Everyday Sadism and Antisocial Punishment in the Public Goods Game:

Is There Evidence of Gender Differences?

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Abstract

Antisocial punishment in a public goods game dilemma, the punishment of cooperative individuals, has been found to be prominent in people who display everyday sadistic tendencies. To explore this notion further, a replication and extension of Pfattheicher, Keller, and Knezevic (2016) study was performed. Building on their study looking at how activating and inhibiting the intuitive system affects antisocial punishment, we were interested in how gender affects antisocial punishment in everyday sadists. Participants played several rounds of a public goods game either against their same gender or the opposite gender while receiving specific thinking style messages. It was discovered that when males were prompted with reflective thinking style messages or no thinking style message, they antisocially punished female players less than in the intuitive thinking style condition. Overall, the current research suggests gender and thinking style can influence how people with everyday sadistic tendencies decide to engage in antisocial punishment.

Keywords: antisocial punishment, everyday sadism, public goods game, gender

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Social Dilemmas

As social animals, humans often find themselves in situations in which their short-term interests come into conflict with the long-term interests of the groups they belong to. These desire related conflicts between the individual and the collective are known as social dilemmas (Van Lange, Joireman, Parks, & Van Dijk, 2013). Social dilemmas are common in the real world and have long captured the attention of researchers in many disciplines including biology, economics, and psychology. A common example of a social dilemma in our society is non-profit program funding. Imagine a person is driving in their car and they hear a commercial asking for donations to support a public radio station. Since they enjoy listening to that particular station they hope the station will procure enough funding, so they can continue to listen. The dilemma is whether they should donate their money or keep their money. On the one hand, if they do donate their money and enough other listeners also donate, the station will be able to stay on the air and they will be able to continue enjoying the station. On the other hand, if they donate their money but not enough other listeners do the same, the station will not have enough funding to stay on the air and they will have lost both their money and the enjoyment of listening to the station. However, if they decide not to donate and the station does not procure enough individual donations, it goes off the air, they will not be able to enjoy the station, but at least they still have their money. Now, if they decide to not donate to the station and the station does get enough donations from others to stay on the air they will still have their money and they will get to enjoy the station. This last outcome is the best for a person's self-interest and is known as temptation (Parks, 2015). Parks (2015) points out that a structural component of a social dilemma is that

each individual feels the pull of temptation; however, it is not ideal for the group if all individual members give into temptation. The best outcome for the group occurs when everyone involved in the dilemma decides to cooperate (Parks, 2015). Social dilemmas are common in most societies. There are many different types of social dilemmas and some require individuals to make complex judgements of possible costs and rewards for both themselves and others (Parks, 2015).

Parks (2015) identifies social dilemmas as being part of a more general class of social situations known as mixed-motive situations where people want an outcome or resource. Mixed-motive situations happen when one person would like a certain outcome, while the other person favors a different outcome. To avoid an outcome where neither person gets what they would like, both people involved will have to shift their behaviors to reach a desired outcome. Compromising on plans is an example of shifting behaviors so that both people are able to enjoy a positive outcome.

Possibly the most well-known social dilemma is the Prisoner's Dilemma. Briefly, this dilemma requires that both "prisoners" cooperate with each other by not *snitching* on the other prisoner so that both players get a short prison sentence (Axelrod, 1980). However, if one prisoner defects on the other, they receive a shorter sentence and the other receives a longer sentence (Axelrod, 1980). One might think that defecting would be the best decision because of the shorter prison sentence, but there is always the chance that the other player will defect as well, causing a longer sentence for both players. It is actually in both players best interest to cooperate with each other so both are guaranteed the shorter sentence (Axelrod, 1980). Another popular social dilemma is known as the chicken dilemma. The goal of this situation is to continue to drive straight towards the opposing player until they swerve (Van Lange, Joireman,

Parks, & Van Dijk, 2013). However, if the opposing player does not swerve, both players face death (Van Lange et al., 2013). A third popular social dilemma is known as the Assurance dilemma or the Trust dilemma. In the Trust dilemma is it best for both players to cooperate with one another but each player might be tempted to act non-cooperatively if they feel the other player will not cooperate (Van Lange et al., 2013).

Although the details may vary, Van Lange et al. (2013) theorized that there are three solutions or influences that guide how people behave in most social dilemmas. The first influence, structural influence, refers to the structure of the social dilemma. An endless number and combination of structural features can determine the pattern of behavior participants display in a social dilemma. For example, rewards, punishments, asymmetry in roles, or even uncertainty are all structural components to social dilemmas. The second influence, dynamic interaction process, influences how players behave in the social dilemma over a passage of time (Van Lange et al., 2013). For instance, the consistency of reciprocity (or lack of) has been shown to influence how a player will behave in future rounds of the social dilemma. Additionally, changes in group composition and the amount and type of communication between players can alter player behavior over time. The last influence Van Lange et al. (2013) discovered is psychological influences. Factors such as the level of trust between players, consideration of future consequences, and individual differences in personality, are all psychological influences that effect players decisions in social dilemma situations.

One of the most studied psychological influences is known as social value orientation. Players with a prosocial value orientation are concerned with maximizing joint outcomes and maximizing equality, which often leads them to cooperate with others in social dilemmas (Van

Lange et al., 2013). Changing components that represent these three categories of solutions can have significant influence on players decisions in social dilemma situations.

Cooperation and Personality Traits

Cooperation is considered a type of prosocial behavior. It is most often defined as the act of two or more people coming together to achieve a common goal and accomplish more together than they could alone (Dovidio & Banfield, 2015). People who behave in a cooperative manner are usually less concerned with their self-interest but instead are concerned for the well being of others (Sagiv, Sverdlik, & Schwarz, 2011). Sagiv et al. (2011) found that people who hold certain values are more likely to cooperate than others who do not hold those same values. Valuing universalism and benevolence lead participants to cooperate in a social dilemma while valuing power and achievement led to competition (Sagiv et al., 2011).

A number of studies have examined the Big Five Personality traits and how they may or may not lead to people behaving in a prosocial manner (Pursell, Laursen, Rubin, Booth-LaForce, & Rose-Krasnor, 2008; Keung, Shek, Cheung, & Lee, 1996; Proto & Rustichini, 2013). For instance, in their study on cooperation and personality, Proto and Rustichini (2013), found that participants with higher conscientiousness and neuroticism scores were more cooperative than those with higher agreeableness, openness, and extraversion scores on a math task in which a partner relied on them. Researchers Keung et al. (1996) also studied personality traits but looked at how certain personality traits lead to delinquency in Chinese adolescents. Their findings suggest that adolescents' high in neuroticism behave more antisocially than their counterparts who do not possess this trait (Keung et al., 1996). Besides the Big Five Personality traits, so called "sinister" personality traits are beginning to be considered important to researchers attempting to understand why some people do not behave prosocially.

Antisocial Behavior and Dark Personality Traits

Antisocial behavior is any behavior that harms others, whether that be physically, mentally, or verbally (Branas-Garza, Espin, Herrmann, Kujal, & Nagel, 2016). For instance, adolescent delinquency (bullying and physical fighting) and internet trolling are both topics that have been studied in the realm of antisocial behavior (Chabrol, Van Leeuwen, Rodgers, & Sejourne, 2009; Buckels, Trapnell, & Paulhus, 2014).

There is a group of personality traits known as the Dark Triad that have become a prevalent topic of study among personality and social psychologists within the last decade. The Dark Triad traits are narcissism, Machiavellianism, and psychopathy. It should be noted that much of the research done on the Dark Triad has focused on the subclinical levels of each of the three traits. First, Paulhus (2014) states that those with subclinical levels of narcissism are grandiose and want everyone's attention. Next, he describes those with subclinical Machiavellianism as being "master manipulators" (Paulhus, 2014, p.421). Finally, subclinical psychopathy is described as the most malicious of the three traits by Paulhus (2014) because of the impulsive and callous nature towards others suffering by people with that trait. From these accounts of the personality traits, Paulhus and Williams (2002) deduced, that to varying degrees, the three traits all have some level of commonality. The Dark Triad all share a socially malevolent character, emotional coldness, aggressiveness, dishonesty, and behavioral tendencies toward self-promotion (Paulhus & Williams, 2002). Further, Paulhus (2014) posited that all three traits also lack empathy because of their callous nature, and also discussed a possible fourth dark trait known as sadism that lacks empathy as well.

Sadism

Most recently, researchers have become very interested in a fourth dark personality trait known as sadism. To date, subclinical sadism is the least explored of the dark traits. When the term "sadism" is heard, many lay persons might assume there is a sexual fetish component or criminal level behavior involved, but with subclinical sadism this is not the case (Buckels et al., 2013). People with levels of subclinical sadism are likely to find enjoyment or arousal through ordinary activities such as violent video games, vicious sports, or brutality on the news (Buckels et al., 2013). According to Buckels, Jones, and Paulhus (2013), subclinical sadism, also known as everyday sadism, is characterized by the enjoyment of cruelty. Everyday sadists also have a callous nature in their social interactions, a trait Paulhus (2014) argues fits with the "Dark Tetrad" or "Callous Constellation" (p.424).

Given that most cultures value kindness, empathy, and cooperation, how does everyday sadism come about in some individuals? To answer this question, researchers Baumeister and Campbell (1999) applied the opponent-process theory to explaining sadism. The opponent-process theory was originated by Solomon and Corbit (1974) and is based on the concept of physical homeostasis, the process the body goes through to regain balance. In other words, any response that disturbs the body from a state of homeostasis must be followed by a response that returns the body to a state of homeostasis (Solomon & Corbit, 1974). Further, the original response to a stimulus (the A process) is strong at first, while the subsequent response (the B process) is weak. Over time, the B process will become stronger and will eventually dominate the A process (Solomon & Corbit, 1974). It takes a fair amount of time for the B process to become dominate, so it should be understood that sadists likely do not start out feeling pleasure from harming others. Instead, at the outset, their A process, feelings of distress, will be more

powerful (Baumeister & Campbell, 1999). The B process, pleasurable feelings, is needed to dull the A process. As explained before, over time the B process becomes more powerful and surpasses the A process. This means that as the person with a sadistic personality harms people more and more, they will evolve from feelings of distress to feelings of elation. Once the B process does take over, it is likely that the person will have to engage in higher levels of harm to activate the full potential of their B process (Baumeister & Campbell, 1999). In contrast to a prosocial value orientation where helping others may come to have positive feelings Baumeister and Campbell (1999) conclude that this is how sadistic habit-formation occurs. Recently, researchers have created studies to explore this idea of sadistic habit-formation.

Two studies were conducted by Buckels et al. (2013) to capture the true nature of everyday sadists. In the first study, participants were led to believe they were taking part in a study on personality traits and tolerance for challenging occupations (Buckels et al., 2013). Among the unpleasant jobs being surveyed, exterminator (killing the bugs themselves), exterminator assistant (helping the experimenter kill the bugs), sanitation worker (cleaning a dirty toilet), and a worker in a cold environment (enduring pain by sticking one's hand in ice water) were all options. If a participant chose to perform the duty of an exterminator, they were instructed to drop live pill bugs into a "bug crunching machine" (a coffee maker with a grinding component in the bottom that did not actually kill the bugs). The number of bugs killed was recorded and post-task pleasure was measured as well. The results of this study showed that participants who chose the role of exterminator had the highest sadism scores and that those with high sadism scores found the most pleasure in completing the bug killing task (Buckels et al, 2013). Further, it was found that the higher number of bugs killed (maximum of three), the more post-task enjoyment one with high levels of everyday sadism experienced (Buckels et al., 2013).

The second study was inspired from past research which found that aggression committed by members of the Dark Triad is context dependent (Jones & Paulhus, 2010). In this second study, the researchers wanted to explore whether or not everyday sadists would harm innocent victims. Participants were made to believe they were competing against an opponent to press a button faster. If they won, the participant could choose to harm their opponent by administering a blast of white noise. However, the opponent always chose to give a blast of zero (no noise). Therefore, if the participant chose to administer a blast, it was unprovoked. Additionally, there were two groups, a no-work condition which could blast their opponent right away, and a work condition which had the participants complete a dull letter counting task before blasting. Their results showed that everyday sadists would not only harm their opponent in the no work condition, but they also administered harm in the work condition (Buckels et al., 2013). Additionally, everyday sadists were found to increase the level of their noise blast once they realized that the opponent would not blast them back with noise (Buckels et al., 2013). This second study shows that everyday sadists will punish or harm others, even when they are not provoked and even if they have to give effort to do so.

Another important line of research was conducted by Pfattheicher et al. (2017). These researchers sought to understand the effects of the intuitive system (making decisions based on gut feelings) and reflective system (making decisions based on deliberate thought) on everyday sadism and antisocial punishment. Antisocial punishment refers to the act of punishing not only uncooperative individuals, but also punishing cooperative individuals (Pfattheicher et al., 2017). To understand how people use their intuitive system and reflective system differently to make decisions, one first needs to understand the Social Heuristics Hypothesis (SHH).

Created by Rand et al. (2014), the SHH suggests that if an individual learned that cooperation is an advantageous way of life, then that individual will intuitively choose to behave cooperatively and prosocially in new unexperienced situations. However, the SHH also states that if an individual has learned that acting antisocially is advantageous, that is how they will intuitively act in the future (Rand et al., 2014). As discussed previously, those with sadistic tendencies find pleasure in harming others; therefore, they have learned that harming others and acting antisocially is beneficial to them. Due to this line of thought, Pfattheicher et al. (2017) hypothesized that when instructed to think intuitively, everyday sadistic participants would engage in antisocial punishment. To test this hypothesis the researchers had participants play a public goods game with the opportunity to punish any other player. Participants were separated into three thinking style conditions, intuitive, reflective, and control. In the intuitive condition, participants were instructed to make their decision about punishment with their gut. In the reflective condition participants were instructed to slow down and really think about their punishment decision. Finally, the control group was not given any instruction on how to think. In support of their hypothesis, Pfattheicher et al. (2017) found that participants with high levels of everyday sadism engaged in more antisocial punishment when their intuitive system was activated compared to those who were instructed to think reflectively; a finding that fits with the SHH.

Gender Differences in Prosocial Behavior

Although there may be little research on gender differences when it comes to punishing others, there is a great deal of research on gender differences and prosocial behavior. Diekman and Clark (2015) theorize that differences in how males and females enact prosocial behaviors originates from gender roles and stereotypes. First, Diekman and Clark (2015) make it clear that

there is a diffuse expectation that all people be kind and friendly. They also explain that diffuse and specific gender roles are what make for the differences in prosocial behavior between genders. An example of a diffuse gender role for women is that they are self-sacrificing in close relationships and a diffuse gender role for men is the act of being chivalrous. Specific gender roles refer to occupation and family roles (Diekman & Clark, 2015). A firefighter is an example of a specific male gender role while a nurse is an example of a specific female gender role. Therefore, based on the diffuse and specific gender roles that men and women have been assigned, each gender is more likely to act in a prosocial manner whenever they are in situations that align with their gender roles (Deikman & Clark, 2015). However, not all situations align with one certain gender. In those types of situations, Deikman and Clark (2015) state that men and women are expected to perform similarly with regard to prosocial behaviors.

Another study on gender and prosocial behavior conducted by researchers Abdullahi and Kumar (2016) found that males and females scored similarly on most dimensions of the Prosocial Personality Battery (PSB), but that women are found to score higher on two specific dimensions of the scale. The PSB consists of seven different dimensions: social responsibility, empathetic concern, perspective taking, personal distress, other oriented moral reasoning, mutual concern, and self-report altruism. Abdullahi and Kumar (2016) found that male and female participants did not display significant differences in their scores for five of the seven dimensions. Those dimensions being social responsibility, empathetic concern, personal distress, mutual concern, moral reasoning, and self report altruism. However, the researchers did discover that males and females had significantly different scores on the two measures that deal with understanding others' mental state, perspective taking, and other oriented moral reasoning. Because females tended to score higher on those two dimensions, it can be concluded that

females seem to be relatively more concerned for others and about the morality of society (Abdullahi & Kumar, 2016).

Combining the topics of gender differences and personality traits, Pursell et al. (2008) gathered data from over 300 early adolescents to study how those differences relate to prosocial behavior. Their results show that in females, higher levels of agreeableness and conscientiousness were linked to higher levels of prosocial behavior (Pursell et al., 2008). In contrast, they did not find any significant links between prosocial behavior and agreeableness or conscientious in their male participants (Pursell et al., 2008). When considering delinquent behavior, a form of antisocial behavior, high levels of agreeableness and consciousness led to significant levels of less delinquency in females, but did not reach significance in males (Pursell et al., 2008). It is clear that there are significant differences between male and female personality factors that influence prosocial behavior. However, more research needs to be conducted to further test how male and female personality characteristics influence antisocial behavior.

Current Study

Considering the paucity of knowledge of how gender differences affect antisocial punishment in social dilemmas, the current study will be a replication and extension of Pfattheicher et al. (2017) study on the intuitive system and antisocial punishment in the public goods game. Data will be collected from people with everyday sadistic tendencies and people who lack these tendencies. We will investigate how the gender of the punisher and the gender of the punished affects antisocial punishment as suggested by Pfattheicher et al. (2017). These hypotheses are derived from the research of Deikman and Clark (2015) on gender roles and prosocial behavior. Same gender pairings as well as mixed gender pairings will be observed. We hypothesize that there will be a main effect of gender, where males with everyday sadistic

tendencies will engage in more antisocial punishment than everyday sadistic females. Additionally, we expect that there will be an interaction of how everyday sadistic males will punish female and male targets. We believe that everyday sadistic males will punish target males significantly more than target females. We predict that there will be no differences in females.

Methods

Participants

One hundred seventy-five participants (M_{age}= 38.83, SD_{age}= 10.94; female N= 110, male N=65) were recruited via Amazon's Mechanical Turk (MTurk). MTurk is a research participant recruitment platform hosted by Amazon. Participants were all from the United States. Participation in this study was voluntary and participants could choose to discontinue their participation at any time, without penalty. Participants were asked to read and signed an informed consent document and participants were compensated in the amount of 75 cents plus a 25 cent bonus, paid through MTurk.

Materials

Informed Consent. At the beginning of the study participants read an informed consent document (Appendix A). This document gave the participants information about the costs and benefits of participating in the study. The document also made the participants aware that participation was voluntary and that they could discontinue their participation at any time.

Varieties of Sadistic Tendencies Scale. Six items from this scale, developed by Buckels et al. (2013) and Paulhus and Jones (2014), was used to measure dispositional sadism (Appendix B). Some sample items from the scale include, "I enjoy making people suffer" and "I enjoy physically hurting people". These items are answered on a 5-point Likert scale ranging from "not at all true" to "completely true". High scores on this scale indicates an everyday sadistic

personality. This measure is found to have a Cronbach's alpha of .67 (Pfattheicher & Schindler, 2015).

The Ambivalent Sexism Scale. Developed by Glick and Fiske (1996), The Ambivalent Sexism Scale is used to measure hostile sexism and benevolent sexism (Appendix C). Hostile sexism results in hostile attitudes towards women (Glick & Fiske, 1996). On the other hand, benevolent sexism results in chivalrous attitudes towards women, which on the surface sounds good, but these chivalrous actions are done because of thoughts that women are weak and in need of protection (Glick & Fiske, 1996). Ambivalent sexism is a combination of hostile and benevolent sexism. Examples of items from the scale include, "Women should be cherished and protected by men" and "Women exaggerate problems they have at work". These items are answered on a 6-point Likert scale ranging from "disagree strongly" to "agree strongly". High scores on this scale indicate high levels of either hostile sexism, benevolent sexism, or possibly both.

Public Goods Game. The public goods game is played in a group, typically four players, who each have an endowment of money units; in this study that endowment was equal to 20 money units (Parks, 2015). Players could decide how much of their endowment they would like to donate to the "public good". They could also decide to not donate any of their endowment and instead keep it all for themselves (Parks, 2015). Once player decisions and donations had been made, the amount of donations wads doubled and divided equally among all players despite each individual contribution. This dynamic distinguishes players as either being a prosocial member of the group or a free rider. Prosocial members are those who donated either all or a portion of their endowment to the "public good" (Parks, 2015). In stark contrast, a free rider is a player who did not donate any of their endowment but benefited from the division of donations made by

other players (Parks, 2015). Within the explanation of the game, participants were made aware that they are competing for a payoff bonus. This was done to motivate participants to care about the decisions they made in the game. Ultimately, all participants were awarded the bonus for participating in the study.

Participates were assigned to a gender condition manipulation. For example, a female participant was informed they would be playing against three other women or three men, all of whom in reality were the computer program and not real people. If a man was participating, he would be assigned to play against three other men or three women, again all of which would be the computer program and not real people. Additionally, each participant was assigned to one of three thinking style manipulation conditions, intuitive, reflective, or control (no certain thinking style). The intuitive message read as follows, "On the next screen we ask you to make your decisions from the gut. That is, rely on your intuition and just follow your predominate feelings". In contrast, the reflective message read as follows, "On the next screen we ask that you think deliberatively about your decision. That is, consider pros and cons and reflect before you make your decision". The control group did not receive any message on how to think. The message indicating which style to use was displayed just prior to the punishment phase of the public goods game. To further clarify, this message appeared after the player already decided how much money they would like to contribute to the public good and after learning how much each player contributed. See Appendix D for game explanation presented to participants.

Punishment Choice Questionnaire. This questionnaire simply asked participants to indicate a reason(s) for punishing or not punishing other players, answered on a 7-point Likert scale ranging from "Emotion" to "Rational Thought" (Appendix E).

Control Group Thinking Style Questionnaire. This questionnaire was used to learn which thinking style, intuitive or reflective, participants in the control group used when making their decisions on whether to punish other players or not answered on a 7-point Likert scale ranging from "Quick" to "Deliberate" (Appendix E).

Consequences Questionnaire. This questionnaire was used to ask the participants if they felt their decisions throughout the game benefited or harmed the other players answered on a 7-point Likert scale ranging from "Beneficial" to "Harmful" (Appendix E).

Debriefing Statement. This document, shown at the conclusion of the study, informed participants about the purpose of the study and the hypotheses (Appendix F). The document also made participants aware that all workers would receive the 25-cent bonus. Contact information of the principal investigator was also provided to the participants should they have any questions or concerns about the study.

Procedure

The study was delivered via a survey program called Inquisit (created by Sean Draine). Participants completed the study in one sitting on Amazon MTurk online. At the beginning of the study participants read and electronically signed the informed consent document. Completion of the entire study took approximately 30 minutes.

First, every participant completed the 6 items from the Varieties of Sadistic Tendencies Scale (Buckels et al., 2013; Paulhus & Jones, 2014). To keep the measurement of sadistic tendencies from being obvious, the 6 items from the Varieties of Sadistic Tendencies Scale were embedded in the Kindness and Generosity Scale (Peterson & Seligman, 2004). Next, every participant completed The Ambivalent Sexism Scale (Glick & Fiske, 1996). After completing that scale each participant indicated their gender, age, name, and home state.

Then, participants were provided with an explanation of the publics good game. When the public goods game began, each participant started with 20 money units. At the start of each round the participant could decide how many of their money units they would like to contribute to the public good. Alternatively, they could decide to keep all of their money units resulting in a contribution of zero. To indicate how many MUs they would like to contribute, participants entered a number 0-20 into a textbox. Once all players decided to contribute or not, the donations of the other players were made public. Each "player" was displayed at the top of the screen with a name, state, and MUs contributed, as well as a female or male avatar (depending on gender group composition condition). Then, the participants were made aware of how much each player would win if no punishments were administered (Figure 1). Next, if the participant was assigned to either the intuitive or reflective thinking style conditions, the respective message would be displayed on the screen before the opportunity for punishment was displayed.

On the next screen, the participant could decide if they would like to punish another player by entering the player number (1, 2, or 3) into a textbox. Alternately, if they did not want to punish any other player they could enter 0 (Figure 2). If the participant decides to punish another player, they also had to decide how many MUs (between 1-10) they would like to take away from the player they chose to punish. If they did not decide to punish another player, they were told to enter 0 into the textbox (Figure 3). Furthermore, the participant was randomly punished throughout the course of the game so they could experience punishment and antisocial punishment. Punishments and winnings were displayed on a screen together so the participant could see who they punished, how many MUs they took away from the indicated player, how many MUs were taken away from them (if any), and how many MUs each player won (Figure

4). In total, there are six periods played. To prevent direct revenge on a certain player, participants were explicitly told that the group composition was shuffled from period to period.

After all the public goods game rounds were completed, participants were asked three additional questions, why they chose to punish other players, which thinking style they utilized, and whether their decisions throughout the game harmed or benefited the other players. Finally, participants read the debriefing document.

Data Analysis

The current study uses a 4 (group gender composition: Male participant vs Female players; Male participant vs Male players; Female participant vs Female players; Female participant vs Male players) x 3 (thinking style: Intuitive, Reflexive, Control) between-groups design. The dependent variable was how many times a participant engages in antisocial punishment (punishing a player who donates the same amount or a higher amount of money than the participant). The covariate was the participants sadism score which should covary with their amount of antisocial punishment. To analyze the data, a parametric version of an ANCOVA, known as a Quade's test was used to examine the effect of the independent variables group gender composition and thinking styles on antisocial punishment, with everyday sadism as a covariate.

Results

Everyday Sadism. To give readers an impression of scale scores, contributions, and punishments, descriptive statistics are provided here and in Table 1. Within our sample 105 participants (female N= 51, male N= 55) were categorized as everyday sadists while the remaining 70 participants were categorized as non-everyday sadists. The average score on the 6 items from the varieties of sadistic tendencies scale (maximum score possible 30) was 10.30

(SD=3.83). A median split (*Mdn*= 9) was conducted to categorize participants as either an everyday sadist or a non-everyday sadist.

Sexism. The average score on the subscale hostile sexism (maximum score possible 66) was 30.42 (*SD*= 13.98; female N= 48, male N= 43), the mean benevolent sexism score (maximum score possible 66) was 34.36 (*SD*= 12.19; female N= 56, male N= 36) and the average score of the two subscales together (known as ambivalent sexism) (maximum score possible 132) was 64.78 (*SD*= 21.61; female N= 54, male N= 40). Again, a median split was used to determine which participants should be categorized as hostile sexists (*Mdn*= 30), benevolent sexist (*Mdn*= 36), and ambivalent sexists (*Mdn*= 67). Within the sample, 91 participants were hostile sexists, 83 were benevolent sexists, and 94 were ambivalent sexists.

MUs Contributed and Taken. The median amount of MUs contributed throughout the six rounds (6 rounds x 20 MUs = 120 MUs maximum) was 81.00 (*SD*= 32.53). The median is reported because the data did not meet the assumptions of normality and all transformations failed to make the data normally distributed. The data for instances of antisocial punishment and uncooperative punishment did not meet the assumptions of normality and therefore the medians for these variables are provided. The medians show that participants engaged in 3.00 (*SD*= 2.13) instances of antisocial punishment and .00 (*SD*=1.23) instances of punishment of uncooperative individuals. The median amount of MUs taken due to antisocial punishment (maximum MUs possible 6 rounds x 10 MUs = 60) was 16.00 (*SD*= 19.47) while the mean amount of MUs taken due to punishment of uncooperative individuals was 3.65 (*SD*= 8.93). The assumptions of normality were not meet for the data on the amount of MUs taken due to antisocial punishment while a log transformation was able to fix normality for the amount of MUs taken from uncooperative individuals. Across the two types of punishment the median amount of MUs taken

from punished individuals was 25.00 (*SD*= 20.01). The median is reported due to the data not being normally distributed.

Main Results. To determine if gender and condition had an effect on antisocial punishment while controlling for sadism score, a nonparametric form on an ANCOVA was performed. Since the variables antisocial punishment and sadism score did not meet the assumptions of normality a nonparametric test had to be employed. Using a Quade's test, we found that gender of the participant and the condition they were placed in had a marginally significant effect on the amount of antisocial punishment participants engaged in, $F(5,163) = 2.19$, $p = .058$.

Correlational Results. Various correlational analyses were performed to determine relationships between variables of interest. In some instances, nonparametric correlations were performed due to some variables not meeting the assumptions of normality. We first wanted to explore the relationship between types of sexism and antisocial punishment (Table 2). Using a Spearman's rho correlation, we found a significant negative relationship between participant benevolent sexism score and amount of antisocial punishment, $r(173) = -.20$, $p = .008$. We also found a significant negative relationship between participant ambivalent sexism score and amount of antisocial punishment, $r(173) = -.19$, $p = .01$. We did not find a significant relationship between participant hostile sexism score and amount of antisocial punishment.

We were also interested in exploring the relationships between sadism scores and sexism scores (Table 3). Using a Pearson correlation we found a significant negative relationship between participant sadism score and participant hostile sexism score, $r(173) = -.29$, $p < .001$. A significant negative relationship was also found between participant sadism score and participant ambivalent sexism score, $r(173) = -.26$, $p = .001$. We did not find a significant relationship

between participant sadism score and participant benevolent sexism score. It should be noted that the variable sadism score did not meet the assumptions of normality and therefore an inverse transformation was performed, and the Pearson correlations were performed using the inverse sadism score.

Lastly, we were interested to explore the relationships between participant sadism score and amount of MUs taken in total, antisocially, and in uncooperative playing conditions (Table 4). However, we did not find any significant relationships.

Discussion

The results of the current study generally support the hypotheses made. Male participants with everyday sadistic tendencies antisocially punished female players less than male players. This is evidenced by the marginally significant result from the Quade's test and bar graph (Figure 5). Males assigned to two specific conditions yielded less antisocial punishment of females. Males assigned to the "Reflective Female" condition and males assigned to the "Control Female" condition antisocially punished those females less than players in the other conditions. In the "Reflective Female" condition, male participants played against three females and viewed a reflective thinking message which prompted them to think about their punishment decisions before making them. In the "Control Female" condition, male participants played against three females but were not instructed on what sort of thinking style to use when making punishment decisions. Interestingly, males who were assigned to the "Intuitive Female" condition (instructed to think quickly about punishment decisions) antisocially punished those female players more than the females in the other conditions. This means that when sadistic males were instructed to make quick decisions, they antisocially punished females more than when instructed to think slowly and carefully about their decisions. In comparison, when males played against other

males, the thinking style instructions, or lack of, did not influence the amount of antisocial punishment.

Since there was a marginally significant effect of gender and condition on antisocial punishment, we can conclude that Pfattheicher et al. (2017) results were replicated, at least for our male participants who played against females. Male participants who were given a reflective thinking message and played against females ultimately engaged in less antisocial punishment compared to when they were given the intuitive thinking message. This replicates Pfattheicher et al. (2017) because they found that when everyday sadistic participants were given a reflective thinking message, they engaged in significantly less antisocial punishment than when they were instructed to think intuitively. However, our female participants did not differ significantly, regardless of which gender they were playing against or the thinking style message they were given during the public goods game. Additionally, the male participants playing against other male players did not differ significantly in their amount of antisocial punishment according to the thinking style messages. Although these last two cases do not support Pfattheicher et al. (2017) findings, these results might be able to be explained by the Social Heuristics Hypothesis (SHH) created by Rand et al. (2014) discussed earlier. It could be that everyday sadistic females have learned that acting antisocially towards both men and women is advantageous and that is why we did not find any significant differences in the amount of antisocial punishment they engaged in with each gender. Likewise, everyday sadistic males might have learned that it advantageous to act antisocially towards males and that is why we did not find any differences in their level of antisocial punishment towards males.

Limitations. One major limitation of the current study was the lack of participants with high levels of everyday sadistic tendencies. Most of the participants were clustered at the low

end of the scale. Our results might have been significant, instead of just marginally significant, if we had more participants with higher everyday sadism scores. Another limitation was the unequal amount of female and male participants. Our sample had more females than males.

Another limitation of the study is the possibility that the participants recruited from Mechanical Turk did not pay full attention to the study or answer the questionnaires truthfully. According to the data from MTurk, the average time participants spent completing the study was only 14.5 minutes. When piloting the study, completion took closer to 25-30 minutes. In the future, time restraints could be added to the questionnaire measures to keep participants from filling them out too quickly. Additionally, time restraints could be added to the public goods game to help encourage the participants to spend time reading all the directions and thinking about their decisions.

Future Directions. In any future studies it would be beneficial to recruit a more diverse population. More specifically, it would be beneficial to find a sample with a wider range of everyday sadism scores. In our sample, most participants scored at the lower end of the scale and only a small number of participants scored at the higher end of the scale. Additionally, to make the public goods game seem more realistic, a future study might have participants actually play for the amount of money they win throughout the game, instead of a bonus. Further, to make the other players in the public good games more realistic, pictures of people could be used instead of general gender icons.

The use of different modalities for antisocial punishment might be considered as well. For instance, participants could be given the option to administer a loud noise blast in other players ears. If one wanted to include a measure of punishment severity, giving participants the option to pick the volume level of the noise blast could be incorporated.

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Tables

Table 1

Participant Demographic Information

Variable	*M*	*Mdn*	*SD*
Age	38.83		10.94
Total Sadism Score	10.30		3.83
Ambivalent Sexism Score	64.78		21.61
Hostile Sexism Score	30.42		13.98
Benevolent Sexism Score	34.36		12.19
Total Antisocial Punishment		3.00	2.13
Total Uncooperative Punishment		.00	1.23
Total Contributions		81.00	32.53
Total MUs taken Antisocially		16.00	19.47
Total MUs taken from Uncooperative Players	9.50		11.60
Total MUs Taken		25.00	20.01

Note. Medians are reported for variables with data that did not meet the assumptions of normality. An inverse transformation was performed on the variable total sadism score and a log transformation was performed on the variable total MUs taken from uncooperative players. N=175 for all variables.

Table 2

Relationships between Ambivalent Sexism Inventory subscale scores and amount of antisocial punishment

Descriptive Statistics (N=175)

Variables	1	2	3	4
1. Ambivalent Sexism	—			
2. Benevolent Sexism	.76**	—		
3. Hostile Sexism	.86**	.37**	—	
4. Total Antisocial Punishment	-.19*	-.20**	-.12	—

Note. Spearman's Rho Correlations were performed due to Total Antisocial Punishment not meeting the assumptions of normality. An inverse transformation was performed on Everyday Sadistic Tendencies Scores. **. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 3

Relationships between Ambivalent Sexism Inventory subscale scores and Everyday Sadistic Tendencies Scores

Descriptive Statistics (N=175)

Variables	1	2	3	4
1. Ambivalent Sexism	—			
2. Benevolent Sexism	.80**	—		
3. Hostile Sexism	.85**	.36**	—	
4. Everyday Sadistic Tendencies Scores	-.26**	-.12	-.29**	—

Note. An inverse transformation was performed on Everyday Sadistic Tendencies Scores.
**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

Table 4

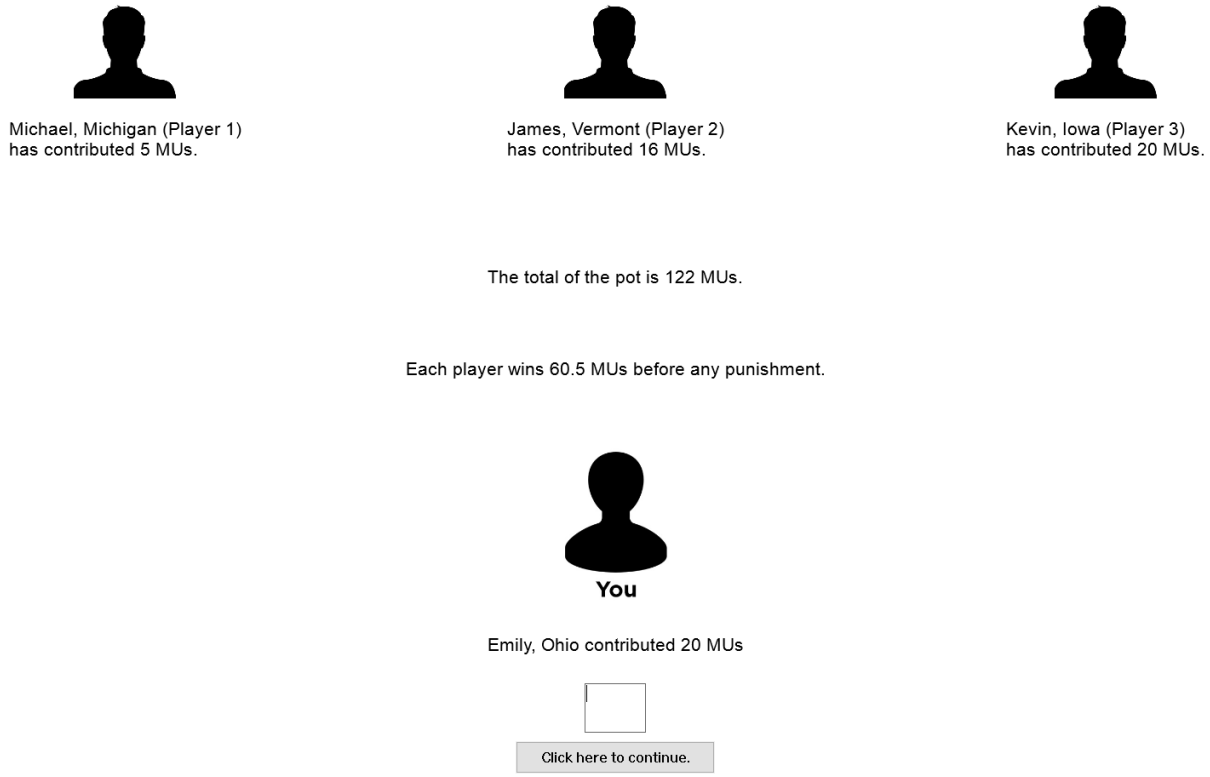
Relationships between Everyday Sadistic Tendencies scores and amount of MUs Taken Descriptive Statistics (N=175)

Variables	1	2	3	4
1. Total Antisocial MUs Taken	—			
2. Total Uncooperative MUs Taken	-.12	—		
3. Total MUs Taken	.90**	.23**	—	
4. Everyday Sadistic Tendencies Scores	-.03	-.05	-.04	—

Note. Spearman's Rho Correlations were performed due to Total Antisocial MUs Taken, Total Uncooperative MUs Taken, and Total MUs Taken not meeting the assumptions of normality. An inverse transformation was performed on Everyday Sadistic Tendencies Scores. **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

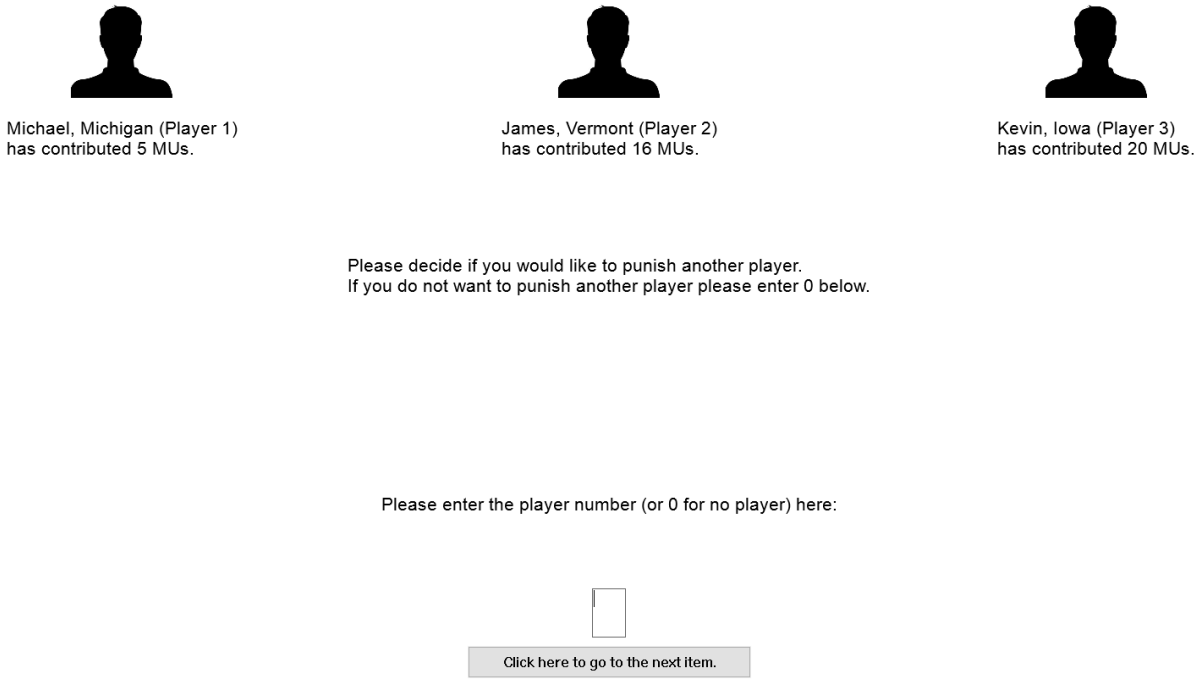
Figures

Figure 1.



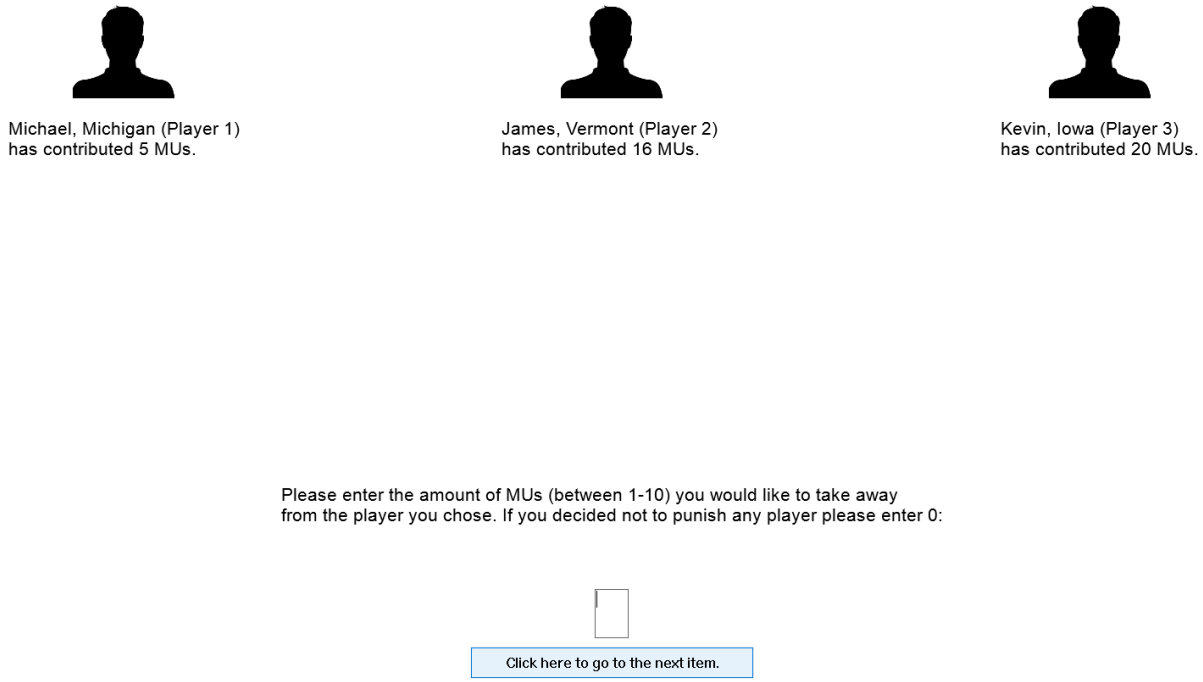
Note. Example of public contributions and pot total screen.

Figure 2.



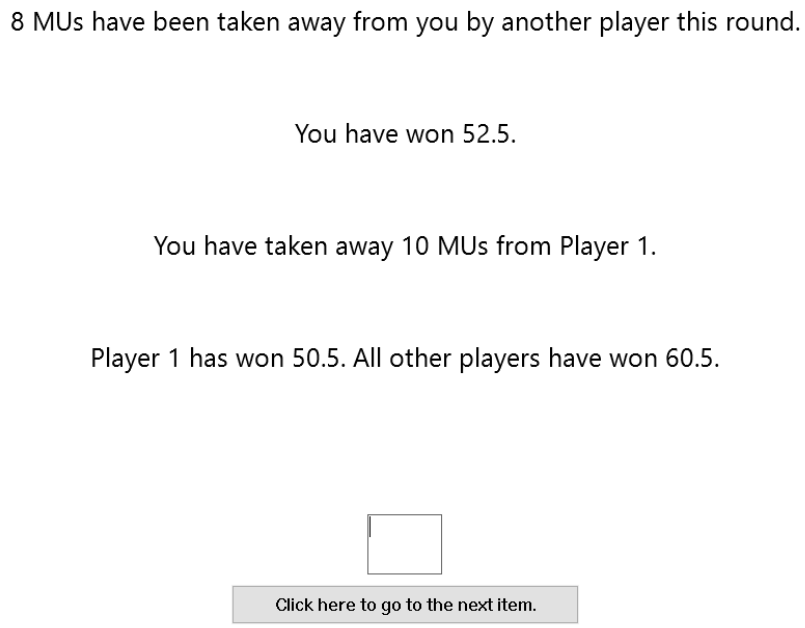
Note. Example of player punishment decision screen.

Figure 3.



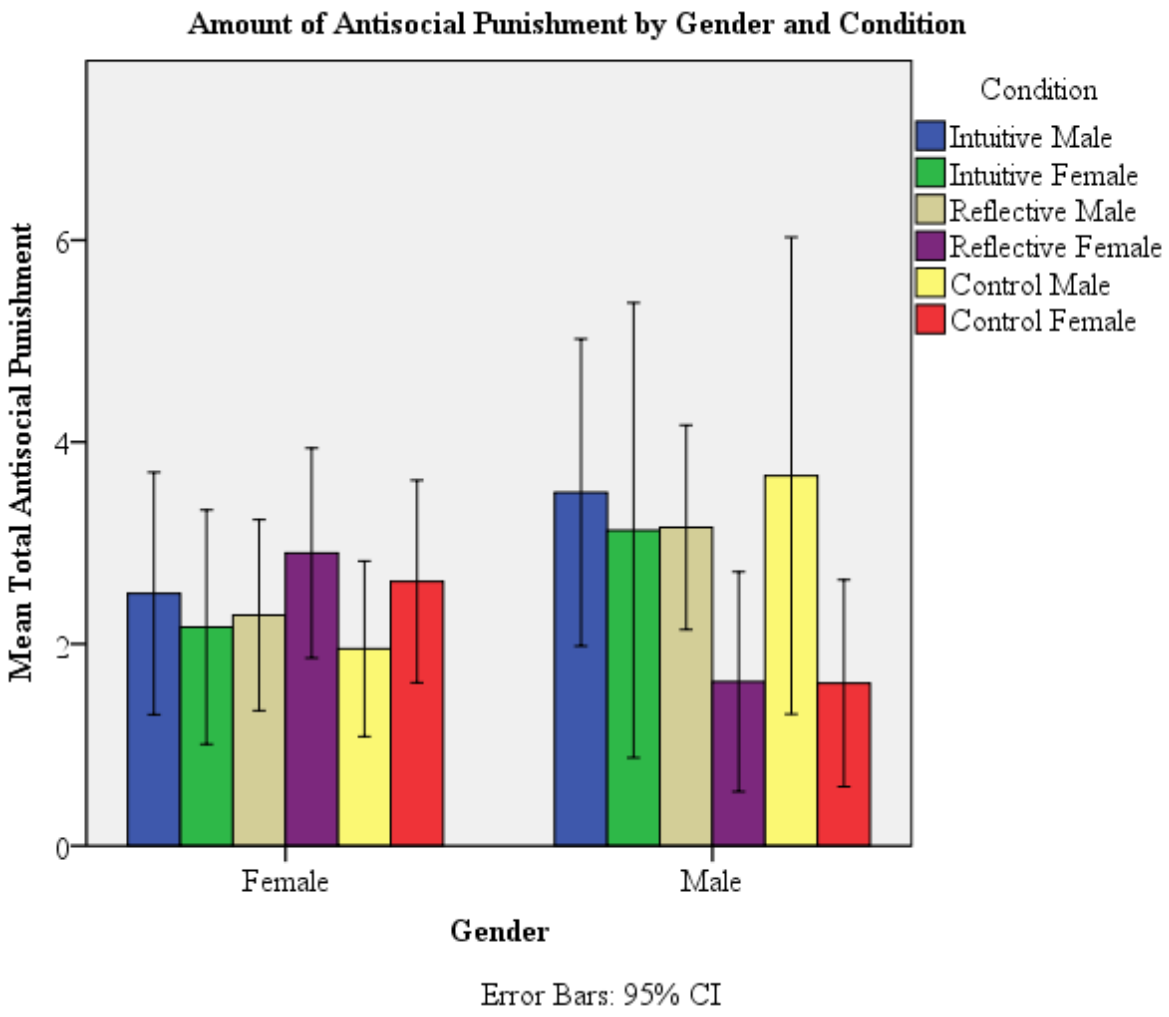
Note. Example of level of punishment decision screen.

Figure 4.



Note. Example of round outcome screen.

Figure 5.



Note. Males with sadistic tendencies punished females the least when they were placed in the "Reflective Female" and "Control Female" conditions.

Appendix A.

Informed Consent Form

Project Title: Personality and Decision Making

Members of the research team: Emily Embrescia, Dr. Mark Sibicky

What is the purpose of this research study?
This study will examine how personality traits affect behavior in a decision-making game.

How many people will take part in this study?
Data from 168 (84 males and 84 females) participants will be collected through Amazon Mechanical Turk.

How long will your part in this study last?
The study should take approximately 30 minutes to complete. If at any point throughout the study you decide you do not wish to continue, you may discontinue without penalty.

What will happen if you take part in the study?
You will be answering personality questionnaires and playing several rounds of a decision-making game online. During the decision-making game you will be deciding how many of your game money units you would like to contribute to the group and how many of your units you would like to keep for yourself. After the decision-making game is over you will be asked a couple additional questions.

What are the possible risks and and/or benefits from being in this study?
There are very minimal risks to participating in this study. Some of the questions you will be asked may make you feel mildly uncomfortable. Additionally, some decisions made by other players in the decision-making game might annoy you. If at any point you do not wish to continue, you may end your participation at any time without penalty. For completing the study, you will earn 75 cents and have the chance to earn a 25 cent bonus.

How will your privacy be protected?
The researchers will make every effort to protect your privacy. All of your responses to study questions will remain confidential. All your responses will be attached to a randomly assigned ID number for data purposes. The research team members will only examine data in aggregate form, and will not identify participants who completed the study. All data collected will be used for scientific purposes only. All data will be destroyed 3 years post-collection.

Participants Agreement
If you have any questions pertaining to this research or your rights as a participant you may contact the researchers, Emily Embrescia (eee003@marietta.edu), Dr. Mark Sibicky (sibickym@marietta.edu). Or you may contact the Chair of the Human Subjects Committee at Marietta College, Dr. Mary Barnas (barnasm@marietta.edu), with any concerns about being a participant. You will have an opportunity to receive an explanation of the research and its

purpose following the completion of the study. This study has been approved by the MC Human Subjects Committee. If you are satisfied with the information outlined above and agree to participate in the research study, please click on the “I agree to participate” button below to continue.

Appendix B.

Please rate your agreement or disagreement on 5-point scales anchored by (1) strongly disagree and (5) strongly agree.

1. I am never too busy to help a friend.
2. I enjoy hurting people.
3. I go out of my way to cheer up people who appear down.
4. I would never purposely humiliate someone.
5. I get impatient when others talk to me about their problems.
6. I was purposely mean to some people in high school.
7. I love to make other people happy.
8. I dominate others using fear.
9. I helped a neighbor in the last month.
10. I enjoy seeing people suffer.
11. I get as excited about the good fortunes of others as I am about my own
12. There's nothing as enjoyable as helping someone in need.
13. I try not to do favors for others.
14. I call my friends when they are sick.
15. I am only kind to others if they have been kind to me.
16. I love to let others share the spotlight.

Appendix C.

Below is a series of statements concerning men and women and their relationships in contemporary society. Please indicate the degree to which you agree or disagree with each statement using the following scale: 0= disagree strongly; 1= disagree somewhat; 2= disagree slightly; 3= agree slightly; 4= agree somewhat; 5= agree strongly.

1. No matter how accomplished he is, a man is not truly complete as a person unless he has the love of a woman.
2. Many women are actually seeking special favors, such as hiring policies that favor them over men, under the guise of asking for "equality".
3. In a disaster, women ought not necessarily to be rescued by men.
4. Most women interpret innocent remarks as being sexist.
5. Women are too easily offended.
6. People are often truly happy in life without being romantically involved with a member of the other sex.
7. Feminists are not seeking for women to have more power than men.
8. Many women have a quality of purity that few men possess.
9. Women should be cherished and protected by men.
10. Most women fail to appreciate fully all that men do for them.
11. Women seen to gain power by getting control over men.
12. Every man ought to have a woman whom he adores.
13. Men are complete without women.
14. Women exaggerate problems they have at work.
15. Once a woman gets a man to commit to her, she usually tries to put him on a tight leash.
16. When women lose to men in a fair competition, they typically complain about being discriminated against.
17. A good woman should be set on a pedestal by her man.
18. There are actually very few women who get a kick out of teasing men by seeming sexually available and then refusing male advances.
19. Women, compared to men, tend to have a superior moral sensibility.
20. Men should be willing to sacrifice their own wellbeing in order to provide financially for the women in their lives.
21. Feminists are making entirely reasonable demand of men.
22. Women, as compared to men, tend to have a more refined sense of culture and good taste.

Appendix D.

Public Goods Game Explanation

You will be playing against three other players. You will only be made aware of each players gender, name and the state in which they reside. Each player, including yourself, will start with 20 money units.

Throughout the game you will be able to choose how many of your money units you would like to keep for yourself and how many of your money units you would like to contribute to the group. After every player has decided how much they would like to contribute, including yourself, those amounts will be made public.

At this point, each player will be given the opportunity to punish any other player they would like. To punish another player, you will be asked how many money units, between 1-10, you would like to take away from that player. Alternatively, if you do not want to punish another player you have that option and there will be instructions on the screen at that time as to what to enter.

After each round, the contributed money units from all the players will be doubled and will be dispersed evenly to every single player. Six rounds will be played total, but you will be playing against new players every single round. The player who ends up with the most money at the end of 6 rounds will be awarded a bonus in addition to the set payment amount.

Appendix E.

1. If you punished another player anytime during the game, how did you decide to punish them? Did you use your emotions, or did you think rationally about your decision?

1	2	3	4	5	6	7
Emotion			Neutral			Rational Thought

2. How did you decide to punish another player? For instance, did you go with your gut or think through different decisions?

1	2	3	4	5	6	7
Quick			Neutral			Deliberate

3. Do you feel your decisions throughout the game harmed or benefited other players?

1	2	3	4	5	6	7
Beneficial			Neutral			Harmful

Appendix F.

Debriefing Statement

Thank you for taking part in this valuable research study. The purpose of this research is to study the effects of gender and personality traits on cooperative behavior. There are many different personality traits that can have differing influences on how one will behave in given situations. Some personality traits can lead people to be more helpful while other personality traits can lead people to be less helpful in certain situations. Additionally, there are many instances in which people will help and in which people will not help. It is okay if you did not donate a portion of your money unit endowment to the public good every round or in any rounds of the game because not everyone gives in every situation.

Additionally, at the beginning of the study you were led to believe that only the player with the largest amount of money units at the end of the six rounds of the game would be awarded a bonus. However, every single participant will be awarded the bonus. This deception about the bonus was included in the study to motivate all participants to take the study seriously and give their full attention and effort.

Again, thank you for participating and any questions pertaining to the study can be directed to Emily Embrescia (eee003@marietta.edu) or Mark Sibicky (sibickym@marietta.edu).