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How Gender Shapes Anger and Aggression

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PSYC599: Master's Thesis

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Abstract

Disordered anger has been associated with a range of threats to individual and public health including increased risk of physical and mental health problems as well as aggressive and violent behavior. Previous research has established relationships between anger, anger expression, and gender. Differences in anger expression may be partially attributed to variation in multiple aspects of gender. Existing literature has been reliant on limited gender identity measures and primarily focused on the role of masculinity as a predictor of aggression and violence. The current study aims to address this gap by using continuous gender items to categorize participants into multifaceted profiles of gender (*Archetypical Men, Archetypical Women, Intertypical Men, Intertypical Women, and Nonconforming*) that are characterized by specific gender identity, expression, and perception scores. The current study explores the relationship between anger and anger expression within and between these gender profiles. An online survey administered a continuous measure of sex and gender along with valid measures of anger and aggression to 152 adult participants. As predicted, results indicated that anger scores were positively associated with anger expression scores. The relationship between anger parameters and anger expression did differ between gender groups, although most comparisons fell short of statistical significance. Unexpectedly, Intertypical Women emerged as the group with the highest anger and anger expression scores. Implications, interpretations, and methodological topics are discussed.

Keywords: anger, aggression, gender, gender norms

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How Gender Shapes Anger and Aggression

Within psychology, the construct of anger is defined as a negative emotional state triggered by a sense of wrongdoing from another person or situation (American Psychological Association, 2022). Anger varies in magnitude (e.g., annoyance, frustration, rage) and though experiencing anger is part of normative psychology, excessive anger is a serious concern for public health. A national survey of 34,000 U.S. adults indicated that about 8% of the population displayed disordered anger expression (Okuda et al., 2014). The consequences of disordered anger expression can be seen in aggressive and violent behavior throughout society. In 2019, the United States alone had over 19,100 homicides and more than 1.5 million people required emergency treatment for an assault-related injury (Centers for Disease Control and Prevention, 2022). The World Health Organization (WHO; 2022) Violence Prevention Unit has taken a social ecological approach to addressing violence that examines psychosocial factors that underlie maladaptive anger and anger expression within individuals, relationships, communities, and society. The current study is guided by this approach in an effort to better understand how individual characteristics influence anger and aggression.

Existing literature often documents gender differences where men tend to exhibit more anger, aggression, and violence than women (e.g., Björkqvist, 2018; Hyde, 1984; Knight & Higgins, 1996; Okuda et al., 2014). Yet, other research has found no significant differences in anger between sex or gender groups (Fields, 2015; Fernandez et al., 2014). This suggests that the effects attributed to sex or gender identity in past research may be shaped more by individual differences rather than gender identity alone. Drawing from the perspective that gender is a social construct, those differences may be better explained by other factors like variation in enactment of gender roles. For example, if a society with patriarchal values prescribes an

aggressive gender role enactment for men, then men who express gender typicality would be expected to behave more aggressively. There is empirical support for this view as factors surrounding gender such as how individuals express traits and adhere to societally prescribed gender roles have emerged as useful behavioral markers in predicting anger and aggression (e.g., Berke et al., 2015; Kopper, & Epperson, 1996; Mahalik et al., 2003).

The current research aims to examine how multiple aspects of gender influence the relationship between anger and anger expression. Previous research in this area is largely reliant on binary measures of gender identity and often conflates biological sex with gender (Cameron & Stinson, 2019). This study seeks to expand on previous work by employing multifaceted gender measures along with dimensional measures of anger and anger expression to explore this phenomenon. The results of this research have the potential to help identify at-risk groups and inform personalized interventions aimed at mitigating outcomes associated with maladaptive anger and aggression.

Literature review

The Experience and Expression of Anger

Anger is an especially complex construct as it exists as an emotional state as well as a constituent of mood and personality traits (Fernandez & Malley-Morrison, 2013). Additionally, since anger is typically precipitated by a sense of wrongdoing, that subjective interpretation is dependent on individual differences in traits, values, and motivations. Further, although anger as a cognitive affect is unpleasant, anger may sometimes lead to reward as a mechanism to address internal and external conflict. A systematic approach to investigating anger as a construct should consider this complexity along with congruent psychosocial variables.

In examination of outcomes and concepts related to anger, it is helpful to consider the different aspects of how anger is experienced, such as how frequently it occurs, how long it lasts, and how intense it is (Fernandez et al., 2001; 2010; 2014). For example, an isolated anger event as an emotional state may be described appropriately through parameters of anger, such as intensity or latency (how quickly anger arises). Alternatively, more frequent and longer lasting anger over time conceptually aligns with an angry temperament or trait anger. In fact, more frequent and intense anger significantly predicts increased psychopathology and a range of mental health disorders (Fernandez et al., 2016; 2018). Borderline personality disorder, intermittent explosive disorder, and disruptive mood dysregulation disorder are all characterized in part by disproportionate anger response (American Psychiatric Association, 2013). Disordered anger intensity and frequency have been shown to be predictive of higher stress (Benson & Karlof, 2009) as well as anxiety and depression symptomatology (Barrett et al., 2013; Bridewell & Chang, 1997; Galambos et al., 2018). Further, anger intensity and frequency has been positively associated with increased risk of cardiovascular disease (Haukkala et al., 2010; Williams et al., 2000), diabetes (Abraham et al., 2015), and respiratory illness (Vandervoort et al., 1996).

The feeling of anger typically involves subsequent reactivity, or anger expression, in response to perceived transgressions (Fernandez & Johnson, 2016; Fessler, 2010). It is noteworthy that although anger often precipitates aggression and violence, most anger does not result in aggression (Averill, 1983; Berkowitz, 1990). While anger is a distinct emotion, aggression refers to behavior intended to cause harm. Anger expression can vary widely from internally avoiding, suppressing, or controlling anger to externally directing anger in the form of hostile or aggressive behavior (Fernandez et al., 2001; 2008). This underscores the importance of

taking a nuanced approach to understanding how individual differences contribute to variation in anger expression, as well as considering the different aspects of anger expression to capture a broad range of behavioral outcomes.

There is much empirical evidence linking how individuals experience and express anger with subsequent aggressive behaviors (e.g., Fernandez et al., 2001; 2008; Fernandez & Johnson, 2016; Fessler, 2010). Additionally, patterns in the research reveal that specific aspects of anger and anger expression are interrelated. For example, those with higher levels of trait anger (i.e., high in frequency and duration) tend to display more aggression and automatically approach, as opposed to avoid, hostile interactions (Veenstra et al., 2017). Similarly, trait anger and hostility have been longitudinally associated with social aggression, like trying to hurt someone's feelings (Li et al., 2020), in addition to direct aggression and violence (Turner & White, 2015; Quan et al., 2021). The Centers for Disease Control and Prevention (2022) reports that over 80 million Americans have experienced, abuse, aggression, or violence occurring in a romantic relationship (2022). Many studies have related maladaptive anger and anger expression to intimate partner aggression (IPA) and intimate partner violence (IPV; i.e., Armenti et al., 2018; Sommer & Babcock, 2019). In adult couples, anger frequency, intensity, and duration has been positively linked with maladaptive cognitions and IPA perpetration (Massa et al., 2019). The work of Sommer and Babcock (2019) also revealed an actor effect such that one's own contemptuous expression of anger was related to their perpetration of physical assault on their partner. Abusive men with higher levels of anger were more likely to justify and see benefits to their aggressive behavior (Nedegaard & Sbrocco, 2014). This establishes a clear connection between levels of anger parameters with dimensions of anger expression such as objective, modality (physical as opposed to verbal), and direction (toward a transgressor).

Gender Differences in the Experience and Expression of Anger

There is plenty of research that upholds the typical social narrative that men are more angry and aggressive than women. For example, strong gender differences were found in state and trait anger measures that examine anger parameters like intensity and frequency (**Bartlett et al., 2018; Forgays et al., 1998**). Additionally, many studies have concluded that men seem to exhibit higher levels of violence and aggression than women, from childhood and adolescence (e.g., Fives et al., 2010; Owens & MacMullin, 1995) through adulthood (e.g., Björkqvist, 2018; Hyde, 1984; Knight & Higgins, 1996; Okuda et al., 2014). Although gender differences in anger expression appear consistently throughout previous research, a more in-depth analysis reveals that the genders are not as different as they seem when evaluating more closely the facets of the experience and expression of anger. First, several studies have found that men and women do not typically differ in the level of anger experienced (Campbell & Muncer, 2008; Fernandez, et al., 2014; Fernandez & Malley-Morrison, 2013; Kim et al., 2022). Further, the differences found in anger expression may be from how aggression is operationalized. While men exhibit significantly greater levels of explosive aggressiveness, women are more likely to engage in non-violent and indirect forms of aggression (Campbell & Muncer, 2008; Richardson & Green, 1999). Additionally, an abundance of meta-analytic evidence shows that sex and gender differences in aggression tend to diminish when controlling for contextual factors, such as provocation and aggression type (Bettencourt & Kernahan, 1997; Bettencourt, & Miller, 1996; Cohn et al., 2009). So, if anger is recognized as a precursor to aggression, and disparities in aggression are not occurring because gender differences in anger, then it is essential to consider which aspects of gender are contributing to these differential outcomes.

Anger and aggression outcomes may be shaped by how gender expression is aligned with gender norms that encourage anger, hostility, and aggression in men while discouraging this behavior in women. Gender expression is the way someone enacts traits or behaviors that correspond to their gender identity and gender norms (APA, 2015). Gender norms are socially constructed roles, characteristics, and behaviors prescribed by society that are attributed to masculinity or femininity (APA, 2011; Mahalik et al., 2003). This is in alignment with a social constructivist explanation of this phenomenon where patriarchal gender norms dictate that aggression and dominance are rewarded and serve to empower men, or those who display high masculinity. Conversely, feminine norms emphasize appeasement, submission, and disempowerment of women, or those perceived as feminine (e.g., Connell, 1987; Connell & Messerschmidt, 2005; Messerschmidt & Messner, 2018). This conceptual approach to explaining aggression has empirical support. The effect of anger on aggression is amplified in men with self-esteem that is dependent on social approval (Turner & White, 2015). Additionally, violence, dominance, and power over women have been consistently identified as distinct factors of masculinity in validated instruments (Mahalik et al., 2003; Parent & Moradi, 2009). In contrast, dimensions of femininity prioritize traits focused on maintenance of relationships with others like modesty, being sweet and nice, and putting others first (Mahalik et al., 2005; Parent & Moradi, 2010). This theoretical framework begins to elucidate how gender differences in aggression can be viewed as a subset of societally affirmed gender expressing behaviors.

How individuals' express gender has shown utility as predictors of a range of outcomes, particularly anger and aggression. There is extensive evidence linking masculine norms and expression to anger and maladaptive anger expression. For example, conformity to masculine norms have been positively associated with aggression (Mahalik et al., 2003), IPV perpetration

(Jakupcak et al., 2002), and homophobic aggression (Parrott, 2009; Poteat et al., 2011; Vincent et al., 2011). Gender expression that enacts restrictive, sexist, and oppressive gender norms is thought to cause distress (Pleck, 1995; Levant, 2017) described as gender role stress (GRS; Eisler et al., 1988) or gender role conflict (GRC; O'Neil et al., 1986; 2017). In men, GRS (Moore & Stuart) and GRC (Berke et al., 2015) have been associated with more frequent anger, reactive aggression, and violent behavior. Additionally, GRS is linked greater anger duration and aggressive intentions over time in men (Coleman et al., 2009). In contrast, feminine gender expression has been negatively associated with violent aggression in both women (Dickinson, 2007; Hayley et al., 2017) and men (Coleman et al., 2009). In research where masculinity was associated with more aggression and uncontrolled anger, femininity predicted less outwardly aggressive and violent behavior (Kopper, & Epperson, 1996). In the same study, masculinity significantly added to the model predicting mental health variables, but femininity or androgyny did not. Similarly, threats to masculinity led to aggression in men, yet women were not more aggressive as a result of threats to femininity (Stanaland & Gaither, 2021; Vandello et al., 2008). These results bolster the view that a large part of gender normative expression is defined by whether anger is expressed passively or aggressively.

Measuring Gender

The documented gender differences in aggression are complicated by issues with inconsistent and inappropriate instrumentation. Previous literature is dominated by methods reliant on categorical gender measures that are insufficient to capture variability in gender (Hart et al., 2019) and gender is often conflated with biological sex (Cameron & Stinson, 2019). Imposing a binary choice between man or woman essentially forces arbitrary splits in the data and presents a rudimentary, if not false, dichotomy (Hyde et al., 2019). This is problematic in promoting gender essentializing stereotypes as well as increasing the risk of error and bias in

research. Further, conceptualizing gender as a multifaceted spectrum is increasingly considered to be a better ethical and methodological approach (e.g., APA, 2015; Hart et al., 2019; Hyde et al., 2019; Tate et al., 2013). This raises questions regarding how effects previously attributed to being a man or woman may be better explained. Critics of existing measures of gender have pointed out limitations and called for finer-grained research on the multiple aspects of gender using continuous scales (e.g., Brenøe et al., 2022; Hart et al., 2019; Lindqvist et al., 2021; Marcotte et al., in review). As masculinity and femininity are not mutually exclusive, measures can reflect that by using separate scales that allow variation. Considering the documented connections between gender and aggression, a more sensitive measure of gender may enhance the understanding of the role of gender in how anger manifests.

Findings from several studies indicate that while most people report gender identity that corresponds with their sex at birth, the vast majority do not view themselves as very masculine or feminine (Berenbaum, 2018; Hart et al., 2019; Magliozzi et al., 2016; Marcotte et al., in review). Similarly, while most people strongly identified as either a man or a woman, there is much greater diversity in gender expression (e.g., Levitt et al., 2012; Marcotte et al., 2022 [in review]). Variation in gender expression can correspond to attitudes and behavior (Gordon et al., 2021; Sanford et al., 2021). For example, men with some variability in gender expression tend to feel less pressure to conform to gender norms (Nielson et al., 2022). Variability in gender identity, expression, and perception can be described gradationally through the concept of polarization (e.g., Saperstein & Westbrook, 2021; Magliozzi et al., 2016; Marcotte et al., in review). For example, someone identifies totally as a man and not at all as a woman would be polarized in gender identity. However, the same individual could express varying masculine and feminine traits and therefore would not be polarized in gender expression. This bolsters the

assertion that behaviors largely attributed to gender identity and sex may be better explained through considering the many facets of gender.

Recent research by Marcotte et al. (2022) explored the utility of using a more comprehensive measure of gender. Five distinct, multifaceted gender categories emerged that are characterized by unique profiles of gender identity, expression, and perception scores, as well as variation in conformity to specific masculine norms and sexist beliefs held by those within groups. Archetypical men and women were highly polarized in their gender identity and expression and endorsed strict gender norms for men and sexist beliefs about men and women. Intertypical men and women strongly identified with their respective gender identity yet varied in their masculine and feminine gender expression. Nonconforming individuals were nonpolarized in identity, expression, and perception. These profiles offer more nuanced measurement where conventional methods may mask variation. This is relevant in the effort to gain insight into how and why gender is related to anger and aggression. Given the body of research linking gender norms with anger and aggression (e.g., Jakupcak et al., 2002; Kopper, & Epperson, 1996; Mahalik et al., 2003; Parrott, 2009; Vincent et al., 2011) gender polarization may be similarly associated with those outcomes. Therefore, gender polarization shows potential utility as a versatile measure of gender and as a proxy variable for enactments of gender, such as conformity to gender norms, that are relevant to explaining individual differences in anger and aggression.

The Current Study

The preceding review establishes a pattern in the research that supports the connections between multiple aspects of gender and anger expression. Specifically, those with more polarized masculine gender profiles are more likely to exhibit aggressive anger expression, whereas

those with more polarized feminine profiles are less likely to express anger outwardly, especially aggressively or violently. The purpose of this study is to enhance the understanding of anger and aggression by thoroughly investigating the role of gender in people's experience of anger and their risk for engaging in aggressive behavior. Additionally, the current study aims to expand on existing research that has primarily focused on masculinity and binary gender measures in relation to anger and aggression by utilizing a more comprehensive measure of gender that considers the facets of gender identity, expression, and perception (Marcotte et al., 2022 [in review]). A survey was conducted to examine how gender identity and expression are associated with an individual's anger and anger expression. Considering the established relationships between the experience of anger, the expression of anger, and gender, it is expected that:

- H₁: Overall anger parameters (APS) scores will be positively correlated with overall anger expressions (AES) scores.
 - H_{1A}: APS subscales Intensity and Frequency will be positively correlated with AES subscales Locus (more outwardly focused externalized anger), Reaction (avoidant vs. retaliatory) and Modality (higher levels of physical and verbal expression of anger).
- H₂: There will be significant differences between gender groups in anger parameters such that:
 - H_{2A}: Archetypical Men will be highest on APS Total score and all five anger APS subscales (Frequency, Duration, Intensity, Latency, and Threshold).
 - H_{2B}: Archetypical Women are expected to be lowest on APS Total score and all five anger APS subscales (Frequency, Duration, Intensity, Latency, and Threshold).

- H₃: There will be significant differences between gender groups in anger expressions such that:
 - H_{3A}: Archetypical Men will be highest on AES Total score and all six AES subscales (Locus, Impulsivity, Direction, Modality, Reaction, Objective).
 - H_{3B}: Archetypical Women are expected to be lowest on AES Total score and all six AES subscales (Locus, Impulsivity, Direction, Modality, Reaction, Objective).

Methods

Participants

Participants ($N = 152$) were recruited through Prolific Academic (prolific.ac) a tool created by and for academics to recruit participants for online research studies paid \$4 for their participation. The study was titled "Common Reactions to Angering Situations" and the abstract stated: "The purpose of this research is to learn about ways that everyday people feel in hypothetical situations that may cause anger". The same recruitment message was used on the Prolific website as the description of the research. The survey was approved by the Rhode Island College IRB (Protocol: 2122-2318) under expedited review and considered only a minimal risk to participants, i.e., the same level or risk that they would encounter in their daily lives. Participants ranged in age from 19–79 ($M = 40.13$, $SD = 13.684$). For a full breakdown of demographic data see Table 1. The sample skewed toward being more educated than the norm

(US Census, 2022) with 23% having some college education and 61.8% having college degrees. The sample also leaned left in political preference (23% Republican, 19.1% Independent, 57.9% Democrat) and social values (30.9% conservative, 69.1% liberal). 54.6% of participants reported annual income of 50,000 or above and overall people rated themselves as higher than average in subjective SES (SES comm $M=5.28$, SES US $M=5.34$).

Procedure

After reading through the informed consent, participants were asked a series of questions relating to anger, aggression, and hostility. Afterwards, they responded to questions about their sex at birth categorically and on a spectrum, their gender identity, and then their gender expression. Lastly, they responded to demographic questions (i.e., subjective SES, political and social values, state of residence, year of birth, household income, race, education, relationship status, and sexual/romantic orientation). The entire procedure took about 30 minutes to complete.

Sex and Gender Measures

Sex at Birth and Sex Spectrum

Biological sex questions used a two-step model. First, participants were given the prompt and following question: “Most people are assigned a specific sex at birth, even if it is not how they identify later in life. Which sex were you assigned at birth (for example, on your birth certificate)?” and selected either male, female, intersex, or other with a write-in option to specify. Participants were then shown the sex spectrum chart that describes nine variations of biological sex (Ainsworth, 2015) and asked: “To the best of your knowledge, where would you place yourself on the Sex Spectrum above?” Options were: (1) Typical male; (2) Male with Subtle Variations; (3) Male with Moderate Variations; (4) 46 XY/ DSD (Testes w/ Ambiguous

Genitals); (5) Ovotesticular DSD (XX, XY, or a mix of both; Both ovarian and testicular tissue); (6) 46, XX testicular DSD (Small testes); (7) Female with Moderate Variations; (8) Female with Subtle Variations; (9) Typical Female.

Gender Identity

For the measure of Gender Identity, participants were given the following prompt “Gender Identity is one's innermost concept of their self as being male, female, a blend of both, or neither – it is how individuals perceive themselves and what they call themselves. One's gender identity can be the same or different from their sex assigned at birth.” Next, participants were asked two questions: “Where would you put yourself on this scale for Women’s/Men’s Gender Identity (that is, the subjective sense of being a woman/man)?” Responses ranged from *not at all* to *very much* and were collected via sliding a scale without numerical reference to avoid the perception of needing to add up to a certain amount.

Gender Expression

For the measure of Gender Expression, participants were given the following prompt: “Gender Expression is the external appearance of one's identity, usually expressed through gender stereotypical traits such as behavior, clothing, interests or hobbies, haircut or voice, which may or may not conform to socially defined behaviors and characteristics typically associated with being either masculine or feminine.” Participants then answered two questions: “Where would you put yourself on this scale for Feminine/Masculine Gender Expression?” Responses were given via sliding scale ranging from *absolutely no* feminine or masculine traits to *exclusively* those traits.

Gender Perception

For the measure of Gender Perception, participants were asked two questions: “How do you think others view your feminine/masculine expression?” Responses were given via sliding scale ranging from *not at all* to *very much*.

Gender Identity Polarization

A gender identity polarization variable score will be calculated from responses to the gender identity questions. The score will be calculated as the absolute value of the difference between each person’s responses on the two gender identity scales in alignment with Magliozzi et al. (2016) and Marcotte et al. (in review). Identification as “very much” a man and “not at all” a woman man would score 100 and indicate extreme gender identity polarization. Variation on either scale brings scores closer to 0.

To create gender categories, a cluster analysis procedure was performed using gender identity groups, gender expression polarization, and gender perception polarization scores. For detailed procedure, see Marcotte et al. (2022).

Anger and Anger Expression measures

Anger

The Anger Parameters Scale (APS; Fernandez et al., 2010, 2014) was used to assess five parameters of anger: (1) Frequency, how often someone experiences anger (high vs low); (2) Duration, how long anger lasts (short vs long); (3) Intensity, referring to the magnitude of anger experienced (weak vs strong); (4) Latency, how quickly anger arises after anger induction (slow vs fast); and (5) Threshold, indicating sensitivity to anger-provoking stimuli (insensitive vs sensitive). The five parameters of the APS are each measured by six items, and participants were asked to rate how true each statement is for them on a 0 (*not at all like me*) to 4 (*totally like me*) rating scale. Examples of items per parameter are as follows: ‘Anger is my least common

emotion' (Frequency), 'My anger is prolonged' (Duration), 'I explode with anger' (Intensity), 'I am slow to anger' (Latency) and 'A single provocation is enough to anger me' (Threshold). Half of the 30 items of the APS are negatively keyed and therefore reverse scored. The higher the scores, the more that parameter tends towards maladaptiveness. The APS has been psychometrically evaluated (Fernandez et al., 2010, Henderson, 2016). and found to have factorial validity, temporal stability and internal consistency with Cronbach's alpha as follows: 0.85 for Frequency, 0.90 for Duration, 0.62 for Intensity, 0.88 for Latency, 0.74 for Threshold, and 0.937 for the overall scale (Fields, 2015). Upon exploratory analysis of APS subscales, Intensity emerged a problematic as it had insufficiently low reliability ($\alpha= 0.459$). Closer inspection revealed that oppositely keyed items were conceptually aligned and should be coded likewise to capture the construct efficiently. Further, item 1 "*I My anger takes the form of annoyance*" was shown to be detrimental to reliability and subsequently dropped from the scale. Following the revisions, the recoded Intensity subscale had much improved reliability ($\alpha= 0.713$).

Anger Expression

The Anger Expressions Scale (AES; Fernandez et al., 2010, 2014) was used to assess six dimensions of anger expression: (1) Locus, related to suppressing anger or directing it outwardly (internal to external); (2) Impulsivity (controlled or uncontrolled) ; (3) Direction, expressing anger towards the source of anger or other targets (reflection to deflection); (4) Modality, levels of physical and verbal expression of anger; (5) Reaction, which distinguishes between avoidant resistance and retaliation; and (6) Objective, which relates to goals of either restoration from or retribution to the source of anger. Example items include: "I let out my anger" (Locus), "I pause and reflect when I am angry." (Impulsivity), "I direct my anger only at those who offend me."

(Direction), “I express my anger physically.” (Modality), “I go on the attack when angered.” (Reaction), and “When angry, I try to get over it.” (Objective) and for each statement the scale ranges from 0 (*not at all like me*) to 4 (*totally like me*). To get a final score, questions 2, 4, 7, 8, 13, 14, 19, 27, and 33 must be reverse coded. The higher the scores, the more that dimension tends towards maladaptiveness. The AES has been psychometrically evaluated and found to have factorial validity, temporal stability and internal consistency with Cronbach’s alpha as follows: 0.85 for direction, 0.856 for locus, 0.647 for reaction, 0.666 for modality, 0.846 for impulsivity, 0.367 for objective, and 0.707 for the overall scale (Fields, 2015). Upon exploratory analysis of AES subscales, Objective displayed insufficiently low reliability ($\alpha= 0.311$). Closer inspection revealed that similarly keyed items were conceptually opposed and should be coded likewise to capture the construct efficiently. For example, item 1 “*When angry, I try to get over it*” and item 4 “*When angry, I try to get even*” were originally coded the same, arguably misrepresenting and failing to capture the construct of objective. When conceptually opposed items were reverse coded the reliability greatly improved ($\alpha= 0.511$).

Social Desirability

The Marlowe-Crowne Social desirability was assessed using a 13-item short form of the Marlowe–Crowne Social Desirability Scale (Crowne & Marlowe, 1960; Reynolds, 1982). The Marlowe–Crowne SF-13 is highly correlated with the standard 33-item version of the Marlowe–Crowne ($r= .93$)(Reynolds, 1982). Consistent with past research, the scale has adequate internal reliability in the current sample ($\alpha= .785$). This scale has been used commonly in research on anger and aggression to address issues with social desirability bias when using self-report measures (Fernandez et al., 2018; Levesque et al., 2000).

Demographics

Participants were lastly asked to report demographic information as reported above in the Procedure section.

Results

H₁: APS total scores will be positively correlated with AES total scores. A Pearson's product-moment correlation was run to assess the relationship between anger parameters scores and anger expressions scores. There was a statistically significant, strong positive correlation between APS and AES scores, $r(150) = 0.708, p < .001$, with anger parameters explaining about 50% of the variation in anger expressions.

H_{1A}: APS subscales Intensity and Frequency will be positively correlated with AES subscales Locus (more outwardly focused externalized anger), Reaction (avoidant vs. retaliatory) and Modality (higher levels of physical and verbal expression of anger). There was a statistically significant, small positive correlation between Intensity and Locus, $r(150) = 0.256, p = .001$, strong positive correlation between Intensity and Reaction, $r(150) = 0.564, p < .001$, and a statistically significant, strong positive correlation between Intensity and Modality, $r(150) = 0.574, p < .001$. There was a statistically significant, small positive correlation between Frequency and Locus, $r(150) = 0.244, p = .002$, moderate positive correlation between Frequency and Reaction, $r(150) = 0.449, p < .001$ and between Frequency and Modality, $r(150) = 0.708, p < .001$.

See Table 2 for all correlation coefficients.

H₂: There will be significant differences between gender groups in anger parameters such that: H_{2A}: Archetypical Men will be highest on APS Total score and all five anger

parameters subscales (Frequency, Duration, Intensity, Latency, and Threshold). H_{2B}: Archetypical Women are expected to be lowest on APS Total score and all five anger APS subscales (Frequency, Duration, Intensity, Latency, and Threshold). Archetypical Men had higher scores on APS Total than Archetypical Women, yet the difference was not statistically meaningful ($p > .05$). This was the case for other comparisons between groups where Archetypical Men had higher scores on APS Total than Nonconforming and Intertypical Men, yet the differences were not statistically meaningful. Similarly, there were no statistically meaningful differences between Archetypical Men and Archetypical Women, Nonconforming, or Intertypical Men on any of the individual APS subscales (Frequency, Duration, Intensity, Latency, and Threshold). However, there were unexpected differences between Archetypical Men and Intertypical Women. Specifically, Archetypical Men had LOWER scores on APS Total than Intertypical Women, yet the difference was NOT statistically meaningful ($p > .05$). Additionally, Intertypical Women had higher scores on anger Duration than Archetypical Men, a statistically meaningful medium difference ($d = .498$), $M = 2.769$, 95% CI [-5.524, -0.014], $t(75) = -2.002$, $p = .024$. There were no statistically significant differences between Archetypical Men and Intertypical Women on other APS subscales (Frequency, Intensity, Latency, and Threshold). See Table 3 for means and standard deviations of APS Total and subscales for each gender profile.

H₃: There will be significant differences between gender groups in AES Total such that: H_{3A}: Archetypical Men will be highest on AES Total and all six anger expressions subscales (Locus, Impulsivity, Direction, Modality, Reaction, Objective). H_{3B}: Archetypical Women are expected to be lowest on AES Total score and all six AES subscales (Locus, Impulsivity, Direction, Modality, Reaction, Objective). Unexpectedly, Archetypical Men had

lower scores on AES Total than Archetypical Women, Intertypical Women, and Nonconforming yet the difference was not statistically meaningful ($p > .05$). Archetypical Men had higher scores on AES subscale Objective than Archetypical Women, a statistically meaningful small difference ($d = .398$), $M = 1.46667$, 95% CI [-0.1056, 2.94389], $t(97) = 1.971$, $p = .026$. There were no statistically meaningful ($p > .05$) differences between Archetypical Men and Archetypical Women, Nonconforming, or Intertypical Men on any of the other AES subscales (Locus, Impulsivity, Direction, Modality, Reaction). Unexpectedly, Archetypical Men had LOWER scores on AES Total than most groups including Archetypical Women, yet the difference was not statistically meaningful ($p > .05$). Additionally, Intertypical women had higher scores on anger expression Reaction than Archetypical Men, a statistically meaningful medium difference ($d = .642$), $M = 2.588$, 95% CI [-4.587, -0.588], $t(75) = -2.578$, $p = 0.006$. See Table 3 for means and standard deviations of AES Total and subscales for each gender profile.

Follow-Up Analyses

As there were few statistically meaningful differences in APS and AES between the 5 gender categories, further t -tests were run using gender identity as a dichotomous grouping variable. Overall, these group differences were similar to previous results where there were no statistically meaningful differences between those who identified as Men ($n = 77$) or Women ($n = 68$). However, in further alignment with previous results, there were unexpected differences where Women ($M = 18.03$, $SD = 4.09$) had higher scores on Reaction than Men ($M = 16.81$, $SD = 4.41$) a statistically meaningful small difference ($d = .287$), $M = 1.224$, 95% CI [-0.177, 2.625], $t(143) = 1.727$, $p = 0.043$.

Follow up analyses were conducted to see how demographic variables were related to APS and AES measures. There was a statistically meaningful small negative correlation between

age and: Duration ($r(150) = -.202, p = .013$), Intensity ($r(150) = -.177, p = .029$), Direction, ($r(150) = -.211, p = .009$), and Objective ($r(150) = -.254, p = .002$). Additionally, there was a statistically meaningful small positive correlation between age and Locus ($r(150) = -.177, p = .029$).

Further analyses were run to examine if education, social values, or political preference were related to APS and AES variables and there were no statistically meaningful relationships found. Overall, measures of SES were also unrelated to most APS and AES variables. However, there was a small positive relationship between income and Direction of anger expression $r(150) = .219, p = .007$. Further, both subjective measures of SES were negatively correlated with anger Duration (SES Comm, $r(150) = -.194, p = .017$, SES US, $r(150) = -.224, p = .006$).

The **Marlowe-Crowne Social Desirability Scale** (MCSDS) (Reynolds, 1982) has been used in previous research on anger, aggression, and violence to assess the influence of social desirability bias on self-report responses (Fernandez et al., 2014; Levesque, 2000). The current sample had a MCSDS score of ($M = 18.99, SD = 3.24$). There was a moderate negative relationship between Social Desirability and APS $r(150) = -.467, p < .001$ as well as AES $r(150) = -.515, p < .001$.

Table 1. *Demographics.*

	Gender											
	Archetypical Men <i>n</i> = 54		Intertypical Men <i>n</i> = 23		Nonconforming <i>n</i> = 7		Intertypical Women <i>n</i> = 23		Archetypical Women <i>n</i> = 45		Total <i>n</i> = 152	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	37.26	14.65	38.43	10.57	39.86	14.37	37.39	8.81	45.87	14.56	40.13	13.68
SSES Community	5.65	1.76	5.09	2.17	4.43	1.72	4.83	1.70	5.29	1.52	5.28	1.76
SSES US	5.63	1.80	4.96	2.31	4.57	1.90	5.22	1.76	5.38	1.45	5.34	1.79
Political Pref	4.19	1.83	5.57	1.24	5.14	1.07	5.48	1.62	4.56	2.25	4.74	1.90
Social Values	3.56	1.57	5.04	1.11	5.14	1.07	4.91	1.20	4.02	1.82	4.20	1.63
	<i>n</i>		<i>n</i>		<i>n</i>		<i>n</i>		<i>n</i>		<i>N</i>	<i>%</i>
<u>Income</u>												
less than 10,000	3		3		2		4		2		14	9.21
10,000 to 19,999	6		1		1		1		3		12	7.89
20,000 to 29,999	4		2		1		1		7		15	9.87
30,000 to 39,999	2		3		1		3		5		14	9.21
40,000 to 49,999	5		0		1		1		7		14	9.21
50,000 to 59,999	4		2		0		4		8		18	11.84
60,000 to 69,999	7		1		0		1		1		10	6.58
70,000 to 79,999	4		3		0		1		0		8	5.26
80,000 to 89,999	1		1		0		2		2		6	3.95
90,000 to 99,999	3		2		0		0		2		7	4.61
100,000 to 149,999	11		2		1		2		5		21	13.82
150,000 or more	4		3		0		3		3		13	8.55
<u>Education Level</u>												
Less than HS	0		0		0		1		1		2	1.32
HS Diploma/GED	6		6		1		0		8		21	13.82
Some College	14		4		3		5		9		35	23.03
Associate Degree	6		2		0		1		3		12	7.89
Bachelor's Degree	20		6		1		9		15		51	33.55
Master's degree	6		4		2		6		8		26	17.11
Doctoral degree	0		1		0		0		1		2	1.32
Prof degree (JD, MD)	2		0		0		1		0		3	1.97

	Gender						Total <i>n</i> = 152
	Archetypical Men <i>n</i> = 54	Intertypical Men <i>n</i> = 23	Nonconforming <i>n</i> = 7	Intertypical Women <i>n</i> = 23	Archetypical Women <i>n</i> = 45		
<u>Race/Ethnicity</u>							
White	45	20	5	16	42	128	84.21
Black	4	0	1	3	0	8	5.26
AfrAmer	2	0	0	2	1	5	3.29
Latino	0	0	1	2	2	5	3.29
Spanish	1	0	0	0	1	2	1.32
SoutheastAsian	1	2	0	2	1	6	3.95
EasternAsian	2	1	1	1	1	6	3.95
SouthAsian	1	0	0	0	1	2	1.32
NativeIsland	0	0	0	0	1	1	0.66
NativeAmer	0	0	1	0	0	1	0.66
Multicultural	1	0	0	1	1	3	1.97
Other	0	1	0	0	0	1	0.66

Note. * For Race and Ethnicity, participants were allowed to select all that apply, so the total may differ from sample size.

Table 2. *Correlations between Anger Parameters Scale and Anger Expressions Scale.*

	1	2	3	4	5	6	7	8	9	10	11	12
1. APS	.											
2. AES	.708**	.										
3. Frequency	.831**	.600**	.									
4. Duration	.700**	.430**	.411**	.								
5. Intensity	.800**	.682**	.664**	.481**	.							
6. Latency	.629**	.444**	.371**	.199*	.361**	.						
7. Threshold	.886**	.595**	.775**	.469**	.631**	.554**	.					
8. Locus	.298**	.665**	.244**	.065	.256**	.374**	.250**	.				
9. Impulsivity	.605**	.807**	.532**	.280**	.644**	.411**	.512**	.443**	.			
10. Direction	.428**	.485**	.460**	.195*	.379**	.183*	.452**	.028	.406**	.		
11. Modality	.541**	.838**	.494**	.309**	.574**	.314**	.422**	.629**	.583**	.196*	.	
12. Reaction	.599**	.763**	.449**	.465**	.564**	.316**	.510**	.281**	.600**	.244**	.628**	.
13. Objective	.495**	.540**	.311**	.570**	.452**	.201*	.326**	.170*	.310**	.109	.359**	.455**

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

Table 3. Means and Standard Deviations of Dependent Variables for Each Gender Profile

	Gender Profile											
	Archetypical Men (<i>n</i> = 54)		Intertypical Men (<i>n</i> = 23)		Non-Conforming (<i>n</i> = 7)		Intertypical Women (<i>n</i> = 23)		Archetypical Women (<i>n</i> = 45)		Total (<i>N</i> = 152)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
APS Total	39.15	18.86	37.43	17.03	38.43	29.02	43.26	18.67	33.60	18.42	37.84	18.99
AES Total	60.5	18.91	58.22	15.41	68.71	24.34	63.17	17.21	62.67	18.03	61.58	18.08
Frequency	5.63	5.05	4.52	5.18	5.29	7.25	5.39	3.96	4.71	4.97	5.14	4.96
Duration	8.79	5.43	9.61	5.47	7.29	5.91	11.57	5.85	7.02	6.51	8.74	5.98
Intensity	6.26	4.09	6.35	4.18	7.29	7.06	6.61	4.53	5.02	3.79	6.01	4.25
Latency	11.54	4.42	10.17	3.16	11.43	6.53	11.74	5.18	10.64	5.10	11.09	4.67
Threshold	6.93	5.08	6.78	4.13	7.14	8.71	7.96	4.73	6.20	4.51	6.86	4.90
Locus	10.85	5.68	9.61	5.31	13.14	7.80	9.48	4.48	10.91	5.38	10.58	5.47
Impulsivity	7.2	5.02	6.13	3.98	9.71	8.08	7.96	5.07	7.89	5.17	7.47	5.09
Direction	6.17	4.62	5.17	3.58	4.29	4.68	6.87	4.86	6.11	5.12	6.02	4.66
Modality	11.54	5.02	10.91	4.04	12.86	3.98	11.35	4.33	11.67	4.14	11.51	4.44
Reaction	10.62	4.37	11.22	4.56	12.00	4.69	13.22	3.06	11.42	4.43	11.41	4.29
Objective	9.56	3.85	9.17	2.71	7.86	2.27	9.43	3.33	8.09	3.47	8.97	3.47

Discussion

The present research yielded a mix of results as just two of five main hypotheses were supported. As predicted, overall anger and specific anger parameters were generally associated with overall anger expressions and individual dimensions. Additionally, some support was found for the hypothesis that Nonconforming and Intertypical groups would tend to have similar scores on anger and anger expression measures. Counter to expectation, Archetypical Men were not meaningfully higher on most overall anger or anger expression scales. Unexpectedly, Intertypical Women emerged as being a group that had highest anger and anger expression scores, more characteristic of what was expected of Archetypical men. Social desirability also appeared to be influential to anger and anger expression responses. Together, these results challenge some of the conceptual assumptions that the current hypotheses were designed to test. That is, there was no evidence of a continuum of aggression ranging from Archetypical Men on the high end to Archetypical Women on the low end.

Anger and Anger Expression

The results of this study confirm initial expectations that how individuals experience anger is related to aggressive behavior, consistent with previous literature that links anger with disordered anger expression (e.g., Fernandez et al., 2001; 2008; Fernandez & Johnson, 2016; Fessler, 2010). While these results were correlational, they align with the work of Fernandez and Johnson (2016) and Fessler (2010) who describe aggression as a response to anger elicited by perceived transgressions. In the present sample, anger statistically explained about 50% of the variance in anger expression, raising the question of what other factors are shaping aggressive behavior. It may be that differences in emotional arousal, or how anger is felt, affect judgement,

decision making, and subsequently influence aggressive behavior. This idea is supported by a meta-analysis of 76 studies where emotional arousal related to anger and fear had large effects on judgement and decision-making outcomes (Angie et al., 2011).

There is apparent utility in examining the many facets of anger and aggression as the present results confirmed that anger intensity and frequency of anger were positively linked with aggressive behavior. Specifically, more intense anger was linked with externalized anger expression as well as higher rates of self-reported verbal and physical aggression. Additionally, more frequent occurrences of anger were also significantly associated with outward, verbal, and physical aggression. Further, anger frequency was also strongly related to retaliatory, as opposed to avoidant, anger expression. These findings are in alignment with previous research which shows that those with frequent anger tend to display more aggression and engage in more hostile interactions (Veenstra et al., 2017). Further, the present findings add supporting evidence to research linking trait anger with social aggression (Li et al., 2020) as well as violence (Turner & White, 2015; Quan et al., 2021). The significance of increased anger intensity and frequency in relation to aggression also supports the previous explanation that high anger arousal may elevate risk for maladaptive anger expression. This has relevance to practical applications as addressing disordered anger as the root of subsequent aggression may be an effective approach to risk assessment and preventative intervention.

Gender Differences in Anger and Aggression

Overall, differences in gender groups did not align with the expectation that more masculine groups would exhibit higher rates of anger and more hostile anger expression. Specifically, Archetypical Men were not meaningfully higher on most measures of anger or aggression than Archetypical Women or other groups. However, Archetypical Men were

meaningfully higher in objective of anger expression, indicating that they were more likely to engage in anger responses aimed at retribution toward the offender, as opposed to seeking restorative justice. From the perspective of the social construction of gender, this is congruent with the archetype of the revenge seeking man who must use violence to preserve social standing within an honor culture (Sommers, 2008). In fact, revenge motivation has been shown to mediate gender differences in physical aggression (Wilkowski et al., 2012). This mentality may offer an explanation for how cultural expectations influence goals of anger expression which in turn may shape subsequent behavior.

Although there were few instances where statistically meaningful results were found between groups, differences in mean scores generally reflected the conceptual expectations that informed the hypotheses. That is, Archetypical Men did tend to have higher mean scores on APS and AES measures than most other groups. This is consistent with previous research that has linked anger and aggression with masculinity (e.g., Jakupcak et al., 2002; Mahalik et al., 2003; Vincent et al., 2011). However, unexpected results yielded an exception where Intertypical Women had the highest scores on the APS and AES totals and most subscales. Notably, Intertypical women reported meaningfully longer anger duration and higher rates of retaliatory, as opposed to avoidant, reaction than Archetypical Men. Similarly, previous research using APS measures found female participants had higher anger frequency than male participants, though those differences fell short of statistical significance (Fernandez, 2014). These results are consistent with the profile of Intertypical Women that emerged in the original development of these gender categories (Marcotte et al., 2022). Specifically, Intertypical women, although identifying strongly as women, were much lower in feminine expression, perception, and they were significantly less strict in adherence to feminine norms. Additionally, Intertypical Women

exhibited traits typically ascribed to men including endorsement of the use of violence and risk-taking. Similarly, previous research has identified women who also displayed more typically masculine traits of dominance while retaining feminine identity as “alpha females”, which can be viewed as analogous to Intertypical Women (Sumra, 2019). Possible explanations for this phenomenon can be offered by zooming out on the profile of Intertypical Women to see how this trend of behavior fits. Based on the pattern of current and past results, Intertypical Women can be expected to be more socially liberal, less likely to conform with gender norms surrounding anger and aggression, and perhaps being less influenced by social expectations. Further, Intertypical Women may be more self-aware in relation to gender norms and even perhaps push back against them.

Social Desirability

While it was thought that traditional gender norms and associated facets of gender would shape anger and aggression, this narrative may be overtaken by more progressive societal expectations surrounding aggression. In other words, individuals may be more aware that aggressive behavior is perceived negatively by society. To that point, social desirability bias emerged as an influential factor in the current sample and was negatively correlated with anger and aggression measures. Interestingly, when examining differences in social desirability between gender groups, a trend emerged that may help explain the previous results. Specifically, correlations between social desirability and APS/AES measures were strongest for archetypical groups and notably weakest in Intertypical women. This aligns with the aforementioned explanations related to the profile of Intertypical Women. That is, those who fall into that group tend to conform less to traditional gender norms and may even tend to push back against them. It is intuitive then, that Intertypical women appeared to be more likely to be answering more

honestly and reporting higher rates of anger and aggression than other groups. While this was a clear trend, overlapping confidence intervals indicated nonsignificant differences between gender groups in social desirability. Future research may reexamine these differences in an adequately sized sample to see if this trend is persistent.

Demographics

Follow-up analyses produced little evidence that demographics related to the dependent variables. This has precedent as age, income, and education were all unrelated to the APS and AES measures in the work of Fields (2015). However, one difference in the current study there were small significant effects where older age was associated with less intense anger and shorter anger duration as well as with more adaptive anger expression. Conversely, age was positively correlated with more outwardly directed (locus) anger expression. Given that the current sample was older ($M = 40.13$), this may explain some of the null results. Anger has been shown to increase during young adulthood, but then shows a steady decline with age (Kunzmann, et al., 2013). Further, gender differences in anger and aggression have been shown to diminish over time (Møller & Haustein, 2018) and with age (Galambos et al., 2006).

There was a small positive relationship between income and anger expression direction indicating that higher income is associated with misdirected hostility. Additionally, subjective measures of SES were associated with shorter anger duration. This is in alignment with a series of studies that found subjective SES to be negatively related to trait aggression (Greitemeyer & Sagioglou, 2016). These results also help explain the main findings as our sample was high on objective measures of SES (income and education) and subjective measures. Together these results lend support to the idea that individual differences in self-perception and identity, apart from gender, play a role in shaping anger and aggression outcomes.

Limitations and Future Directions

The present research was limited by several factors. First, the typical characteristics of an online sample should be considered when interpreting the results. As with most online samples the participants were older, predominantly white, highly educated, reported above-average income and subjective SES. Further, the social norms that inform studies like this are typically characteristic of Western cultures and should not be generalized cross-culturally. Taken altogether future research should expand sampling to include other cultures both nationally and internationally.

Second, small sample size was an issue that excluded the possibility for more sophisticated analysis. Although there were 152 participants, five levels to the IV (gender categories) left small samples within subgroups: Archetypical Men ($n=54$); Intertypical Men ($n=23$); Nonconforming ($n=7$); Intertypical Women ($n=23$); Archetypical Women ($n=45$). Future studies should recruit an adequately sized sample that will enable better options for examining group differences.

Methodological Challenges

One methodological challenge was the operationalization of anger and aggression. Specifically, there are several issues with content and response options within the APS and AES. First, I would challenge the notion that the reverse coded items efficiently represent the inverse of positively keyed scale items. For example, in the subscale Intensity, the items “*My anger takes the form of annoyance*” and “*My anger takes the form of rage*” are oppositely coded, presenting what I believe is a false dichotomy. This is evidenced by how the subscale also stood out as problematic during preliminary exploratory analysis with poor reliability. Similarly, Fields (2015) reported that Intensity did not load well onto any factor. Ultimately, this subscale was

recoded prior to use in an attempt to best capture the intended construct. Example items were coded positively keyed, and the scale had a much higher reliability. A similar process was followed with AES subscale Objective that was recoded to better suit the construct of interest with greatly improved scale reliability. These examples demonstrate the challenges and limitations of crafting an appropriately worded inventory suitable for a self-report on such a sensitive topic as anger and aggression. Future research should incorporate more comprehensive measures of anger and aggression such as the State-Trait Anger Inventory and State-Trait Anger Expression Inventory-2 that have been widely used and scrutinized (Spielberger & Reheiser, 2004). Further, the preceding criticisms of the APS and AES highlight the inherent limitations of self-report anger and aggression measures. In addition to using more refined self-report measures, future research should also attempt to incorporate observational measures and objective physiological measures of anger and aggression if possible. This may include rating behaviors or body language and using physiological measures such as skin conductance reactivity or heart rate reactivity as has been used in samples of children (Hubbard et al., 2004) and adults (Romero-Martínez et al., 2013).

There are also apparent issues with the sensitivity of many of the subscales of the APS and AES. For example, beginning a conceptual continuum from weak to strong in the case of APS subscale Intensity, does not attempt to capture the full range of the construct. That is, as written the scale does not allow for zero Intensity. Indeed, visual inspection of the data reveals a skewed distribution that illustrates the possibility of these missed measurements. Using a broader scale may increase the sensitivity and accuracy. Further, some scales are approaching the territory of being analogous to a double-barreled question. In the case of Modality of anger expression, the items attempt to capture the use of both verbal and physical aggression. This is

problematic in attempting to assess the severity of aggression. Progression to violence should rank higher, but in the current iteration of the subscale it is not possible to differentiate between verbal or physical modes.

Another challenge to self-report methods is how social desirability influences responses. Social desirability bias appeared to be influential in this study and was linked with lower anger and aggression reporting. Recently, there has been discussion on the utility of the Marlowe Crowne Social Desirability Scale and concerns that the measure risks false positives of faking good (Fernandez et al., 2019). Social desirability bias as a confound to self-report variables should be carefully considered in designing future studies that may benefit from inclusion of additional or alternative objective measures.

Another apparent issue with self-report measures of sensitive topics such as anger and aggression is that accurate reporting also requires a high level of introspection and reflection on one's emotional states. It takes both significant self-awareness and honesty to reliably measure constructs like anger and aggression. There has been much research on the stages of self-awareness that are inherent to the processes of behavior change described through the Transtheoretical Model of Behavior Change (Prochaska & DiClemente, 1982). Measures derived from this theory such as The University of Rhode Island Change Assessment Scale (URICA) have been previously modified to measure behavior change in violence (Levesque et al., 2000). To this point, the current data is derived from data collection for a pilot measure that is intended to better examine anger and aggression by adapting the URICA-DV to broadly capture stages of anger and aggression behavior. The present research can be seen as an important step towards integrating best practices in gender psychology methodology with work on stages of anger and aggression behavior change. By incorporating longitudinal and experimental designs, further

research may build from this work to examine how gender and other individual differences may shape anger and aggression over time.

Conclusion

Despite its limitations this study does serve to add to the body of work that refutes a dichotomous and predictable narrative on gender and expected behavior. The pattern of results in the current study indicates a need to continue reexamination of the social narrative and assumptions surrounding gender, anger, and aggression as well as the enactments of gender norms broadly. The mix of expected and unexpected findings lends support to previous work that posits a trend where people may be diverging from stereotypical gender norms and challenging societal expectations over time (Hsu et al., 2021). While findings have varied regarding subjective measures of anger and aggression in both past literature and the present study, there remains robust evidence that men account for a disproportionate amount of aggression and violence (e.g., Björkqvist, 2018; Hyde, 1984; Knight & Higgins, 1996; Okuda et al., 2014). This underscores the need to prioritize research that can identify groups at high risk for aggressive or violent behavior. The practical significance of such efforts would be to inform messaging, interventions, and preventative measures aimed at reducing harmful outcomes of anger and aggression. Examining how gender norms and other societal expectations are changing over time is an important aspect in challenging gender stereotypes, advocating for change, and disrupting systems of oppression.

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Appendix A: The Anger Parameters Scale

Directions: For this section, a number of statements are given which could describe how often and to what extent you get angry or furious. Read each statement and use the scale provided to indicate how much you think the statement describes how often and to what extent you normally get angry. There are no right or wrong answers. Do not spend too much time on any one statement. For each item, select the response that best describes how you generally act or feel when you are angry or furious.

Response options range from 0 – Not at all like me to 4 – Totally like me

1. I seldom get angry.* (Frequency)
2. I stay angry only for a short time.* (Duration)
3. It takes very little to make me angry.(Threshold)
4. My anger takes the form of annoyance.* (Intensity)
5. My anger occurs immediately. (Latency)
6. I simmer with anger.* (Intensity)
7. I am rarely angry.* (Frequency)
8. I get angry right away. (Latency)
9. My anger goes away quickly.* (Duration)
10. A single provocation is enough to anger me. (Threshold)
11. Anger is my least common emotion.* (Frequency)
12. My anger is slight.* (Intensity)
13. I am quick to anger. (Latency)
14. My anger is brief.* (Duration)
15. Even minor things make me angry.(Threshold)
16. I often get angry. (Frequency)
17. I stay angry for a long time. (Duration)
18. It takes a lot to make me angry.* (Threshold)

19. My anger takes the form of rage. (Intensity)
20. My anger occurs after a delay.*(Latency)
21. I explode with anger.* (Intensity)
22. I am usually angry. (Frequency)
23. I get angry a little later.*(Latency)
24. My anger goes away slowly.(Duration)
25. I get angry only with repeated provocations.*(Threshold)
26. Anger is my most common emotion.(Frequency)
27. My anger is extreme.(Intensity)
28. I am slow to anger.(Latency)
29. My anger is prolonged.(Duration)
30. Only major things make me angry.*(Threshold)

Note. *=This item has been reverse scored.

Appendix B: The Anger Expressions Scale

Directions: For this section, a number of statements are given which could describe how you react when you are feeling angry or furious. Read each statement and use the scale provided to indicate how much you think the statement describes how you normally react when feeling angry. There are no right or wrong answers. Do not spend too much time on any one statement. For each item, select the response that best describes how you generally act or feel when you are angry or furious.

Response options range from 0 – Not at all like me to 4 – Totally like me

1. I let out my anger. (Locus)
2. I pause and reflect when I am angry.*(Impulsivity)
3. I direct my anger only at those who offend me.*(Direction)
4. I express my anger physically.(Modality)
5. I go on the attack when angered.(Reaction)
6. When angry, I try to get over it.(Objective)
7. My anger is only toward those responsible for it.*(Direction)
8. I manage to stay in control when I am angry.* (Impulsivity)
9. I have no reservations about showing my anger.(Locus)
10. Whatever is done to make me angry, I do the same in return.(Reaction)
11. I get violent when I'm angry.(Modality)
12. My anger goes away if I revoke my loss or repair the damage.(Objective)
13. The offender gets the brunt of my anger.*(Direction)
14. I am in charge of my own anger.*(Impulsivity)
15. My anger is revealed.(Locus)
16. When angered I go on the offensive.(Reaction)
17. Anger show in my body gestures.(Modality)
18. My anger is reduced by an apology or remorse from the offender.(Objective)

19. I carry my anger within.*(Locus)
20. I do not stop and think when I am angry.(Impulsivity)
21. I take out my anger even on those who do not offend me.(Direction)
22. I communicate my anger through words.(Modality)
23. I become stubborn or uncooperative when angered.(Reaction)
24. When angry, I try to get even.(Objective)
25. My anger extends even to people/things not responsible for it.(Direction)
26. I go out of control when I am angry.(Impulsivity)
27. I keep others from knowing how angry I am.*(Locus)
28. I become aloof and avoidant when angry.(Reaction)
29. I get sarcastic and curse when I'm angry.(Modality)
30. My anger stays until the person responsible is punished.(Objective)
31. Non-offenders are subjected to my anger.(Direction)
32. My anger takes charge of me.(Impulsivity)
33. My anger is hidden.*(Locus)
34. When angered, I go on the defensive.(Reaction)
35. Anger comes through in my voice.(Modality)
36. My anger is reduced when justice is served.(Objective)

Note. *= This item has been reverse scored.

Appendix C: Sex and Gender Measures

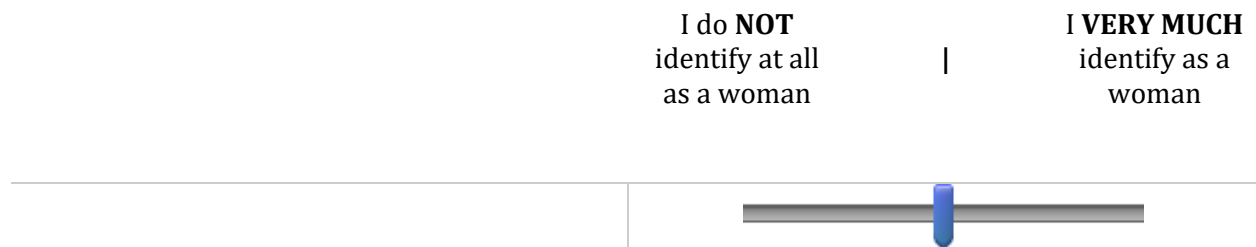
We are now going to ask you questions about your sex and gender. To be sure that we are accurately representing everyone who participates in the study, we are going to ask you a few questions about yourself.

Sex is understood as the different biological and physiological characteristics of males and females, such as reproductive organs, chromosomes, hormones, etc. To the best of your knowledge, where would you place yourself on the Sex Spectrum below?

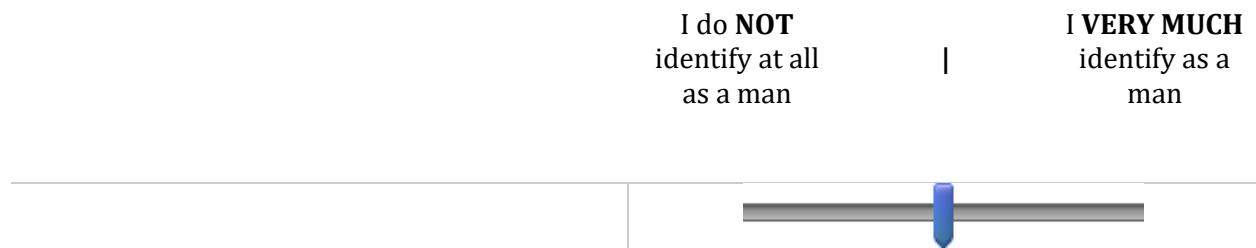
- Typical Male
 - Male with Subtle Variations
 - Male with Moderate Variations
 - 46, XY/ DSD (Testes w/ ambiguous genitals)
 - Ovotesticular DSD (XX, XY, or Mix of both; Both ovarian and testicular tissue)
 - 46, XX/ testicular DSD (Small testes)
 - Female with Moderate Variations
 - Female with Subtle Variations
 - Typical Female
-

Gender Identity is one's innermost concept of their self as being male, female, a blend of both, or neither – it is how individuals perceive themselves and what they call themselves. One's gender identity can be the same or different from their sex assigned at birth.

To what extent do you identify as being a **woman**?



To what extent do you identify as being a **man**?



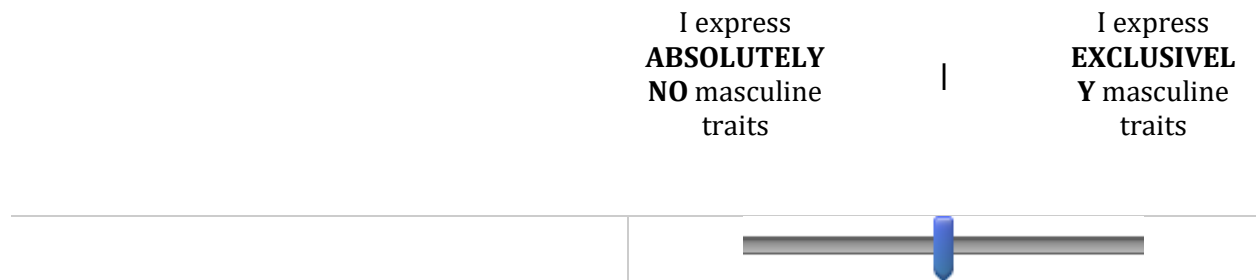
Gender Expression is the external appearance of one's identity, usually expressed through gender stereotypical traits such as behavior, clothing, interests or hobbies, haircut or voice,

which may or may not conform to socially defined behaviors and characteristics typically associated with being either masculine or feminine.

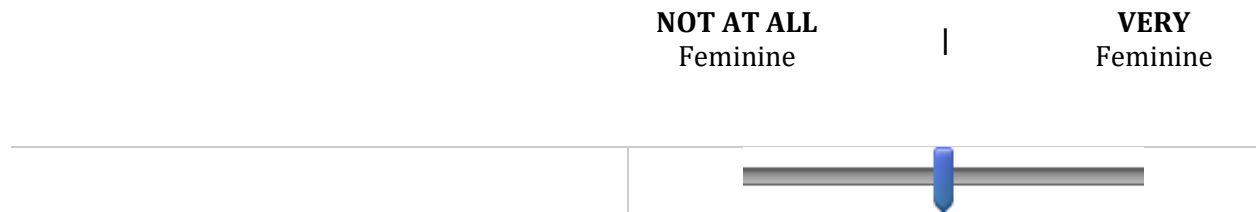
To what extent do you express any **feminine** traits?



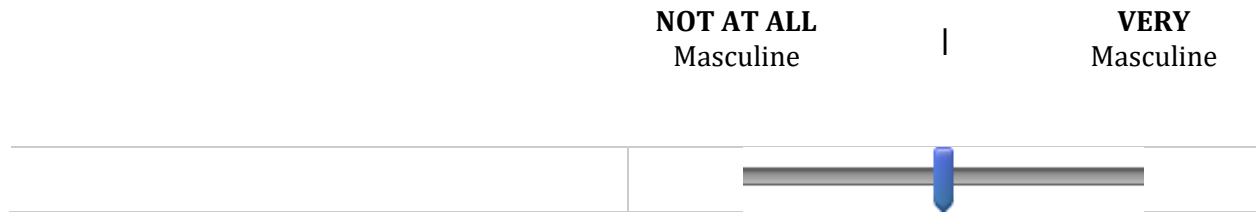
To what extent do you express any **masculine** traits?



How do you think others view your **feminine** expression?



How do you think others view your **masculine** expression?



There are a variety of ways that people self-describe their gender - for example, man, woman, transgender, cisgender, gender queer, gender fluid, and more.

When you self-describe your gender today, what term(s) would you use to describe yourself?

Thank you for taking part in this study. Please click the button below to be redirected back to Prolific and register your submission. Payment will be approved as soon as possible once survey responses are validated. Thank you!

Appendix D: Demographic Measures

Thank you for taking the time to respond to our questions about anger. For the remaining questions, we are interested in learning more about your general background and identity to make sure we get a good representation of people from all backgrounds in this survey.

What is your year of birth?

How old are you today?

Please indicate the answer that includes your entire household income last year before taxes. This includes everyone in your household that contributes to the bills.

- Less than \$10,000
 - \$10,000 to \$19,999
 - \$20,000 to \$29,999
 - \$30,000 to \$39,999
 - \$40,000 to \$49,999
 - \$50,000 to \$59,999
 - \$60,000 to \$69,999
 - \$70,000 to \$79,999
 - \$80,000 to \$89,999
 - \$90,000 to \$99,999
 - \$100,000 to \$149,999
 - \$150,000 or more
-

What is the highest level of school you have completed or the highest degree you have received?

- Less than high school degree
- High school graduate (high school diploma or equivalent including GED)
- Some college but no degree
- Associate degree in college (2-year)
- Bachelor's degree in college (4-year)
- Master's degree
- Doctoral degree
- Professional degree (JD, MD)

Below is a short list of different races and ethnicities. Please select as many as you believe apply to you. You can also self-identify, if you wish.

- White
- Black
- African American
- Latin(o, a, x) American
- Spanish / Hispanic American
- Asian American (Southeastern heritage, for example Cambodian, Hmong, Laotian, or Vietnamese)
- Asian American (Eastern heritage, for example Chinese or Japanese)
- Asian American (Southern heritage, for example Indian, Pakistani, or Nepalese)
- Native Hawaiian or Pacific Islander
- Native American or Alaska Native
- Multiracial

Other/Self-Identify _____

In which region of the United States do you currently reside?

- New England (Connecticut, Maine, Massachusetts, New Hampshire, Vermont, Rhode Island)
 - Mid-Atlantic (Delaware, New Jersey, New York, Pennsylvania)
 - National Capital (Maryland, Virginia, Washington, D.C.)
 - Southeast (Florida, Georgia, North Carolina, South Carolina)
 - South (Alabama, Arkansas, Kentucky, Louisiana, Mississippi, Tennessee, West Virginia)
 - Industrial Midwest (Illinois, Indiana, Michigan, Ohio)
 - Upper Midwest (Minnesota, North Dakota, South Dakota, Wisconsin)
 - Lower Midwest (Iowa, Kansas, Missouri, Nebraska, Oklahoma)
 - Border States (Arizona, New Mexico, Texas)
 - Mountain States (Colorado, Idaho, Montana, Nevada, Utah, Wyoming)
 - Pacific Northwest (Oregon, Washington)
 - California
 - Puerto Rico
-

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 TOP part of the scale represents people who are the best off in their community - those who have the most money, the most education, and the most respected jobs. The BOTTOM part of the scale represents the people who are the worst off in your community - those who have the least money, the least education, and the least respected jobs. The further UP you are on the scale, the closer you are to the people at the very top. The further to the BOTTOM you are on the scale, the closer you are to people at the bottom.

Where would you place your immediate family (i.e., self if head of household or parents/guardians) on the scale relative to other families in your community?

- 10 - Highest / Best off
 - 9
 - 8
 - 7
 - 6 - Slightly HIGHER than average
 - 5 - Slightly LOWER than average
 - 4
 - 3
 - 2
 - 1 - Lowest / Worst off
-

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

The TOP 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 BOTTOM part of the scale represents the people who are the worst off - those who have the least money, the least education, and the least respected jobs. The further UP you are on the scale, the closer you are to the people at the very top. The further to the BOTTOM you are on the scale, the closer you are to people at the bottom.

Appendix E: Informed Consent

Rhode Island College Institutional Review Board

Approval #: _____

Expiration date: _____

Participant's Initials: _____

Document version: _____

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CONSENT DOCUMENT**Rhode Island College**

URICA- Anger Pilot

You are being asked to be in a research study about how people generally behave in situations when they feel angry. You are being asked to participate in this study because we are interested in hearing from a wide range of people.

Why this Study is Being Done (Purpose(s))

We are doing this study to learn about ways everyday people respond to situations that may cause them to feel angry.

What You Will Have to Do (Procedures)

If you choose to be in the study, we will ask you to read and answer survey questions. The questions ask basic things about yourself including questions about feelings in hypothetical situations. This will take about 30 minutes.

Risks or Discomforts

If you find that answering some questions is upsetting you can skip any questions you don't want to answer, and you can stop the survey at any time. In this online survey, the risks are considered 'minimal', meaning that they are about the same as what you would experience during your typical daily activities.

Benefits of Being in the Study

Being in this study will not benefit you directly.

You Will Be Paid (Compensation)

When you reach the final page of the study, you will receive a code number and you will type that code number into your Prolific account to show that you completed the study and obtain your \$5 compensation. That way you can demonstrate that you participated without providing any identifying information in the actual survey data being collected.

Deciding Whether to Be in the Study

Being in the study is your choice to make. Nobody can force you to be in the study. You can choose not to be in the study, and nobody will hold it against you. You can change your mind and quit the study at any time, and you do not have to give a reason. If you decide to quit later, nobody will hold it against you.

How Your Information will be Protected

Because this is a research study, results will be summarized across all participants and shared in reports that we publish and presentations that we give. A high level of confidentiality can be ensured since no identifying information will be linked to survey responses. Your name will not be used in any reports. We will take several steps to protect the information you give us so that you cannot be identified. Instead of using your name, your information will be given a code number. The information will be kept on a password protected computer and seen only by members of the research team. The only time we would have to share information from the study is if it is subpoenaed by a court, or if you are suspected of harming yourself or others, then we would have to report it to the appropriate authorities. Also, if there are problems with the study, the records may be viewed by the Rhode Island College review board responsible for protecting the rights and safety of people who participate in research. The information will be kept for a minimum of three years after the study is over, after which it will be destroyed.

Who to Contact

You can ask any questions you have now. If you have any questions later, you can contact Melissa Marcotte, Ph.D. at mmarcotte@ric.edu, (401) 692-7222.

If you think you were treated badly in this study, have complaints, or would like to talk to someone other than the researcher about your rights or safety as a research participant, please contact the IRB Chair at IRB@ric.edu.

Statement of Consent

I have read and I understand the information above. I am choosing to be in the study “URICA-Anger Pilot”. I can change my mind and quit at any time, and I don’t have to give a reason. I have been given answers to the questions I asked, or I will contact the researcher with any questions that come up later. I am at least 18 years of age.

Do you consent to the terms above?