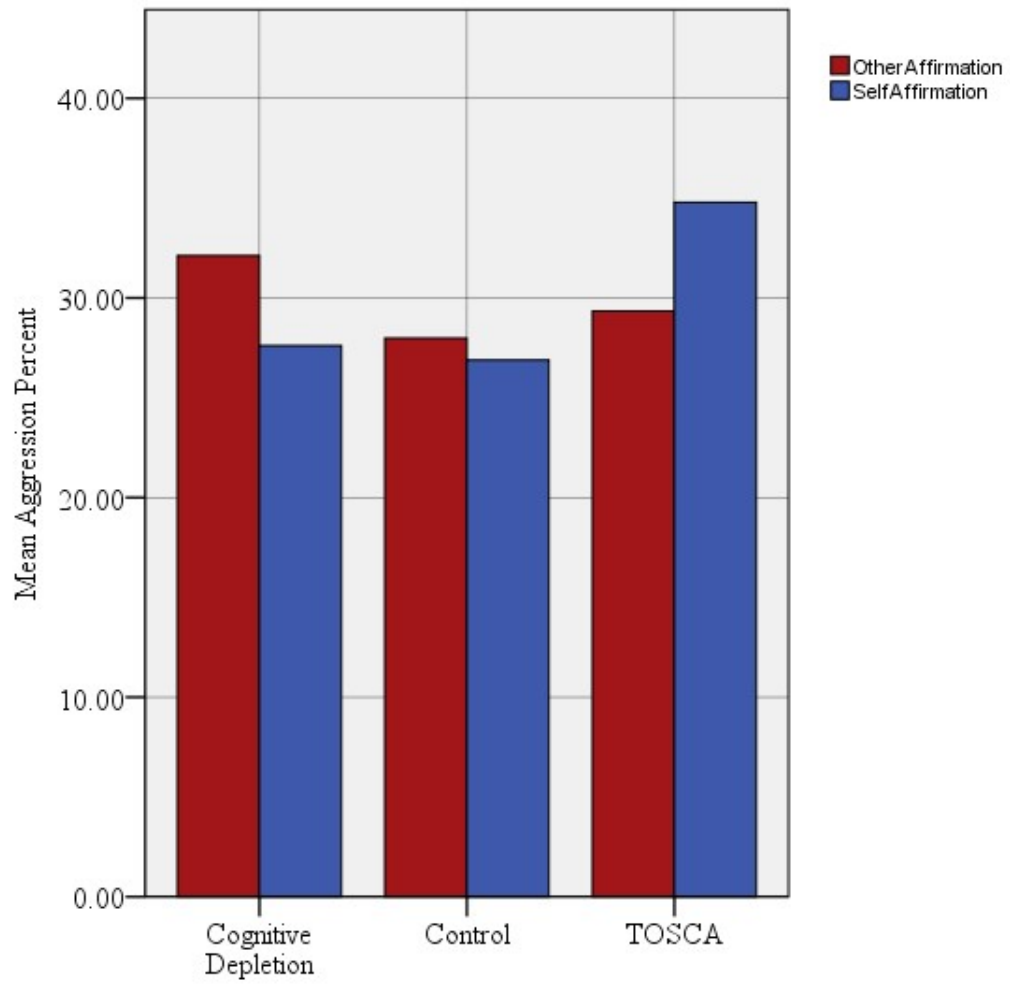
Figure 1. Mean Aggression for Cognitive Task x Affirmation Task
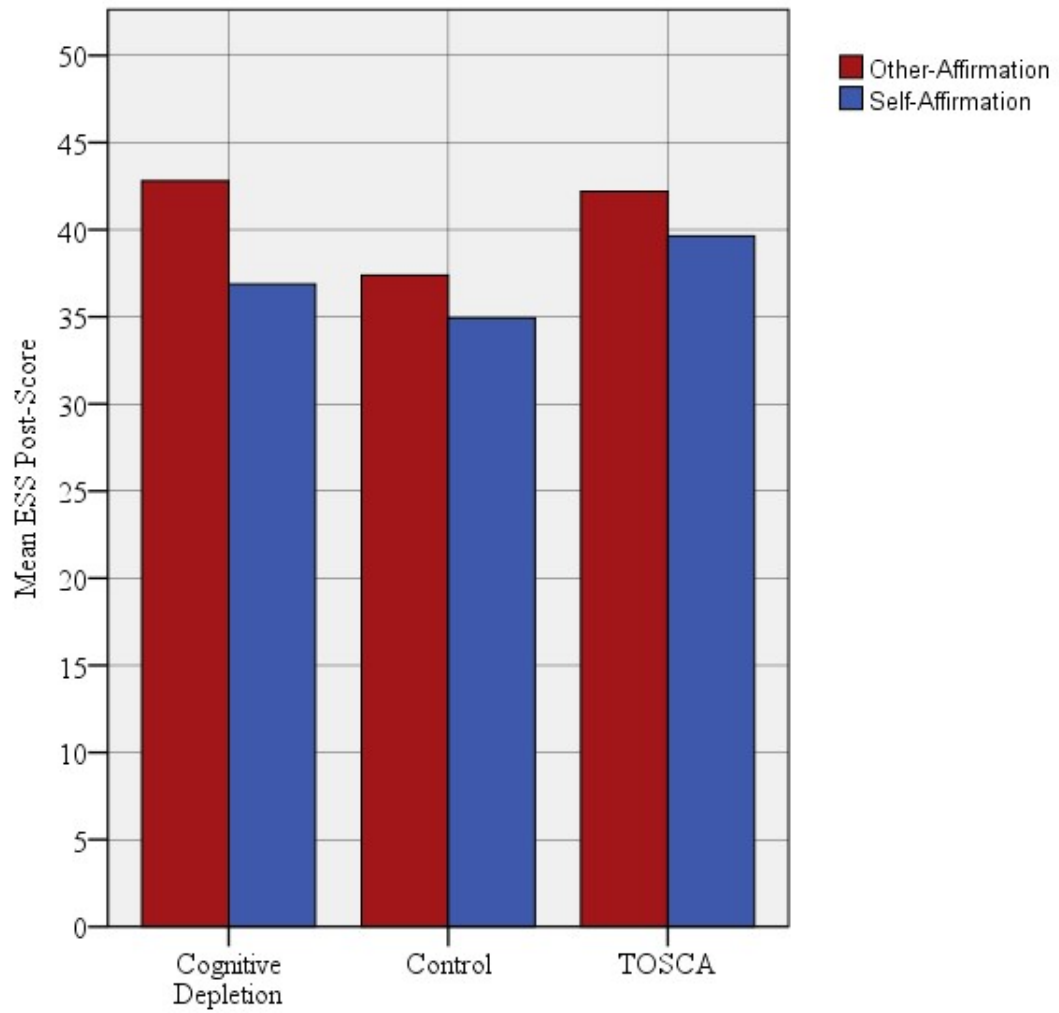
Figure 2. Mean ESS Post-score for Cognitive Task x Affirmation Task. Covariates appearing in the model are evaluated at the following values: Total Before = 35.83
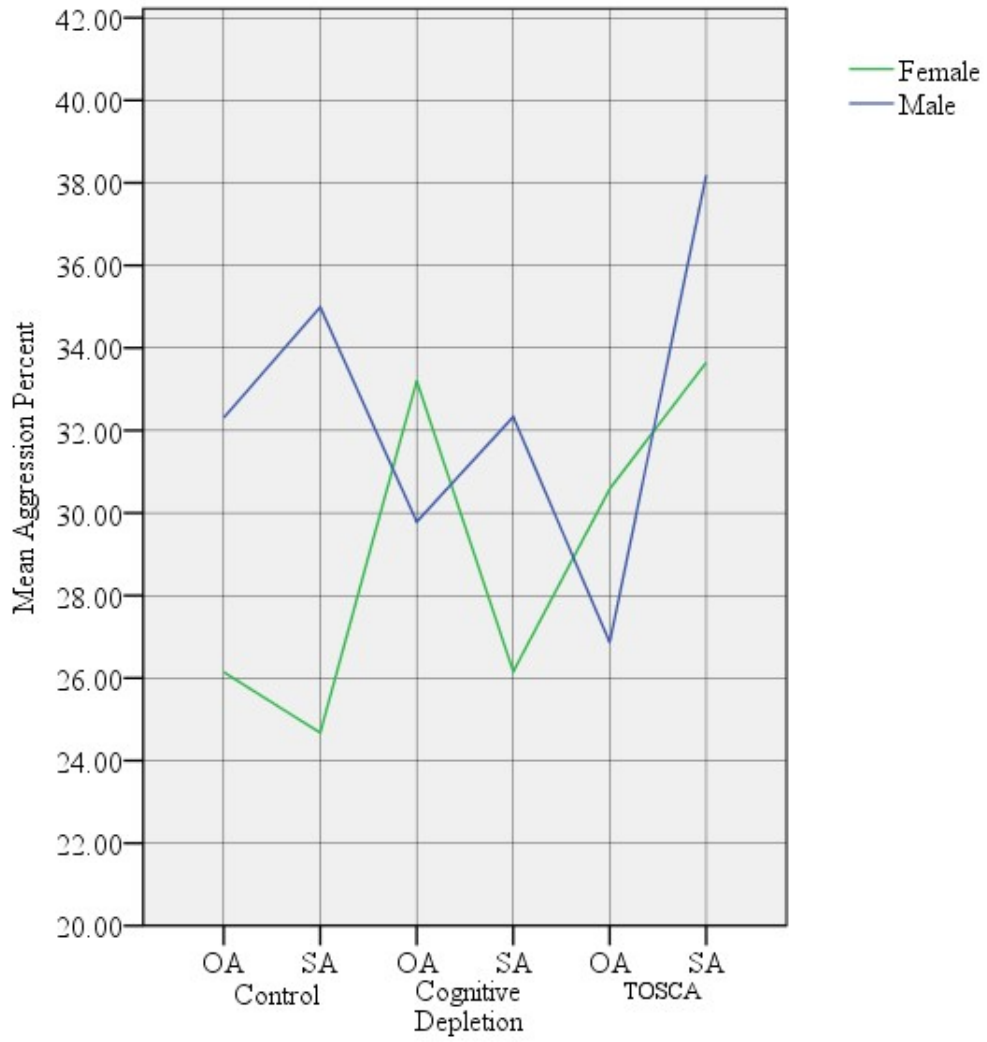
Figure 3. Mean Aggression Percent – Condition x Gender.
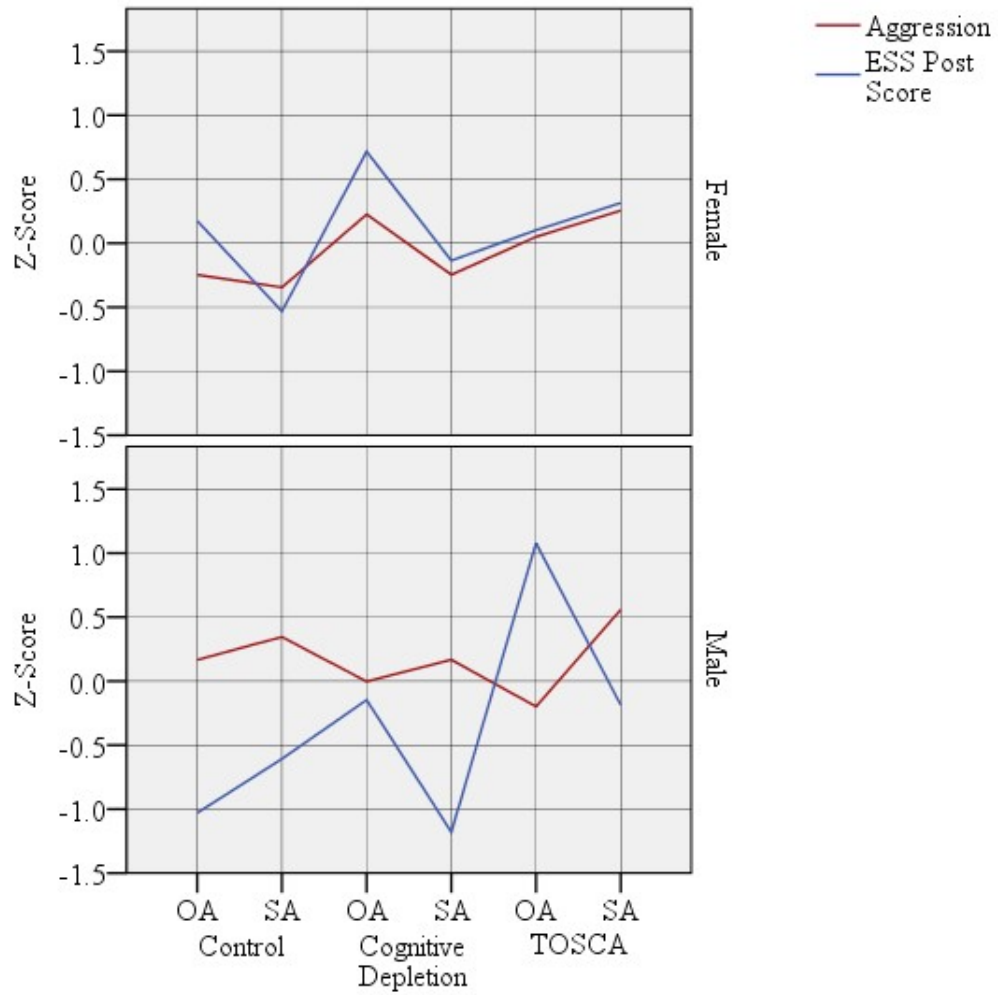
Figure 4. Z-Score Trend Comparison between Aggression and ESS Post-Score for Condition x Gender.

Appendix A

Sources of Validation Scale

RANKING OF PERSONAL CHARACTERISTICS AND VALUES

Below is a list of characteristics and values, some of which may be important to you, some of which may be unimportant. Please rank these values and qualities in order of their importance to you from 1 to 11 (1 = most important item, 11 = least important item). Use each number only once.

___ Artistic skills / aesthetic appreciation

___ Sense of humor

___ Relations with friends / family

___ Spontaneity / living life in the moment

___ Social skills

___ Athletics

___ Musical abilities / appreciation

___ Physical attractiveness

___ Creativity

___ Business / managerial skills

___ Romantic values

Appendix B

Experiential Shame Scale

Please indicate the number that best describes how you feel <u>right now</u> when comparing the two opposite word-states. For example, if you are feeling very warm (compared to very cool), mark 1; however, if you are feeling very cool (compared to very warm), mark 7. If you are feeling in-between the two states, find the number between 1 and 7 that best describes how you feel right now.

<u>Physically, I feel</u>:

1. Very Warm   1   2   3   4   5   6   7   *R*   Very Cool
2. Normal Heartbeat   1   2   3   4   5   6   7   Rapid Heartbeat
3. Pale   1   2   3   4   5   6   7   Flushed

<u>Emotionally, I feel</u>:

4. Good   1   2   3   4   5   6   7   Bad
5. Clear   1   2   3   4   5   6   7   Confused
6. Content   1   2   3   4   5   6   7   Distressed
7. Calm   1   2   3   4   5   6   7   Highly

                                                 Agitated/Aroused

<u>Socially, I feel like</u>:

8. Hiding   1   2   3   4   5   6   7   *R*   Being Sociable
9. Talking   1   2   3   4   5   6   7   Being Quiet
10. No one sees me   1   2   3   4   5   6   7   People are looking at me
11. If asked, my peers   1   2   3   4   5   6   7   If asked, my peers
    would most likely   would most likely say I
    say I have ABOVE   have BELOW
    AVERAGE   AVERAGE cognitive
    cognitive speed.   speed.

R = Reverse-scored item

Below are situations that people are likely to encounter in day-to-day life, followed by several common reactions to those situations.

As you read each scenario, try to imagine yourself in that situation. Then indicate how likely you would be to react in each of the ways described. We ask you to rate all responses because people may feel or react more than one way to the same situation, or they may react different ways at different times.

For example:

A. You wake up early one Saturday morning. It is cold and rainy outside.

a) You would telephone a friend to catch up on news.   1---2---3---4---5
                                                   not likely   very likely

b) You would take the extra time to read the paper.   1---2---3---4---5
                                                   not likely   very likely

c) You would feel disappointed that it's raining.   1---2---3---4---5
                                                   not likely   very likely

d) You would wonder why you woke up so early.   1---2---3---4---5
                                                   not likely   very likely

In the above example, I've rated ALL of the answers by choosing a number. I indicated a "1" for answer (a) because I wouldn't want to wake up a friend very early on a Saturday morning -- so it's not at all likely that I would do that. I chose a "5" for answer (b) because I almost always read the paper if I have time in the morning (very likely). I chose a "3" for answer (c) because for me it's about half and half. Sometimes I would be disappointed about the rain and sometimes I wouldn't -- it would depend on what I had planned. And I chose a "4" for answer (d) because I would probably wonder why I had awakened so early.

Please do not skip any items -- rate all responses.

1. You make plans to meet a friend for lunch. At 5 o'clock, you realize you stood him up.

   a) You would think: "I'm inconsiderate."   1---2---3---4---5
                                                   not likely   very likely

   b) You would think: "Well, they'll understand."   1---2---3---4---5
                                                   not likely   very likely

   c) You'd think you should make it up to him as soon   1---2---3---4---5
     as possible.   not likely   very likely

   d) You would think: "My boss distracted me just   1---2---3---4---5
     before lunch."   not likely   very likely

2. You break something at work and then hide it.

   a) You would think: "This is making me anxious. I   1---2---3---4---5
     need to either fix it or get someone else to."   not likely   very likely

   b) You would think about quitting.   1---2---3---4---5
                                            not likely   very likely

   c) You would think: "A lot of things aren't made   1---2---3---4---5
     very well these days."   not likely   very likely

   d) You would think: "It was only an accident."   1---2---3---4---5
                                        not likely   very likely

3. You are out with friends one evening, and you're feeling especially witty and attractive. Your best friend's spouse seems to particularly enjoy your company.

   a) You would think: "I should have been aware of what   1---2---3---4---5
     my best friend is feeling."   not likely   very likely

   b) You would feel happy with your appearance and   1---2---3---4---5
     personality.   not likely   very likely

   c) You would feel pleased to have made such a good   1---2---3---4---5
     impression.   not likely   very likely

d) You would think your best friend should pay   1---2---3---4---5
   attention to his/her spouse.   not likely   very likely

e) You would probably avoid eye-contact for a long   1---2---3---4---5
   time.   not likely   very likely

4. <u>At work, you wait until the last minute to plan a project, and it turns out badly.</u>

a) You would feel incompetent.   1---2---3---4---5
                                       not likely   very likely

b) You would think: "There are never enough hours   1---2---3---4---5
   in the day."   not likely   very likely

c) You would feel: "I deserve to be reprimanded for   1---2---3---4---5
   mismanaging the project."   not likely   very likely

d) You would think: "What's done is done."   1---2---3---4---5
                                       not likely   very likely

5. <u>You make a mistake at work and find out a co-worker is blamed for the error.</u>

a) You would think the company did not like the   1---2---3---4---5
   co-worker.   not likely   very likely

b) You would think: "Life is not fair."   1---2---3---4---5
                                  not likely   very likely

c) You would keep quiet and avoid the co-worker.   1---2---3---4---5
                                  not likely   very likely

d) You would feel unhappy and eager to correct the   1---2---3---4---5
   situation.   not likely   very likely

6. <u>For several days you put off making a difficult phone call. At the last minute you make the call and are able to manipulate the conversation so that all goes well.</u>

a) You would think: "I guess I'm more persuasive than   1---2---3---4---5
   I thought."   not likely   very likely

b) You would regret that you put it off.   1---2---3---4---5
                                          not likely   very likely

c) You would feel like a coward.   1---2---3---4---5
                                          not likely   very likely

d) You would think: "I did a good job."   1---2---3---4---5
                                          not likely   very likely

e) You would think you shouldn't have to make calls 1---2---3---4---5
   you feel pressured into.   not likely   very likely

7. <u>While playing around, you throw a ball and it hits your friend in the face.</u>

  a) You would feel inadequate that you can't even   1---2---3---4---5
   throw a ball.   not likely   very likely

  b) You would think maybe your friend needs more   1---2---3---4---5
   practice at catching.   not likely   very likely

  c) You would think: "It was just an accident."   1---2---3---4---5
                                      not likely   very likely

  d) You would apologize and make sure your friend   1---2---3---4---5
   feels better.   not likely   very likely

8. <u>You have recently moved away from your family, and everyone has been very helpful. A few times you needed to borrow money, but you paid it back as soon as you could.</u>

  a) You would feel immature.   1---2---3---4---5
                                        not likely   very likely

  b) You would think: "I sure ran into some bad luck." 1---2---3---4---5
                                      not likely   very likely

  c) You would return the favor as quickly as you could. 1---2---3---4---5
                                      not likely   very likely

  d) You would think: "I am a trustworthy person."   1---2---3---4---5
                                      not likely   very likely

  e) You would be proud that you repaid your debts.   1---2---3---4---5
                                      not likely   very likely

9. <u>You are driving down the road, and you hit a small animal.</u>

   a) You would think the animal shouldn't have been   1---2---3---4---5
     on the road.   not likely   very likely

   b) You would think: "I'm terrible."   1---2---3---4---5
                                      not likely   very likely

   c) You would feel: "Well, it was an accident."   1---2---3---4---5
                                      not likely   very likely

   d) You'd feel bad you hadn't been more alert   1---2---3---4---5
     driving down the road.   not likely   very likely

10. <u>You walk out of an exam thinking you did extremely well. Then you find out you did poorly.</u>

   a) You would think: "Well, it's just a test."   1---2---3---4---5
                                      not likely   very likely

   b) You would think: "The instructor doesn't like me."   1---2---3---4---5
                                      not likely   very likely

   c) You would think: "I should have studied harder."   1---2---3---4---5
                                      not likely   very likely

   d) You would feel stupid.   1---2---3---4---5
                                      not likely   very likely

11. <u>You and a group of co-workers worked very hard on a project. Your boss singles you out for a bonus because the project was such a success.</u>

   a) You would feel the boss is rather short-sighted.   1---2---3---4---5
                                      not likely   very likely

   b) You would feel alone and apart from your   1---2---3---4---5
     colleagues.   not likely   very likely

   c) You would feel your hard work had paid off.   1---2---3---4---5
                                      not likely   very likely

d) You would feel competent and proud of yourself.   1---2---3---4---5
                                                        not likely   very likely

e) You would feel you should not accept it.   1---2---3---4---5
                                                        not likely   very likely

12. <u>While out with a group of friends, you make fun of a friend who's not there.</u>

a) You would think: "It was all in fun; it's harmless." 1---2---3---4---5
                                                       not likely   very likely

b) You would feel small...like a rat.   1---2---3---4---5
                                                 not likely   very likely

c) You would think that perhaps that friend should   1---2---3---4---5
have been there to defend himself/herself.   not likely   very likely

d) You would apologize and talk about that person's   1---2---3---4---5
good points.   not likely   very likely

13. <u>You make a big mistake on an important project at work. People were depending on you, and your boss criticizes you.</u>

a) You would think your boss should have been more   1---2---3---4---5
clear about what was expected of you.   not likely   very likely

b) You would feel like you wanted to hide.   1---2---3---4---5
                                                not likely   very likely

c) You would think: "I should have recognized the   1---2---3---4---5
problem and done a better job."   not likely   very likely

d) You would think: "Well, nobody's perfect."   1---2---3---4---5
                                              not likely   very likely

14. <u>You volunteer to help with the local Special Olympics for handicapped children. It turns out to be frustrating and time-consuming work. You think seriously about quitting, but then you see how happy the kids are.</u>

a) You would feel selfish and you'd think you are   1---2---3---4---5
basically lazy.   not likely   very likely

b) You would feel you were forced into doing   1---2---3---4---5

something you did not want to do.   not likely   very likely

c) You would think: "I should be more concerned   1---2---3---4---5
    about people who are less fortunate."   not likely   very likely

d) You would feel great that you had helped others.   1---2---3---4---5
                                            not likely   very likely

e) You would feel very satisfied with yourself.   1---2---3---4---5
                                        not likely   very likely

15. <u>You are taking care of your friend's dog while they are on vacation and the dog runs away.</u>

a) You would think, "I am irresponsible and   1---2---3---4---5
    incompetent."   not likely   very likely

b) You would think your friend must not take very   1---2---3---4---5
    good care of their dog or it wouldn't have run   not likely   very likely
      away.

c) You would vow to be more careful next time.   1---2---3---4---5
                                       not likely   very likely

d) You would think your friend could just get a   1---2---3---4---5
    new dog.   not likely   very likely

16. <u>You attend your co-worker's housewarming party and you spill red wine on their new cream-colored carpet, but you think no one notices.</u>

a) You think your co-worker should have expected   1---2---3---4---5
    some accidents at such a big party.   not likely   very likely

b) You would stay late to help clean up the stain   1---2---3---4---5
    after the party.   not likely   very likely

c) You would wish you were anywhere but at   1---2---3---4---5
    the party.   not likely   very likely

d) You would wonder why your co-worker chose to   1---2---3---4---5
    serve red wine with the new light carpet.   not likely   very likely

Appendix D

Demographics

* 1. What is your sex?

○ Female

○ Male

○ Other (please specify)

[   ]

* 2. What is your age?

[   ]

* 3. Race(s) - Select as many as apply:

☐ European

☐ African

☐ Jamaican

☐ Haitian

☐ Trinidadian or Tobagonian

☐ Other West Indies (Specify Below)

☐ Native American or Alaska Native

☐ Mexican or Chicano

☐ Puerto Rican

☐ Cuban

☐ Other Hispanic, Latino, or Spanish Origin (Specify Below)

☐ Asian Indian

☐ Chinese

☐ Filipino

☐ Japanese

☐ Korean

☐ Vietnamese

☐ Other Asian (Specify Below)

☐ Native Hawaiian

☐ Guamanian or Chamorro

☐ Samoan

☐ Other Pacific Islander (Specify Below)

☐ Some other Race (Specify Below)

☐ Other (please specify)

[   ]

* 6. This scale represents where people stand in their **communities.**

People define community in different ways; please define it in whatever way is most meaningful to you. The **right** most part of the scale represents people who have the highest standing in their community. The **left** most part of the scale represents the people who have the lowest standing in their community.

Where would you place your immediate family (i.e. parents/guardians) on the scale relative to other families in your community?

Lowest   Highest

○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○

* 7. This scale represents where people stand in the **United States.**

The **right** most part of the scale represents people who are the best off - those who have the most money, the most education, and the most respected jobs. The **left** most part of the scale represents the people who are the worst off - those who have the least money, least education, and the least respected jobs or no job. The further to the right you are on the scale, the closer you are to the people at the very top. The further to the left you are on the scale, the closer you are to the people at the very bottom.

Where would you place your immediate family (i.e. parents/guardians) on the scale relative to other people in the United States?

Lowest   Highest

○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○

* 8. Where would you put yourself on this **Political/Societal Values** scale?

Very Conservative	Somewhat Conservative	Leaning Conservative	Moderate	Libertarian	Leaning Liberal	Somewhat Liberal	Very Liberal
○	○	○	○	○	○	○	○

* 9. Where would you put yourself on this **Political Preference** scale?

Strong Republican	Moderate Republican	Independent Leaning Republican	Independent	Libertarian	Independent Leaning Democrat	Moderate Democrat	Strong Democrat
○	○	○	○	○	○	○	○

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