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# Personality and Organizational Justice Effects on Counterproductive Work Behavior

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# PERSONALITY AND ORGANIZATIONAL JUSTICE EFFECTS ON COUNTERPRODUCTIVE WORK BEHAVIOR

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ABSTRACT

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Counterproductive work behavior (CWB) costs U.S. organizations billions annually (e.g., Bennett & Robinson, 2000). Any behavior that goes against the goals of an organization and is intended to harm either the organization or its members can fit the definition of CWB. To properly address these problems an accurate understanding of CWB and its' determinants is necessary. Employee perceptions of fairness (organizational justice) is linked to CWB because employees reciprocate unfair treatment with CWB (e.g., Shaw et al., 2003), and the personality traits honesty-humility and self-control are also strong determinants of CWB because high levels of these traits will suppress the urge to act counterproductively (Lee et al., 2019; Marcus & Schuler, 2004). Moreover, CWB is caused by characteristics of the situation interacting with those of the individual (e.g., Eschleman et al., 2014), but little is known about how personality is related to justice in organizations. There are only a handful of other studies (e.g., Colquitt et al., 2006; Scott & Colquitt, 2007) that have tested for a person x organizational justice effect on CWB. Furthermore, this study uses an experimental design to optimally detect causation attributable to the hypotheses. The results of this study support the idea that high honesty-humility-humility leads to attentiveness to fairness and to the social exchange closely related to organizational justice, but that neither honesty-humility nor self-control suppress (moderate) the urge to retaliate against perceptions of injustice in terms of CWB.

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# Introduction

## Organizational Justice

The perceptions of fairness construct has been discussed at least since the time of Socrates and has been given a lot of attention by organizational psychologists since the turn of the century (e.g., Bobocel, 2021; Chang, 2015; Colquitt, 2001). Today, this construct is understood as *organizational justice*, or perceptions of fairness within organizations. Although French (1964) was the first to use the term organizational justice, equity theory (Adams, 1965) is typically recognized as the start of modern organizational justice literature. Equity theory shares with social exchange theory (Homans, 1961) the premises that person-person and person-organization relationships can be explained in terms of costs and rewards for the involved parties, and that people will reciprocate fair actions with fair rewards in a social exchange (Cropanzano, Rupp, et al., 2001; Cropanzano & Mitchell, 2005; Cropanzano & Rupp, 2008; Settoon, Bennett, & Liden, 1996). Equity theory added to social exchange theory that persons are concerned with their own input-output ratio, and that they perceive equity when their input-output ratio is similar to that of others. Today, the comparison of one's input-output ratio to the ratios of others is known as *distributive justice*, which is one of the three dimensions of organizational justice. Hence, distributive justice can be defined as the perception of fairness regarding the distribution of outcomes. In the context of Cyberball, distributive justice can be understood as one's perception that they are being tossed ("distributed") the ball roughly an equal number of times as the confederates.

In 1975, Thibaut and Walker introduced the term *procedural justice* and reasoned that the fairness of the rules, procedures, and laws that dictate a social exchange will influence one's perceptions of fairness as well (Colquitt, 2001; Leventhal, 1980; Thibaut & Walker, 1975).

Hence, procedural justice describes the extent to which one thinks the procedures used to make decisions within their organization are fair. The work of Leventhal (1980) and Leventhal et al. (1980) brought procedural justice into the organizational literature and identified several procedural characteristics that determine perceptions of fairness, such as bias-suppression, ethicality, and consistency in judgement (Colquitt, 2001).

The work by Sweeney and McFarlin (1992, 1993) validated the distinction between distributive and procedural justice by showing that they relate to different outcomes. According to this two-factor model of justice, distributive justice is related to person-referenced outcomes whereas procedural justice is related to organization-referenced outcomes. This distinction has since received meta-analytic support (e.g., Chang, 2015; Colquitt et al., 2001; Cohen-Charash & Spector, 2001). Hence, the fairness of the rules and procedures used to allocate an outcome matters in addition to the allocation of the outcome itself.

In 1986, Bies and Moag identified a third dimension of justice, *interactional justice*. This dimension refers to the judgement about the fairness of the source of the unfair treatment. Interactional justice is not necessarily based on the allocation of outcomes (distributive justice), or the rules of the social exchange (procedural justice). Interactional justice regards the quality of the interpersonal treatment itself, which happens during the allocation of outcomes, and is based on the rules of the social exchange. Accordingly, the interaction is perceived as fair when the content of the interaction is of sufficient quality and the perceiving party is treated politely, regardless of the outcome or procedures used to reach the outcome per se. In Cyberball, interactional justice can be understood as the participants' judgement of the quality of their treatment, and if they perceive the confederates themselves to be playing fairly. In accordance

with social exchange theory, interactional justice can be understood as the sense of bond and mutual obligation that the participant feels towards the confederates.

Interactional justice was originally conceptualized as having two facets, or as a broader term for two distinct dimensions (e.g., Colquitt, 2001; Greenberg, 1993b). Namely, interactional justice was conceptualized as a conjunct of *interpersonal justice* and *informational justice*, both of which refer to different aspects of the implementation of a procedure. Interpersonal justice refers to the fairness perceived that is based on the quality of respect during the interaction (Colquitt et al, 2001; Greenberg, 1993b). Informational justice is the fairness perceived based on the quality of the information and explanation provided during the interaction (Colquitt et al, 2001; Greenberg, 1993b). Hence, a four-dimensional model of organizational justice has received empirical support (e.g., Colquitt, 2001). However, more recent evidence supports a three-dimensional model of organizational justice, one in which informational and procedural justice converge, and in which interpersonal and interactional justice converge as well (e.g., Karricker, 2006; Roch and Shanock, 2006). Hence, decisions about the fairness of a social exchange have three components: the allocation of outcomes, the procedures used to decide the outcome, and the interpersonal interaction by which the outcome is distributed (Colquitt, 2012).

Regardless of the structure of the construct, justice in organizations is best understood when all dimensions can be considered. Colquitt (2001) conducted a controlled experiment and a field study and found that a four-dimensional model of justice best fit their data in both studies, implying that organizational justice is best understood when the four-dimension model is used, whereas a three-dimensional model was found to inadequately describe organizational justice. There is meta-analytic evidence to suggest the existence of four independent dimensions as well (Colquitt et al. 2001), although other meta-analyses and most studies use a three-dimensional

model (Chang, 2015; Cohen-Charash & Spector, 2001). Though the work by Colquitt (2001) was convincing at the time, the three-dimensional model has since been supported by conceptual and empirical similarities between the respective dimensions. For instance, Karriker (2006) reported that the correlation between informational and procedural justice is near one, implying that these two dimensions are not distinct. To this point, informational justice is one's perception of the sufficiency of the information that they were given about the procedures, and procedural justice is one's perception of the procedures themselves, which must include information that they are given. Roch and Shanock's (2006) results support the convergence of informational justice with procedural justice, and their results also support the convergence of interpersonal and interactional justice into their own dimension as well. Hence, the facet structure of organizational justice is best characterized as having three dimensions.

Interestingly, some researchers have examined the usefulness and plausibility of an overall justice construct (e.g., Ambrose et al., 2015; Ambrose & Schminke, 2009). Overall justice is not an individual judgement like distributive, procedural, or interactional justice; rather, overall justice is a general attitude about the fairness of something. In the context of Cyberball, overall justice can be understood as the participants' overall impression on whether or not they were treated fairly during the game of catch. In Cyberball, the participants' perception of overall justice will thus be based on their judgements of how the confederates are treating them, the distribution of the ball, and perhaps any inferences they make about the rules of the social exchange governing the game of catch. Ambrose and Schminke's (2009) results indicated that overall justice mediates the effects of the respective justice dimensions have on employee attitudes and behaviors. Thus, when considering the fairness of a distribution, procedure, and/or an interaction, we also consider our perception of overall justice. In theory, it is our perception of

overall justice that causes our otherwise independent perceptions of organizational justice to correlate. Therefore, to properly capture organizational justice, researchers should consider measuring all three dimensions of organizational justice (distributive, procedural, interpersonal) as well as overall justice to best characterize the construct and its' relation to other variables.

**Consequences of Organizational Justice**

Organizational justice can be studied as both an antecedent and a consequence of other organizational variables, but organizational justice has received extensive attention from scholars and practitioners mainly because it is related to many organizational outcomes (e.g., Bobocel, 2021; Greenberg, 1987). This section will discuss organizational justice influences many outcomes, such as task performance, organizational citizenship behaviors and CWB. Procedural justice generally has the strongest relationship with these outcomes. Meta-analytic estimates for this relationship between procedural justice and task performance are about $r = .40$ (Chang, 2015; Cohen-Charash & Spector, 2001; Colquitt et al, 2001), whereas meta-analytic estimates for the relationships between distributive and interactional justice and task performance are substantially smaller than this, lying around $r = .15$ (Chang, 2015; Cohen-Charash & Spector, 2001; Colquitt, et al, 2001). Meta-analyses estimate procedural justice to have the largest relationship with organizational citizenship behavior, compared to the other dimensions of organizational justice, although the confidence intervals of these estimates consistently overlap (Chang, 2015, Cohen-Charash & Spector, 2001). Social exchange theory explains these relationships and posits that employees generally reciprocate good treatment with good performance. There will be more on the organizational justice-CWB relationship later in this paper.

Organizational justice is also related to many job attitudes and occupational stress outcomes. For instance, procedural justice and distributive justice both have strong relationships with organizational commitment. Meta-analytic estimates for procedural and distributive justice are about $r$ =.50 and the estimate for interactional justice is about $r$ = .10 (Cohen-Charash & Spector, 2001; Colquitt, et al, 2001). Meta-analyses estimate distributive justice to have the strongest relationship with job satisfaction ($r$ = ~.50), with procedural justice and interactional justice ($r$ =~.40) following close behind (Cohen-Charash & Spector, 2001; Colquitt, et al, 2001). All three dimensions of justice appear to have moderate-strength relationships with trust, though the type of trust (supervisor- or organization- oriented) matters (Cohen-Charash & Spector, 2001; Colquitt, et al, 2001). In general, perceptions of procedural justice are most-strongly related to performance and perceptions of distributive and interactional justice are most-strongly related to attitudes at the individual level. This is consistent with the agent system model of justice (Bies & Moag, 1986), which posits that people tend to reciprocate or respond towards the perceived source of (in)justice, such as managers, coworkers, or an organization (see Jones, 2009 also). Organizational justice has implications for many other important work outcomes, but my study is interested in the relationship between organizational justice, CWB, and personality.

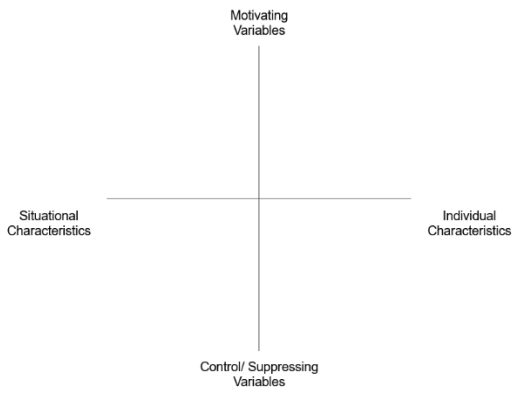
*Counterproductive Work Behavior*

Any behavior can fit the definition of CWB if it goes against the goals of an organization and the individuals within it and is intentional (Robinson & Bennett, 1995). Hence, many behaviors have been classified as CWB such as sabotage (Spector et al., 2006), abusive supervision (Tepper, 2007; Wei & Si, 2013), theft (Greenberg, 1990; Scott & Colquitt, 2007), retaliation (Skarlicki & Folger, 1997), revenge (Bies & Tripp, 2005), sexual harassment (Popovich & Warren, 2010), and many others. Because of the variety of behaviors that can be

classified as counterproductive, many taxonomies have been proposed to organize CWB. Accordingly, the CWB construct has been conceptualized as having two (Robinson & Bennett, 1995; Bennett & Robinson, 2000), five (Spector et al., 2006) and even eleven facets (Gruys & Sackett, 2003). There is also support for a general counterproductive (work) behavior factor that underlies all or most CWB (e.g., Marcus & Schuler, 2004; Sackett & DeVore, 2001). The general counterproductive (work) behavior construct is supported by all CWBs sharing a fundamental intent to harm in a way that is counterproductive to the goals of the organization, but this does not mean that all CWBs are the same, and it is possible that no taxonomy will ever be exhaustive.

The taxonomy created by Marcus and Schuler (2004) categorizes the determinants of general counterproductive (work) behavior as either a variable that is internal or external to the behaving agent, and as either a motivator or suppressor of general counterproductive (work) behavior. For instance, the authors categorize perceived injustice as an external motivator (*trigger*) because it is a perception about the external work environment and causes CWB to occur via cognitive and affective mediators. Although their taxonomy is useful, it does not account for the influence of person x situation interactions, where the influence of one variable is contingent on the levels of another in another category. In such cases the overlap between categories is can be useful in predicting CWB. See figure 1.

*Figure 1: Taxonomy of Determinants of CWB (Marcus & Schuler, 2004)*




Moreover, the nature and significance of CWB cannot be understood until we know what causes it to occur, and how it relates to other important workplace variables. Regarding its causes, CWB has both situation-based and individual-based influences that determine the type of CWB and the extent to which it occurs. To this point, if the situation affects our behavior via psychological processes (e.g., negative affect), then qualities of the individual will affect both how one interprets the situation and how counterproductively one responds, if at all. This means that even in the situation, people will act differently because of the influence of individual differences. In fact, many studies have found meaningful interactions between the situation-based and individual-based predictors, such that the combination of the determinants predicts CWB beyond the sum of those predictors together (e.g., Eschleman, Bowling, & LaHuis, 2015; Fox, Spector, & Miles, 2001; Penney & Spector, 2005). Thus, where there are CWB, three things are always true: The CWB occurs in context; the CWB is performed by a unique agent; and these determinants are never completely unrelated. In the following sections, I will introduce three strong predictors of CWB, and discuss my hypotheses in detail.

*Organizational Justice and CWB*

When employees perceive that they are being treated unfairly, they are likely to act out in counterproductive ways (e.g., Chang, 2015; Cohen-Charash & Spector, 2001). From a social exchange perspective, people reciprocate unfair treatment with CWB. That is, when people perceive that they are being treated unfairly, they retaliate and respond to bad treatment with bad behavior. Moreover, people aim their response at the source of the organizational (in)justice (Bies & Moag, 1986). For example, an organization with unfair policy may be met with low productivity, but a manager who plays favorites and is rude to their subordinates may be met with mistrust or have their Lunchables stolen.

There are multiple theories that explain why organizational justice could cause CWB. Fox, Spector, and Miles (2001) showed that organizational injustice can cause stress and negative affect, which mediates the effect that organizational justice has on CWB. Similarly, CWB could also be a coping response to work stressors such as injustice, where people try to alleviate negative states by acting in counterproductive ways (e.g., Krischer, 2010). Ego depletion theory (Baumeister et al., 1998) could also explain this relationship. According to this theory, responding in fair and socially acceptable ways to unfair treatment may require self-control, which when depleted could increase the chances of CWB occurring (Johnson, Lanaj, & Barnes, 2014). Although Friese et al. (2018) concluded that there is not sufficient evidence to suggest that ego depletion exists per se, Marcus and Schuler (2004) demonstrated the usefulness of self-control as an individual difference variable in predicting general counterproductive (work) behavior.

Other researchers have characterized CWB as a purposeful, cognition-based response to organizational injustice (e.g., Greenberg, 1990; Skarlicki & Folger, 1997; Starlicki, Folger, &

Tesluk, 1999; see Fox, Spector, & Miles, 2001). The cognition-based models are not incompatible with the models based on negative affect and stress. For instance, the perception of organizational justice is itself a judgement of fair social exchange, which is cognitive in nature, and the perception of injustice can lead to negative affect and stress (Fox, Spector, & Miles, 2001). Equity theory could also explain this relationship. CWB could be used to "level the playing field" or in to alter one's input-output ratio during a social exchange. Nonetheless, an individuals' perception of the situation will help define what behaviors will be reciprocated in a fair social exchange, be it mediated or not mediated by negative affect or stress. Therefore, this study uses social exchange theory to explain the relationship between organizational justice and CWB, although this explanation is not necessarily exhaustive.

There is abundant meta-analytic support of the organizational justice – CWB relationship. Cohen-Charash and Spector (2001) estimate the relationship between procedural justice and CWB (weighted mean $r$ = -.28) and distributive justice and CWB (weighted mean $r$ = -.22) to be of moderate size. The confidence intervals for these estimates overlap. Chang (2015) however estimates the population effects of organizational justice to be smaller, with distributive justice (weighted mean r = -.13), procedural justice (weighted mean r = -.14), and interactional justice (weighted mean r = -.18) estimates all being smaller. The confidence intervals for these three estimates overlap as well. The size of the reported confidence intervals and the variance explained by organizational justice in both meta-analyses implies ample room for moderators, such as individual difference variables.

Moreover, most research on CWB and organizational justice is correlational and uses common survey methods. Wherefore these studies can seldom determine cause and effect, the possibility that CWB influenced organizational justice is often left unchecked. For instance, it is

conceivable that research participants who act in counterproductive ways are more likely to be given undesirable outcomes (distributive injustice) or are more likely to be treated disrespectfully in return (interactional injustice). In such a case, CWB can indirectly influence organizational justice perceptions, instead of the other way around. Hence it is possible that the relationship between CWB and justice has causal effects in multiple directions, and a survey-based correlational design may be unable to discriminate between these mechanisms. Therefore, a randomized experiment that can control for the influence of individual difference variables and manipulate and control the sequencing of the predictor variable (organizational justice) is best suited to study this kind of causal model.

## Antecedents of Organizational Justice

### *Demographic Characteristics of the Perceiver*

An understanding of the situational and person-based antecedents of justice is necessary to understand organizational justice and its effects. The situational antecedents of justice perceptions are characteristics of the social exchange and include such characteristics of the situation as insufficient pay, disrespect, and biased grading procedures (e.g., Adams, 1965; Bies & Moag, 1986; Colquitt, 2001; Cropanzano & Mitchell, 2005; Cropanzano & Rupp, 2008; Greenberg, 1993b; Thibaut & Walker, 1975). Most of the organizational justice literature has been dedicated to identifying characteristics of the situation that affect justice perceptions. However, persons vary in the extent to which they perceive justice in the same situations, and a minority of studies on organizational justice have examined individual difference variables (e.g., Colquitt, Scott, Judge, & Shaw, 2006; Greenberg, 2001; Skarlicki et al., 1999; Shi, Lin, Wang, & Wang, 2009). Just like CWB and other important outcomes, it is important to know if a given justice perception is a result of the situation, a result of the perceiver, or both. Henceforth, when

studying organizational justice, the influences of both the perceiver and the situation must be considered.

In their meta-analysis, Cohen-Charash and Spector (2001) examined several characteristics of the perceiver as "predictors" of organizational justice. They concluded that "demographic characteristics of the perceiver", such as race, gender, and age, are not significantly related to perceptions of justice. In their meta-analysis, the only demographic variable that had any sizable relationship with organizational justice was salary, which was shown to be slightly positively related to procedural and distributive justice (Cohen-Charash & Spector, 2001). My thesis is concerned with personality characteristics of the perceiver and not necessarily demographic characteristics.

*Personality Characteristics of the Perceiver*

The five-factor model of personality (the Big Five) defines five meaningful and broad personality traits, commonly labelled as conscientiousness, agreeableness, neuroticism, openness to new experience, and extraversion (Fiske, 1949; McCrae & Costa, 1987, 2003). These traits have been associated with many attitudes and outcomes, such as work performance and job satisfaction (Barrick & Mount, 1991; Barrick, Mount, & Judge, 2001; Judge, Heller, & Mount, 2002). Those who score high on conscientiousness are often ambitious, scrupulous, and organized (Roberts et al, 2014). Those who score high on agreeableness are often cooperative, modest, and likeable (Crowe, Lynam, & Miller, 2017; Hogan, 1983). Those who score high on neuroticism are often more emotionally reactive and tend to experience more negative emotions in general (Barrick & Mount, 1991). Those who score high on openness to new experience tend to have less consistent habits, change jobs often, and have been described as intellectual (Barrick

& Mount, 1991; McCrae & Costa, 1997). Those who score high on extraversion tend to be sociable, assertive, and energetic (Barrick & Mount, 1991; McCrae & Costa, 1997).

Considering the importance of justice in organizations, there has been surprisingly little research published on the personality-justice interaction. Few studies have explored how personality traits can affect organizational justice or how they interact. In fact, Shi et al. (2009) noted that they were not aware of any research before their study that was interested in the effects of five-factor model personality traits on organizational justice in a field setting. Since then, Tornroos et al. (2019) found similar results using a Finnish field sample. Tornroos et al. (2019) noted that Shi et al. (2009) was the only other known study that was interested in such an effect, although other studies have reported organizational justice and the five-factor model of personality (e.g., see Cohen-Charash & Spector, 2001). Taken together, the results of the aforementioned studies suggest that neuroticism is negatively related to, and agreeableness is positively related to, all dimensions of organizational justice, in both concurrent and predictive designs. Hence, those who are more emotionally reactive may report stronger experiences of injustice, and those who are more agreeable may be less-inclined to call-out their supervisors or coworkers for being unfair. This suggests that personality can affect organizational justice.

Both Shi et al. (2009) and Tornroos et al. (2019) noted insufficient theoretical backing to hypothesize why conscientiousness or extraversion would be significantly related to justice perceptions. However, Cohen-Charash and Spector (2001) reported positive relationships between conscientiousness and distributive, procedural, and interactional justice in their meta-analysis. More recently, Huang et al. (2017) found that conscientiousness and agreeableness can lead to favorable managerial behaviors and in-turn have a positive effect on organizational justice. I could only find one study that even reported correlations between honesty-humility and

justice perceptions, and the correlations ranged from r = .11 to .18 for the respective dimensions (O'Neill et al., 2011). Nonetheless, the extent to which one prioritizes their own needs should affect their perceptions of fair social exchange.

**Honesty-Humility**

Since the emergence of the Big Five, evidence of a sixth factor commonly called honesty-humility has emerged, and the resulting six-factor model is known as HEXACO (e.g., Ashton & Lee, 2005). Variance in honesty-humility reflects the extent to which people are willing to prioritize themselves and help or harm others to get what they want. Hence, variance honesty-humility "explicitly contrasts pro-social and anti-social behavior" and reflects the light- and dark- sides of human nature (Furnham, Richards, & Paulhus, 2013, pp. 204). Thus, high scorers on honesty-humility are likely to be cognizant of the rights of others and less likely to be selfish, offensive, or deceitful for this reason. As the sixth sibling, honesty-humility adds meaningful incremental validity to the previous Big Five in relation to many outcomes, including behaviors that involve pro-social or anti-social motives like organizational citizenship behavior and CWB (e.g., Pletzer et al., 2019).

According to Lee and Ashton (2004) and Ashton and Lee (2005), those who score high on honesty-humility are modest and tend to avoid greed and selfish acts. Accordingly, the four facets that make-up the honesty-humility construct are labelled modesty, sincerity, fairness, and greed avoidance. Greed avoidance describes one's interest in social status and wealth. A sample item for the greed avoidance facet is "Having a lot of money is not especially important to me" (Ashton & Lee, 2009). Modesty describes one's perception of their own self-worth and a sample item for this facet is "I think that I am entitled to more respect than the average person is" (Ashton & Lee, 2009). Similarly, the sincerity facet describes one's genuineness in interpersonal

interactions. A sample sincerity item is “I wouldn’t use flattery to get a raise or promotion at work, even if I thought it would succeed” (Ashton & Lee, 2009). Together, the modesty and sincerity facets describe the extent to which one will prioritize their own needs over others, which is conceptually similar to the fairness facet. The fairness facet denotes one’s willingness to gain by dishonest means and exploit others, and a sample item of fairness is “I’d be tempted to use counterfeit money, if I were sure I could get away with it” (Ashton & Lee, 2009). Hence, someone who scores high on a valid measure of honesty-humility avoids selfish acts, is not greedy, and respects the rights of others. Opposingly, those who score low on honesty-humility may be selfish, disregard the rights of others, and be willing to exploit others for personal gain. Therefore, one’s level of honesty-humility should affect their perception of fair social exchange because those who are honest and humble will by necessity value fair social exchange because of the facet fairness and their non-selfish nature.

High honesty-humility is interchangeable with low scores on the general dark factor of the dark triad. The dark triad (Paulhus & Williams, 2002) is a taxonomy of three sub-clinical personality traits that share tendencies to be selfish and lack remorse when harming others, which necessarily oppose the selfless character of those who are honest and humble. Hence, scores on honesty-humility and the three dark traits are strongly negatively related (e.g., Jonason & McCain, 2012; Lee & Ashton, 2005, 2014; Lee et al., 2013). Lee et al. (2013) report common variance between the dark triad and honesty-humility to range from -.80 to -.94 for self and other reports, using two samples. Additionally, in their meta-analysis, Hodson et al. (2018) estimate the population correlation to be -0.95 between the common factor underlying the dark triad and honesty-humility. Based on this evidence, those who score low on honesty-humility necessarily possess the callousness and selfishness of those who score high on one or more of the dark triad

traits. This conclusion is bolstered by the fact that the empirical relationship between these traits is as high as the reliability of most measures of personality.

*Honesty-Humility and CWB*

Honesty-humility and the general dark factor are empirically inverse; and what is true of one must be inversely true of the other. The meta-analysis by O'Boyle et al. (2012) found that the three personality traits making up the dark triad are all positively related to CWB, and the authors suggest that this relationship is explainable in terms of social exchange. In their words, "the consistent violation of the basic assumptions of a fair exchange relationship", such as reciprocity and respecting the rights of others, explains the selfish and callous behavior that is prevalent among dark personalities in organizations (O'Boyle, et al., 2012, pp. 559). Because honesty-humility and the general dark factor are empirically inverse, O'Boyle et al.'s findings must also be true of honesty humility. Therefore, the callous and selfish nature of those who score low on honesty-humility explains their propensity to behave in antisocial and counterproductive ways. In other words, those who are honest and humble are fair-minded and avoid greed and are less likely to harm their employer or coworkers out of self-interest (Oh et al., 2011; Pletzer et al., 2019). Thus, because those low on honesty-humility are more likely to break the norms of a fair social exchange, they should also retaliate against instances of injustice with greater amounts of CWB than those who are modest and value fairness.

Like the dark triad (Grijalva & Newman, 2015; O'Boyle, et al., 2012), honesty-humility has been found to explain unique variance in CWB after controlling for the influence of the Big Five (Pletzer et al., 2019, Lee et al., 2019). Specifically, Lee et al. (2019) estimated the population correlation between honesty-humility and CWB to be -0.44, and Pletzer, et al. (2019) estimated the population correlation to be -0.39, with honesty-humility having a greater influence

on CWB than the combined influence of the other five HEXACO traits. Social exchange theory should explain the relationship between honesty-humility and CWB because innate in the honesty-humility construct is fairness and respect of the rights of others. Hence, honest-humility is a strong predictor of CWB because of the importance of fair social exchange to the honesty-humility construct.

*Honesty-Humility X Organizational Justice Interaction*

Although this personality trait is useful in predicting CWB, the influence of the situation must not be overlooked. Honesty-humility does not predict CWB perfectly, and the amount of variance explained in meta-analytic estimates of this relationship suggest the influence of situational moderators, such as organizational justice (e.g., O'Boyle et al., 2012; Pletzer et al., 2019). It is also true that respect for fair social exchange is central to the honesty-humility construct, and that perceptions of fair social exchange are also related to CWB. Therefore, one's level of honesty-humility should affect their perceptions of fair social exchange and affect their CWB response to injustice as well.

In other words, if participants are put in identical situations of organizational injustice, variance in their perceptions of, and responses to, the injustice should be related to their levels of honesty humility. To summarize, those who score low on honesty-humility will perceive more organizational injustice when treated just as unfairly as those who are high in honesty-humility because the low-scorers will only be concerned with their own outcomes. Also, those who score low on honesty-humility will react to said injustice with greater amounts of CWB than those who score high on honesty-humility, because the former is more callous and less concerned with the rights of others. In this sense, high honesty-humility will act as a "suppressor" of one's CWB

response to organizational injustice and their cognitions leading up to that response (Marcus & Schuler, 2004).

Therefore, I make two predictions. Foremost, honesty-humility will moderate the relationship between the experimental manipulation and perceptions of organizational justice. Specifically, those who score lower in honesty-humility will show a more negative relationship between the fairness of their experimental condition and their perception of organizational justice than high scorers. Secondly, honesty-humility will moderate the relationship between organizational justice and CWB. Specifically, when participants are given an opportunity to retaliate against the source of the injustice, those who score lower in honesty-humility will show a more negative relationship between their perceptions of organizational justice and CWB. Hence the following hypotheses and model are proposed.

*H1*: Honesty-humility will moderate the relationship between the manipulation and perceptions of organizational justice, such that those who score high on honesty-humility will perceive more organizational justice than those who score low on honesty-humility; but high and low-scorers will not differ significantly in the justice condition.

*H2*: Honesty-humility will moderate the relationship between organizational justice and CWB, such that participants who score low on honesty-humility will show a more negative relationship between organizational justice and CWB, compared to those participants who score high on honesty-humility.

*Figure 2: Honesty-humility will moderate the effect of the manipulation on organizational justice and the effect of organizational justice on CWB.*

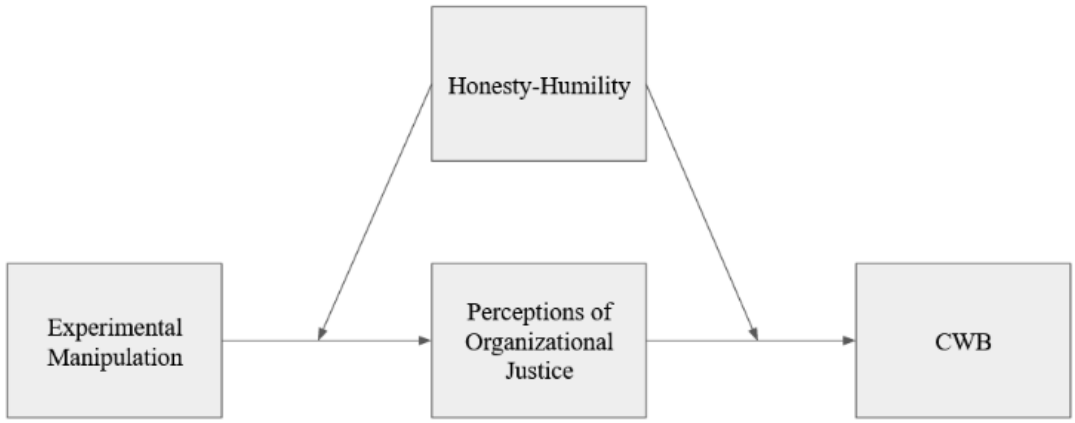
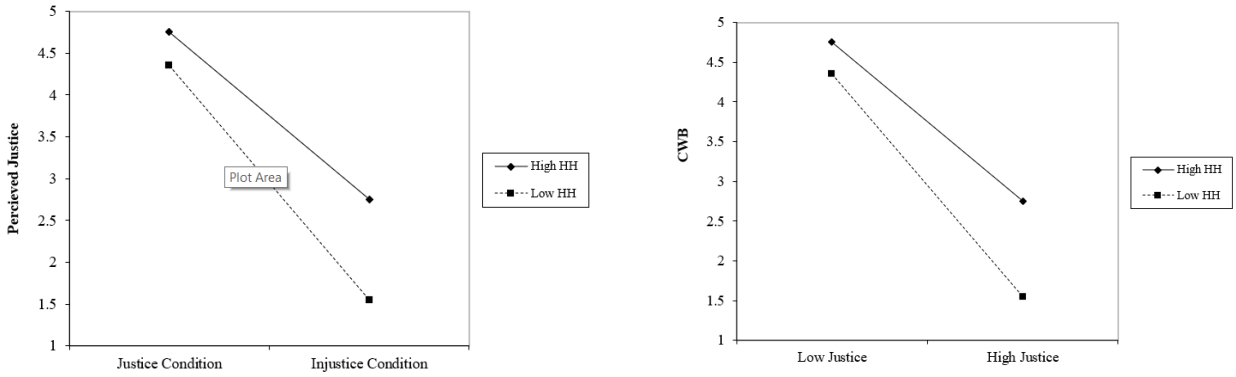



*Figure 3: Visualization of Hypotheses 1 and Hypothesis 2*




**Self-Control**

Honesty-humility is not the only personality trait that predicts CWB. The personality trait *self-control* is a strong predictor of deviant and criminal behavior and should therefore predict most types of CWB as well (e.g., Gottfredson & Hirschi, 1990; Marcus & Schuler, 2004; Pratt & Cullen, 2000). As Gottfredson and Hirschi (1990) and others have argued, all criminal behaviors

have in common an opportunity for immediate gratification at the expense of the possibility of future consequences. Following this theory, Gottfredson and Hirschi found that self-control is a strong predictor of all criminal behavior because the trait self-control can inhibit the need for immediate gratification and thus inhibit the common factor underlying all criminal behavior. In fact, they concluded that self-control was so powerful and generalizable of a predictor of criminal behavior that other personality traits could only add small increments to what is already known by self-control, when predicting general crime. The finding that self-control was the most-powerful predictor of general criminal behavior is further supported by Pratt and Cullen's (2000) meta-analysis, although the supremacy of self-control has faced resistance (see Hirschi & Gottfredson, 2000). Although Gottfredson and Hirschi were primarily interested in criminal behavior, they uncovered an important commonality shared by all CWB: immediate gratification.

Based on the work by Gottfredson and Hirschi (1990), Marcus and Schuler (2004) deduced and tested the theory that self-control predicts general counterproductive [work] behavior (*GCB*). Like criminal behavior, Marcus and Schuler argue, immediate gratification should motivate GCB because all CWB is essentially criminal behavior within an organization. To clarify, the terms CWB and GCB are practically interchangeable. Whereas CWB is an umbrella term used to denote many individual behaviors (such as bullying and theft), GCB denotes counterproductive work behavior in general. For example, studying sabotage specifically would be a way of studying one type of CWB, but studying sabotage, theft, bullying, sexual harassment, withholding effort, and other forms of CWB together as a group to understand CWB in general would be a form of studying GCB. In this sense, the only difference between CWB and GCB is that GCB is a conjunct of most or all CWBs. Marcus and Schuler's results showed

that self-control was more influential than 23 other empirically supported predictors of CWB, further supporting the predictive efficacy of self-control as a predictor of deviant behaviors in general. Thus, self-control should also predict CWB because the domain of work behavior covered by GCB is homogenous with that of CWB. To summarize, self-control will inhibit CWB because of the consequences that could follow acting against the goals of an organization or its members (Marcus & Schuler, 2004).

*Self-Control and Organizational Justice*

Again, every instance of CWB is the product of both situation-based and person-based factors. Even Gottfredson and Hirschi (1990) gave credit to the situation. In theory, self-control is a strong predictor of GCB over time, but specific situations will be influenced by specific situational variables. For instance, although self-control is a good predictor of GCB, when situations of injustice are considered, the influence of self-control may not be as large because the situation may be too influential for self-control to have its typical effect on behavior. Moreover, situations of injustice may evoke certain types of CWB, depending on the source of the injustice; just as situations of ostracism or other interpersonal stressors may lead to interpersonal CWB responses such as outbursts or bullying, which could be driven more by immediate gratification than other CWBs like sabotage. To demonstrate the relative importance of the situation, Marcus and Schuler (2004) reported moderate-strength relationships between the situational triggers of payment inequity ($r$ = .18) and interactional injustice ($r$ = .21) and GCB, although these variables are less important in predicting GCB when the influence of self-control ($r$ = -.63) is accounted for (see also Pratt & Cullen, 2000). In sum, self-control is a strong predictor of GCB and the efficacy of other predictors will appear larger when specific situations

and types of CWB are of interest. Hence, perceptions of organizational justice should have a stronger influence on CWB in unjust circumstances.

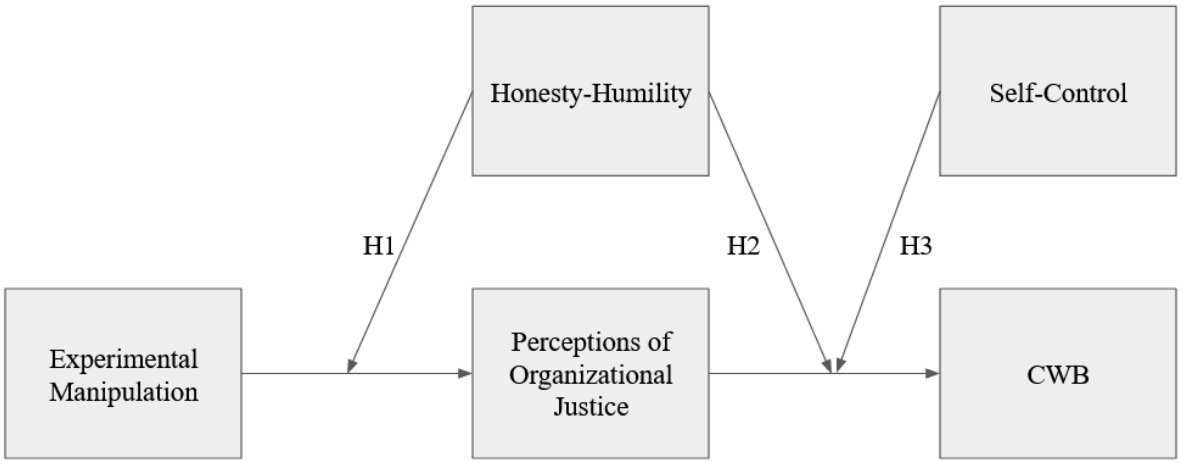
In instances of injustice, self-control should affect one's response to the injustice. Hence, just like honesty-humility, the effects from self-control and organizational justice should not be independent. Specifically, one's level of self-control should suppress their urge to behave counterproductively that is triggered by injustice by encouraging them to consider the short-term and long-term consequences of their actions. Consistent with this theory, Marcus and Schuler (2004) used moderated regression analyses to show that situational triggers (such as injustice) have the strongest effect on GCB when self-control is low, implying an interaction between the person-based and situation-based influences. Although Marcus and Schuler (2004) did not report the regression weight of the exact justice X self-control interactions, they reported that the average of five situational triggers' interactions with self-control reached a moderate-sized effect ($f^2 = .063$). Thus, self-control should suppress the urge to act counterproductively in response to organizational injustice. See hypothesis 3.

> H3: Self-control will moderate the relationship between organizational justice and CWB, such that participants who score low on self-control will show a more positive relationship between organizational injustice and CWB, compared to those participants who score low on self-control.

Although Marcus and Schuler's use of a field sample and a correlational design led to great insights, their study cannot rule out many alternative explanations. Although it is hard to conceive of a way that the justice in one's organization would affect their level of self-control directly, it is possible that organizational injustice effects people's perceptions of their own self-control by effecting their CWB. It is also possible in a correlational field-study that CWB was

affecting levels of organizational justice, which could skew the relative importance of self-control. At any rate, a major weakness of the inferences made about self-control so far in the literature is that they are based on correlational research designs. Hence, an experimental design that can control for alternative explanations can add significant credibility to self-control theory.

*Figure 4: Suppressors of CWB Response to Organizational Justice (Full Model)*




**Exploratory Analyses**

Ashton and Lee did not publish their paper on honesty-humility until 2005, and Pletzer et al. and Lee et al. did not publish their meta-analyses connecting honesty-humility to CWB until 2019, so there was no way for Marcus and Schuler (2004) to know about honesty-humility. Interestingly, however, honesty-humility and self-control are related to CWB because they both suppress the urge to act counterproductively. Comparisons of their respective influences on CWB implies that honesty-humility could have an effect size similar to self-control, and because these constructs are distinct, honesty-humility could show meaningful incremental validity over self-control in predicting CWB. To this point, honesty-humility should be a more general predictor of CWB than even self-control, because of its profound psychometric properties as a

part of the HEXACO model of personality. Therefore, the theory that self-control is an omni-powerful predictor that makes all other predictors practically redundant (Gottfredson & Hirschi, 1990; Marcus & Schuler, 2004) must be put to the test because another strong predictor of self-control has arisen. Hence, as an exploratory analysis, I will test the incremental validity of honesty-humility above self-control in predicting CWB.

Every individual should possess some level of honesty-humility and some level of self-control. In the context of CWB, both of these traits serve the same function of suppressing the urge to act. Thus, it likely the case that those who are both low in honesty-humility and low in self-control will act in more counterproductive ways than those who are high in both traits. More interestingly, it is also possible that those who are low in one but high in the other might not act counterproductively at all, because one suppressor could be enough to quiet the CWB; or, being high in both of these traits could have a synergistic effect on CWB. Hence, as an exploratory analysis, I will test for an interactive effect between honesty-humility and self-control on CWB. The following research questions are proposed:

*Research Question 1*: Honesty-humility will explain unique variance in CWB after controlling for self-control in the hierarchical regression.

*Research Question 2*: The interaction term between honesty-humility and self-control will explain unique variance in CWB after honesty-humility and self-control have both been entered into the hierarchical regression.

**Control Measures**

There are many personality traits that could confound or suppress the observed moderating effect(s) of honesty-humility and self-control. First, the influence of variables found to moderate the organizational justice – CWB relationship must be considered. Colquitt et al.

(2006) found that trust propensity and risk aversion interact with interactional and procedural justice perceptions and explain more variance in CWB than the Big Five, equity sensitivity, and sensitivity to befallen justice. Scott and Colquitt (2007) tested a similar model and found that exchange ideology also moderates the effect that organizational justice has on CWB, more so than equity sensitivity and the Big Five. I did not find any evidence that these findings have been replicated. Nonetheless, the findings of these two studies suggest that the moderating influence of trust propensity, risk aversion, and exchange ideology must all be considered as control variables.

Risk aversion describes one's predisposition to respond to dangerous situations with anxiety and withdrawal (e.g., Colquitt, et al., 2006). The moderating effect of risk aversion must be controlled for because practically all CWBs involve risk and harm to others, which could confound the effect(s) of self-control and honesty-humility, respectively. Trust propensity is a personality variable that describes one's general ability to be trusting (e.g., Mayer et al, 1995; Colquitt et al., 2006). Those who score low on trust propensity may appear selfish by virtue of being distrustful, so trust propensity could confound part of the influence of honesty-humility. It is also conceivable that one's level of trust in a given circumstance could influence whether they chose to delay gratification. For these reasons and because of Colquitt et al.'s (2006) findings, the influence of trust propensity must also be controlled for.

According to social exchange theory, employees may reciprocate unfair treatment with a wide range of behaviors, many of which could count as CWB. Moreover, people vary on how they respond to instances of injustice, and this may be explained by how individuals adhere to the norm of reciprocity, as well as other individual difference variables. Exchange ideology (Eisenberger et al., 1986) is an individual difference variable that describes how one adheres to

the norm of reciprocity and reciprocates in social exchanges. High scorers on exchange ideology are "glued" to fair responses, such as matching unfair treatment with CWB because they see a fair exchange as ideal; whereas low scorers may not reciprocate as predictably or reciprocate at all. Exchange ideology could confound honesty-humility because it pertains to one's attentiveness to the social exchange and propensity to be fair. Exchange ideology will be used in place of equity sensitivity, sensitivity to befallen justice, or other thematically similar individual difference variables that all aim to measure one's propensity to reciprocate fairly because it appears to outperform those traits in the domain of organizational justice and CWB (Colquitt et al., 2006; Scott & Colquitt, 2007). Thus, exchange ideology must also be added to the list of control variables.

Some of the Big Five personality traits can be used to predict CWB and they could confound the effect(s) of honesty-humility and self-control. Pletzer et al. (2019) found in their meta-analysis Big Five agreeableness, conscientiousness, and neuroticism to all be related to CWB, even though the effect of honesty-humility showed significant incremental validity over these predictors. Although conscientiousness and agreeableness are the best Big Five based predictors of CWB (DeShong et al. 2014), the influence of neuroticism must not be ignored, especially to the extent that it interacts with agreeableness to influence CWB (Skarlicki et al., 1999). Conscientiousness may at times confound the effect(s) of honesty-humility and self-control on CWB under circumstances where these pro- or anti-social behaviors have consequences. Low agreeableness may often look like low honesty-humility because they both share the theme of going against the desires of others, in a way that could lead to CWB. Neuroticism could increase one's reactivity to fair or unfair treatment and therefore influence

one’s impulse control or motivation to act in a fair way. In sum, agreeableness, conscientiousness, and neuroticism x agreeableness must be added as controls as well.

## Method

### Participants

Participants ($N$ = 728) will be recruited to complete this online Human Intelligence Task using Amazon's Mechanical Turk (MTurk). The exact participant count is based on the smallest moderator effects adding R^2 = .03 to their respective regression models, and accounts for 30% attrition from data quality checks. Following the suggestions of Aguinis et al. (2020) & Walter et al. (2019), only participants who have a 95% Human Intelligence Task approval rate, are U.S. citizens, are at least 18 years old, and have English as their primary language will be eligible to participate.

Several additional precautions will be taken to ensure data quality. At the beginning of the study, participants will be instructed to self-report their demographic information, and this will be compared to the inclusion criteria to ensure that only qualified participants are able to participate in this study. This first page of the survey will also have a CAPTCHA to disqualify any "bots" from participating. There will also be a simple item at the end of the survey, asking participants to report what number they use in the United States to contact emergency services. This item is also designed to disqualify any "bots" from participating and has been successful in other studies (Michel et al., 2021; Yarrish et al., 2019). Additionally, there will be four attention checks (i.e., infrequency items) placed throughout the survey (e.g., Huang et al., 2015; Meade & Craig, 2012). These items are designed to detect and exclude any participants who respond carelessly, and careless responding will be defined as failing three or more attention checks. This conservative threshold was chosen because there is a lack of consensus about the use of cutoff scores to detect careless responding (e.g., Curran & Hauser, 2019; Kim et al., 2018).

Two more precautions will be used to ensure that the experimental manipulation produces quality data. Qualtrics will also record the amount of time that participants take to complete the experimental task, and outliers (temporarily defined as [$z$] = 2.5) will be excluded from the analyses. Participants will also be asked to indicate whether they are familiar with the experimental task (see the measures section). This will be asked at the end of the study, with the manipulation checks, so that the participants are not biased.

The Human Intelligence Task posted on the MTurk describes the screening procedures, requirements, and pay for participants. Based on pilot data, participants will be paid $2.50 for completing the Human Intelligence Task; including those who are excluded from the analysis but chose to participate. This rate is the equivalent of $7.50 an hour, for twenty minutes of study participation.

**Design**

Participants will be randomly assigned to either the injustice (experimental) or justice (control) condition, making this study a two-condition between-subject experiment. Participants in the experimental condition will be treated with low distributive and low interactional justice and participants in the control condition will be treated fairly (see below).

**Procedure**

This study will use a cover story to maximize the realism of the manipulation and the validity of responses. The Human Intelligence Task posting will be titled “Psychology: Online Gaming Survey” and lays the foundation of the cover story. The Human Intelligence Task description will inform participants that the researchers are managing the development of an online video game and that accurate reports of personality were needed to examine the efficacy of the software, hence the long list of screening procedures. The Human Intelligence Task

description will also inform participants that part of their responsibility will be to determine if the other participants (confederates) are participating properly, and if they are deserving of bonus pay. On the same point, the Human Intelligence Task description will inform participants that their own performance on the task will affect how well they are rated by other participants and would in-turn affect if they themselves receive bonus pay from the researchers. Hence, participants will also be told that the pay for the Human Intelligence Task is $2.50, with the possibility of up to a $1.00 bonus. This is crucial for the realism of the dependent variable, retaliation in the form of withholding bonuses for participants.

When participants enter the survey from the link in the Human Intelligence Task, they will first be asked to consent to participate and then be shown the various data quality checks discussed earlier. Failure at either of these steps will kick the participant out of the study without pay. Following this, participants will be given a self-report personality survey. This survey is made of measures of self-control, honesty-humility, agreeableness, conscientiousness, neuroticism, exchange ideology, trust propensity, and risk aversion (for detailed descriptions of these measures, see the Measures below).

Once participants complete that survey, they will be told that they are about to enter the game and are being paired with other participants. Then they will be told that other participants were loading into the game while presented with a brief loading screen. Then, the *Cyberball* (Williams et al., 2000) program will load and participants will be placed into either the experimental or control condition. Cyberball is an online task where participants play a game of catch with computerized confederates. Fair treatment is manipulated by pre-programmed behaviors by the computerized confederates. Cyberball was chosen for this study foremost because it should manipulate perceptions of fairness. Moreover, Cyberball can be completed

virtually and is compatible with Qualtrics (for a summary on the validity of Cyberball, see Williams et al., 2000 or the meta-analysis by Hartgerink et al., 2015).

When the participants first enter Cyberball, they will be shown the controls for the game briefly before being shown a screen similar to figure 5 (I will have actual screenshots once I construct the survey). The controls for Cyberball are simply two buttons, which are used to throw the ball to the confederate on the left or the confederate on the right, when the participant has the ball. When the confederates have the ball, the participant can only sit and watch to see who gets the ball thrown to them next. To increase realism, the avatars for the participant and the two confederates were named User 114, User 115, and User 116, respectively (the names will appear just above the avatar).

*Figure 5: Cyberball from the Perspective of the Participant*

Again, the participants will be randomly placed in one of two games of Cyberball, which reflect the high and low justice conditions. Cyberball's effect is most proximal to distributive justice because it is literally manipulates the quantity of balls tossed to the participant, but because the main effect of Cyberball (felt ostracism) correlates highly with interpersonal justice (Ferris et al., 2008), and because Cyberball uses confederates as the source of the unfair treatment, interpersonal justice will also likely be affected; as well as overall justice. Moreover, distributive justice will be manipulated by the number of tosses that the participant receives, or is

"distributed", in other words. Overall justice will therefore be manipulated both as a result of the effects on distributive and interactional justice (Ambrose & Schminke, 2009), but also because the unwarranted exclusion that the participants receive in the experimental condition should be perceived as generally unfair treatment. Consistent with Williams et al. (2000), the confederates in the control condition will be programmed to distribute the ball to the participants 67% of the tosses, which is actually over-involvement. In the injustice condition, the confederates will be programmed to distribute the ball to the participants 15% of the tosses. This exact percentage was chosen because it should be more unfair than "partial ostracism" (20%) but not as severe or unrealistic as complete ostracism (0%; Williams et al., 2000).

The Cyberball task will end after 35 total tosses. Therefore, the duration of Cyberball in this study will be slightly longer than the average Cyberball study, which should make it more immersive (Hartgerink et al., 2015). When Cyberball ends, participants will return to the Qualtrics questionnaire and be asked to complete a brief survey about their experience. This survey will ask them to rate how fairly they were treated, how ostracized they felt, and give participants the opportunity to retaliate against the confederates. On the next page, participants will be asked basic manipulation check questions and if they had played Cyberball before. Then participants will be informed that the study has ended, and they will be debriefed. See Table 1.

*Table 1: Survey Flow*

| Initial Survey | Cyberball Task | Post Manipulation Survey |
|---|---|---|
| • Demographic information<br>• CAPTCHA<br>• Data quality checks<br>• Honesty-Humility<br>• Self-Control<br>• Trust Propensity<br>• Risk Aversion<br>• Exchange Ideology<br>• Neuroticism<br>• Agreeableness<br>• Conscientiousness | (fair/ unfair) | • Overall justice<br>• Distributive & procedural justice<br>• Retaliation<br>• Data quality checks<br>• Felt ostracism<br>• Number of throws<br>• Intent to retaliate<br>• Agree with fairness statement |

**Measures**

*Personality Variables: HEXACO, Self-Control, Trust Propensity, Risk Aversion, & Exchange Ideology*

I will use items from the HEXACO-60 scale to measure honesty-humility, emotionality, agreeableness, and conscientiousness because of its superiority to the Big Five (e.g., Ashton & Lee 2009; Lee & Ashton, 2005, 2014). Accordingly, ten items will be used to measure each construct and response options will be a five-item graphic rating scale with anchors (1 = *strongly disagree;* 2 = *disagree*; 3 = *neutral*; 4 = *agree*; 5 = *strongly agree*) for each respective response item. A sample item for honesty-humility (*alpha* = .74) is "I think that I am entitled to more respect than the average person is" (R). A sample item for emotionality ($\alpha$ = .73) is "I sometimes can't help worrying about little things." A sample item for agreeableness ($\alpha$ = .75) is "I rarely hold a grudge, even against people who have badly wronged me." A sample item for conscientiousness ($\alpha$ = .76) is "I plan ahead and organize things, to avoid scrambling at the last minute." After the appropriate items are reverse-coded, scores for each construct will be calculated by averaging scores on the individual items. Higher average scores represent being higher on the trait, and lower averaged scores reflect being lower on the trait.

Consistent with Colquitt et al. (2006), trust propensity will be measured using items from the International Personality Item Pool (Goldberg et al., 2006; $\alpha$ = .81; Scott & Colquitt, 2006). Thus, five items will be used to measure trust propensity and participants were presented with a five-item graphic rating scale with anchors (1 = *strongly disagree*; 2 = *disagree*; 3 = *neutral*; 4 = *agree*; 5 = *strongly agree*) for each respective response item. A sample item is "I trust others." The scores on the individual items will be averaged and higher averages reflect being higher on that trait and lower averages reflect being lower on that trait.

Consistent with Colquitt et al. (2006) I will measure risk aversion using items from the International Personality Item Pool (Goldberg et al., 2006; $\alpha$ = .82; Scott & Colquitt, 2007). I thus will use ten items to measure risk aversion and participants will respond on a five-item graphic rating scale with anchors (1 = *strongly disagree*; 2 = *disagree*; 3 = *neutral*; 4 = *agree*; 5 = *strongly agree*) for each respective response item. A sample item is "I would never make a high risk investment." The scores on the individual items will be averaged and higher averages reflect being higher on that trait and lower averages reflect being lower on that trait.

Consistent with Scott and Colquitt (2007), exchange ideology will be measured using the Reciprocation Ideology scale developed by Eisenberger et al. (1986; $\alpha$ = .80). Thus, I will use five items to measure exchange ideology and participants will respond on a five-item graphic rating scale with anchors (1 = *strongly disagree*; 2 = *disagree*; 3 = *neutral*; 4 = *agree*; 5 = *strongly agree*) for each respective response item. A sample item is "an employee who is treated badly by the organization should lower his or her work effort.." The scores on the individual items will be averaged and higher averages reflect being higher on that trait and lower averages reflect being lower on that trait.

I will measure self-control using items from the International Personality Item Pool ($\alpha$ = .75; Goldberg et al., 2006). I thus will use twelve items to measure self-control and participants will respond on a five-item graphic rating scale with anchors (1 = *strongly disagree*; 2 = *disagree*; 3 = *neutral*; 4 = *agree*; 5 = *strongly agree*) for each respective response item. A sample item is "[I] can control my emotions." The scores on the individual items will be averaged and higher averages reflect being higher on that trait and lower averages reflect being lower on that trait.

*Moderated Mediator: Organizational Justice*

This data collection will only be measuring distributive, interactional, and overall justice. Procedural justice is not being measured because it is not easily manipulated in an immersive online task like Cyberball, and such a task is needed to collect data virtually. Similar to Scott and Colquitt (2007), Colquitt et al. (2006), and many other studies, the measures for organizational justice in this study consist of both ad hoc items and items taken from other scales that have been adapted to fit the context of this study (e.g., Ambrose & Schminke, 2009; Colquitt, 2001; Roch & Shanock, 2006). Distributive justice will be measured using five items and a sample item is "Was the number of tosses you received close to the number of tosses you threw?" Interactional justice will be measured using five items and a sample item is "Did the other players prevent you from playing with them?" Overall justice will be measured using three items and a sample item is "Overall, were you treated fairly during this game of catch?" Participants will self-report their responses on a five-point graphic rating scale with the anchors 1 = *strongly disagree*; 2 = *disagree*; 3 = *neutral*; 4 = *agree*; 5 = *strongly agree*. For information on how the validity of these scales will be assessed, see the manipulation checks section. See Table 2 at the end of this

section for a complete list of the justice items and their respective comparable items from other scales.

*Dependent Variable: Retaliation*

When the Cyberball task ends, participants will be asked to review the performance of the other players and they will be reminded that the other players will be rating them as well. After responding to the organizational justice items, participants will be asked to indicate how much bonus pay they think the researchers should give to the confederates. Response options will be on a graphic rating scale and range from $0.00 to $1.00 in increments of $0.10. Thus, retaliation is defined as the degree to which participants withhold bonus pay from the confederates and participants will be given the opportunity to reciprocate any fair/unfair treatment they may have received from the confederates. Hence, retaliation will be scored negatively with the amount of bonus pay, such that $0.00 would count as high retaliation and $1.00 would count as low retaliation.

Other studies have used similar proxies to measure retaliation (e.g., Christian et al., 2012, Jones & Skarlicki, 2005, Long & Christian, 2015). Shaw et al. (2003) defined retaliation as a response to perceived injustice (see also Jones & Skarlicki, 2005), Skarlicki et al. (1998) used the term retributive justice to refer to this sort of motivated behavior, and Spector et al. (2006) referred to CWB-I as retaliation directed at individuals. This proxy for retaliation is also consistent with the agent system model of justice, which proposes that agents will target the source of the perceived source of (in)justice when retaliating (Bies & Moag, 1986). In any case, the retaliation in this study should be intentional and and intended to harm the other player(s), so it can therefore fit the definition of CWB (Robinson & Bennett, 1995).

In sum, the measure of retaliatory performance evaluation as a proxy for CWB is consistent with previous findings in the CWB literature, even though operationalizing it as withholding payment via performance evaluation is unique to this study. Long and Christian (2015) used a very similar form of retaliatory performance evaluation with hypothetical real-world consequences in their laboratory experiment. In their study, participants rated the performance of the confederate supervisor (the source of (in)justice, depending on if the participant was in the fair or unfair condition) after being told that their performance evaluations could affect that person's promotion in the real world. Long and Christian validated this retaliatory behavior by showing that it correlated in the right directions with their other CWB measure and their organizational (in)justice manipulation, and by showing that it correlated well with Jones and Skarlicki's (2005) measure of intent to retaliate. Thus, similar proxies for retaliation have been used in published research and the use of this proxy for CWB is consistent with the literature.

*Manipulation Checks*

Historically, Cyberball has been used to manipulate felt ostracism (*Cohen's d* > 1.3, Hartgerink et al., 2015). Hence, felt ostracism will be measured to ensure that the manipulation has its' intended effect. To measure ostracism, the two-item Felt Ostracism Postexperimental Questionnaire ($\alpha = .95$) will be used (Williams, Cheung, & Choi, 2000). This simple questionnaire was chosen because of its prevalence in Cyberball research. A sample item is "To what extent did you feel that you were being ignored or excluded by the other participants?" Whereas the original authors will use a nine-point graphic rating scale, I will use a five-point graphic rating scale with anchors of 1 = *to a small extent* and 5 = *to a large extent*. Scores on the two items will be averaged and a larger average score reflects felt ostracism and lower average

scores reflect less felt ostracism. In general, the use of five-point rating scales is superior to seven or nine-point scales (e.g., Lissitz & Green, 1975).

Moreover, the original authors of Cyberball validated their participants' experience of ostracism in part by asking them to estimate the percentage of tosses they were thrown during the game (Williams et al., 2000). The authors found that participants are generally good judges of the percentage of tosses they were distributed, and that this estimation had a linear relationship with felt ostracism. Participants who perceived that they were seldom given the ball during this game of catch should also experience feelings of injustice. Hence, I will also use this measure as a manipulation check to ensure that participants are immersed in the game of Cyberball. Also, I will ask participants to report whether or not they were familiar with Cyberball. This will be asked at the end of the study so that participants are not biased by this question, and participants who say yes to this item will be excluded from the analysis.

To assess the validity of the retaliation behavior, participants will respond to a version of Jones and Skarlicki's (2005) measure of intent to retaliate that is modified to fit the context of the current study. Like Jones and Skarlicki's original measure, intention to retaliate will be measured using four items. A sample item is "I would complain about my treatment." Unlike Jones and Skarlicki, who used a seven-point graphic rating scale, participants in my study will respond on a five-point graphic rating scale with anchors 1 = *strongly disagree*; 2 = *disagree*; 3 = neutral; 4 = *agree*; 5 = *strongly agree* for each respective response item. In general, the use of five-point rating scales is superior to seven or nine-point scales (e.g., Lissitz & Green 1975). Previous uses of this scale have demonstrated acceptable levels of reliability ($\alpha$ = .87, Jones & Skarlicki, 2005; $\alpha$ = .85, Long & Christian, 2015).

To ensure that the justice manipulation is effective, participants will also be asked to respond to two items designed to measure their explicit perceptions of fairness. First, participants will respond to the item "I was treated fairly during this game" with the response options 1 = *strongly disagree*; 2 = *disagree*; 3 = *neutral*; 4 = *agree*; 5 = *strongly agree*. Second, participants will answer the question "how fairly were you treated during this game of catch?" with response options 1 = *very unfair*; 2 = *unfair*; 3 = *neutral*; 4 = *fair*; 5 = *very fair*. Scores on these scales should correlate with each dimension of organizational justice as well as the respective treatment condition.

As another criterion to assess the validity of the measures of organizational justice, participants will also respond to Kunin's (1955) Faces Scale. This scale is designed to assess participants' projective attitudes towards an organization or policy, and I will use it to assess participants' projective attitudes towards the confederates. This is a single-item measure that uses smiley faces as response options instead of other orthodox likert-type anchors. Although it is hard to say what exactly is being measured on the 😊 ☹ continuum, organizational justice does correlate with such constructs as employee well-being, felt ostracism, and job satisfaction (e.g., Cohen-Charash & Spector, 2001; Colquitt et al., 2001; Ferris et al., 2008), all of which reflect general affect. Moreover, several studies have demonstrated the validity of this item as a general job attitude measure, which, again, correlate well with organizational justice (e.g., Bowling & Zelanzy, 2021; Wanous, Reichers, & Hudy, 1997). For these reasons, 😊 faces should correlate with perceptions of organizational justice. Hence, 😊 faces should positively correlate with being treated fairly by the confederates and with scores on the perceptions of fairness measure, and correlations in this direction will help bolster the validity of the measures of organizational justice. See the appendix.

## Results

*Participants and Data Cleaning*

Participants ($N$ = 787) were recruited via Amazon's Mechanical Turk. Participants were only able to sign up for the study through the Mechanical Turk if they were at least 18 years old, were English speakers, U.S. residence, and had completed a minimum of 100 HITs with at least a 95% HIT approval rate (see Aguinis et al., 2020). Of the original 787 participants who were recruited, 520 participants were eliminated because they failed data quality checks (final $N$ = 267). Participants were eliminated if they failed to accurately report basic information about the study ("How many people were in your game of catch?"), if they responded illogically to more than one infrequency item (e.g., "I would be interested in pursuing a degree in parabanjology"), if they did not know the number used to contact emergency services in the United States (correct answer was "911"), or if they had reported playing Cyberball before participating in this study. For more on exclusion criteria, see the method section.

Participants had an average age of 37.9, but age varied considerably (*sd* = 11.34). Participants were also majority male (~60%). One participant indicated that they preferred not to report their gender, and one participant did not respond to that question.

*Validity and Reliability Evidence - Organizational Justice*

The measures for distributive, interactional, and overall justice were constructed for this Cyberball-specific study and modelled after other measures of organizational justice (see measures section or table 2). The three-item measure for distributive justice showed poor reliability (*cronbach's* $\alpha$ = 0.52) but correlated highly with interactional justice ($r$ = 0.66), overall justice ($r$ = 0.64), and with agreement to the statement "I was treated fairly" during

Cyberball ($r$ = 0.54). Distributive justice also correlated moderately with intent to retaliate ($r$ = -0.35) and felt ostracism ($r$ = -0.31). See table 5 for more information.

Additionally, interactional justice (*cronbach's α* = 0.82) and overall justice (*cronbach's α* = 0.87) correlated highly ($r$ = 0.83). Interactional justice correlated highly with agreement to the statement "I was treated fairly" during Cyberball ($r$ = 0.64), intent to retaliate ($r$ = -0.50), and felt ostracism ($r$ = -0.47). Overall justice correlated highly with agreement to the statement "I was treated fairly" during Cyberball ($r$ = 0.76), intent to retaliate ($r$ = -0.44), and felt ostracism ($r$ = -0.40). In sum, the psychometric properties of the scales were sufficient for them to be used to test the hypotheses. See table 5 for more information.

*Validity Evidence - Cyberball Manipulation*

To manipulate fairness, participants were randomly placed into a game of Cyberball that was programmed to either include (fairness condition) or exclude them (unfairness condition). See the method section for more on Cyberball. The experimental levels were related to distributive justice ($t(266) = 50.59$, $p < .01$, $d$ = -0.65), interactional justice ($t(265)=57.30$, $p < .01$, $d$ = -0.94), and overall justice ($t(264) = 48.15$, $p < .01$, $d$ = -0.73). Additionally, the experimental levels were related to felt ostracism ($t(265) = -162.59$, $p<.01$, $d$ = 0.81), estimates of how many throws were distributed to the participants ($t(265) = 28.968$, $p<.001$, $d$ = -0.90), and estimates of what percentage of throws were distributed to the participants ($t(265) = 19.1$, $p<.001$, $d$ = -0.51). These findings provide evidence for the construct validity of the Cyberball manipulation. See table 5 for more information.

*Validity Evidence - Retaliation*

Retaliation was operationalized as how much bonus pay was redacted from the confederates, after Cyberball. Retaliation correlated strongly with intent to retaliate ($r$=0.43

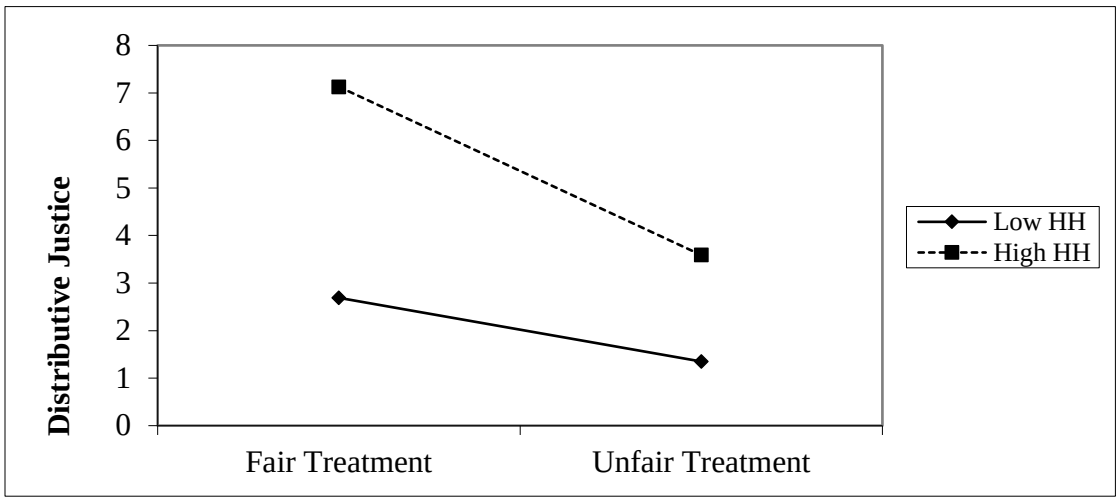
$p$<.01), and levels of retaliation were different across experimental levels ($t$(266)=26.71, $p$<.001, $d$ = .46). Moreover, retaliation correlated negatively with distributive justice ($r$ = -0.34, $p$<.01), interactional justice ($r$ = -0.46, $p$<.01), and overall justice ($r$ = -0.39, $p$<.01). These findings provide evidence of the construct validity of the proxy used for retaliation. See table 5 for more information.

*Hypothesis Testing – Hypothesis 1*

Hypothesis 1 hypothesized that honesty-humility would moderate the effect that unfair treatment would have on perceptions of fairness, such that the effects of unfair treatment on perceived unfairness would be stronger for those who are high in honesty-humility than those who are low in honesty-humility. The same pattern was hypothesized for distributive (*H1a*), interactional (*H1b*) and overall justice (*H1c*).

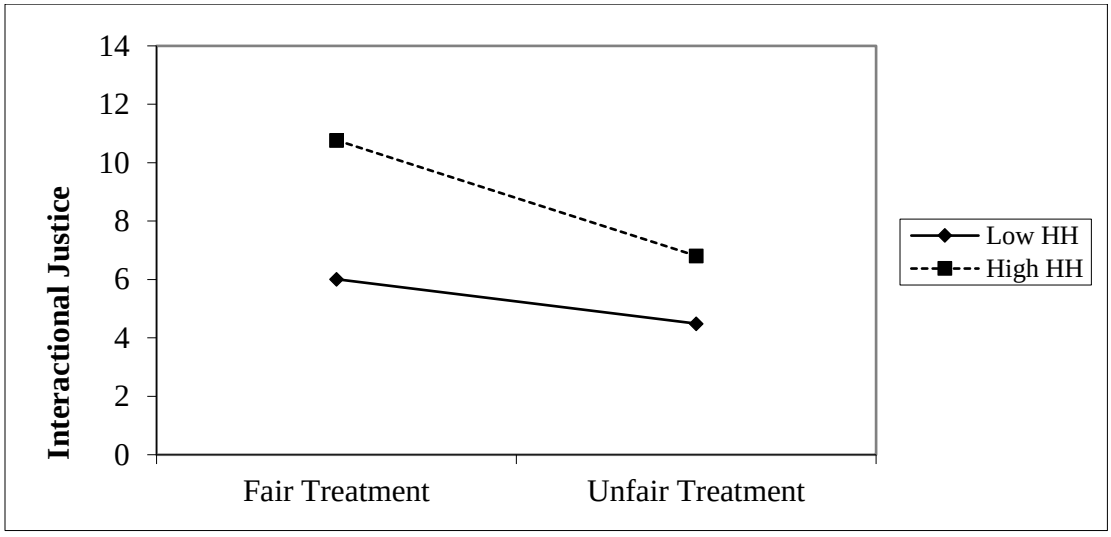
To test hypothesis *1a*, a two-step hierarchical regression was conducted with distributive justice as the dependent variable. Altruism, agreeableness, conscientiousness, the interaction between agreeableness and emotionality, trust propensity, risk propensity, the manipulation, and honesty-humility were entered as the first model. The interaction between honesty-humility and the manipulation was entered as the second model. The hierarchical regression revealed that the first model explained 25.2% of variance in distributive justice ($R^2$ = .252, $F$(11,209) = 6.976, $p$<.001), and the second model explained an additional 6.7% of variance ($R^2$ = .318, $\Delta R^2$ = .067, $F$(1,208) = 20.363, $p$<.001). These results provide support for hypothesis *1a*. See table 6 and figure 6.

*Figure 6: Cyberball x Honesty-Humility Effect on Distributive Justice Perceptions*



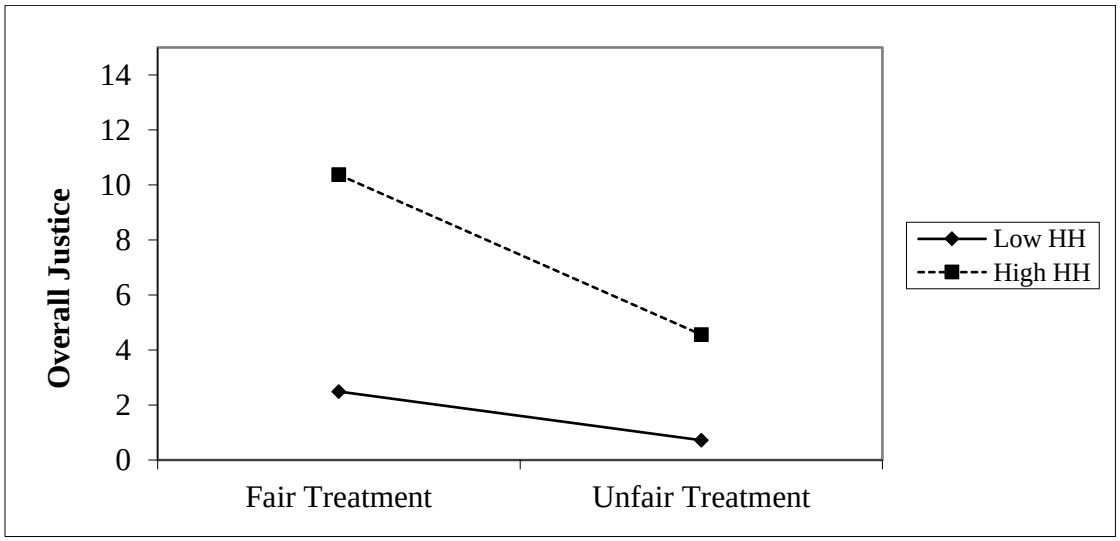

To test hypothesis *1b*, a two-step hierarchical regression was conducted with interactional justice as the dependent variable. The first model included the same control variables that were listed in step 1 for hypothesis *1a*. The interaction between honesty-humility and the manipulation was entered as the second model. The hierarchical regression revealed that the first model explained 25.5% of variance in interactional justice ($R^2$ = .255, $F$(11,209) = 7.288, $p$<.001), and the second model explained an additional 8.4% of variance ($R^2$ = .339, $\Delta R^2$ = .084, $F$(1,208) = 26.458, $p$<.001). These results provide support for hypothesis *1b*. See table 7 and figure 7.

*Figure 7: Cyberball x Honesty-Humility Effect on Interactional Justice Perceptions*



To test hypothesis *1c*, a two-step hierarchical regression was conducted with overall justice as the dependent variable. The first model included the same control variables that were listed in step 1 for hypotheses *1a* and *1b*. The interaction between honesty-humility and the manipulation was entered as the second model. The hierarchical regression revealed that the first model explained 23.2% of variance in overall justice ($R^2$ = .232, $F$(11,209) = 6.454, $p$<.001), and the second model explained an additional 8.9% of variance ($R^2$ = .321, $\Delta R^2$ = .089, $F$(1,208) = 27.320, $p$<.001). Thus, hypothesis 1 was supported for all three dimensions of organizational justice. See table 8 and figure 8.

*Figure 8: Cyberball x Honesty-Humility Effect on Overall Justice Perceptions*

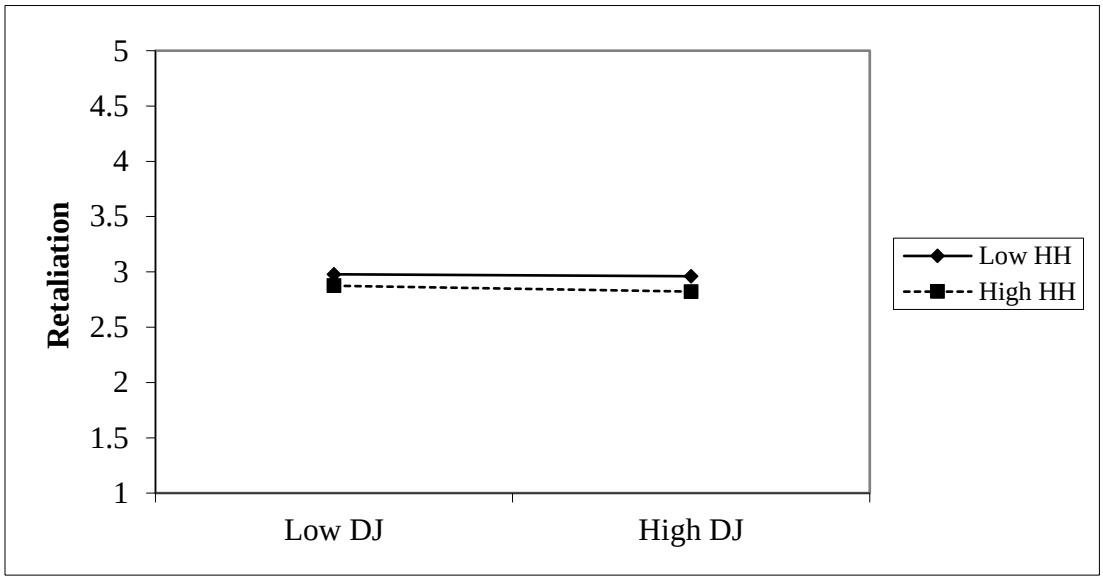



*Hypothesis Testing – Hypothesis 2*

Hypothesis 2 hypothesized that honesty-humility would moderate the effect that perceptions of fairness would have on retaliation, such that participants who score low on honesty-humility will show a more negative relationship between organizational justice and retaliation, compared to those participants who score high on honesty-humility. The same pattern was hypothesized for distributive (*H2a*), interactional (*H2b*) and overall justice (*H2c*).

To test hypothesis *2a*, a two-step hierarchical regression was conducted with retaliation as the dependent variable. Altruism, agreeableness, conscientiousness, the interaction between agreeableness and emotionality, trust propensity, risk propensity, the interaction between trust propensity and distributive justice, the interaction between risk propensity and distributive justice, distributive justice, and honesty-humility were entered as the first model. The interaction between distributive justice and honesty-humility was entered as the second model. The hierarchical regression revealed that the first model explained 16.4% of variance in retaliation ($R^2$ = .170, $F$(11,209) = 3.746, $p$<.001), but the second model did not explain a significant level of additional variance ($R^2$ = .172, $\Delta R^2$ = .008, $F$(1,208) = 2.018, $p$>.05). These results do not provide support for hypothesis *2a*. See table 9 and figure 9.

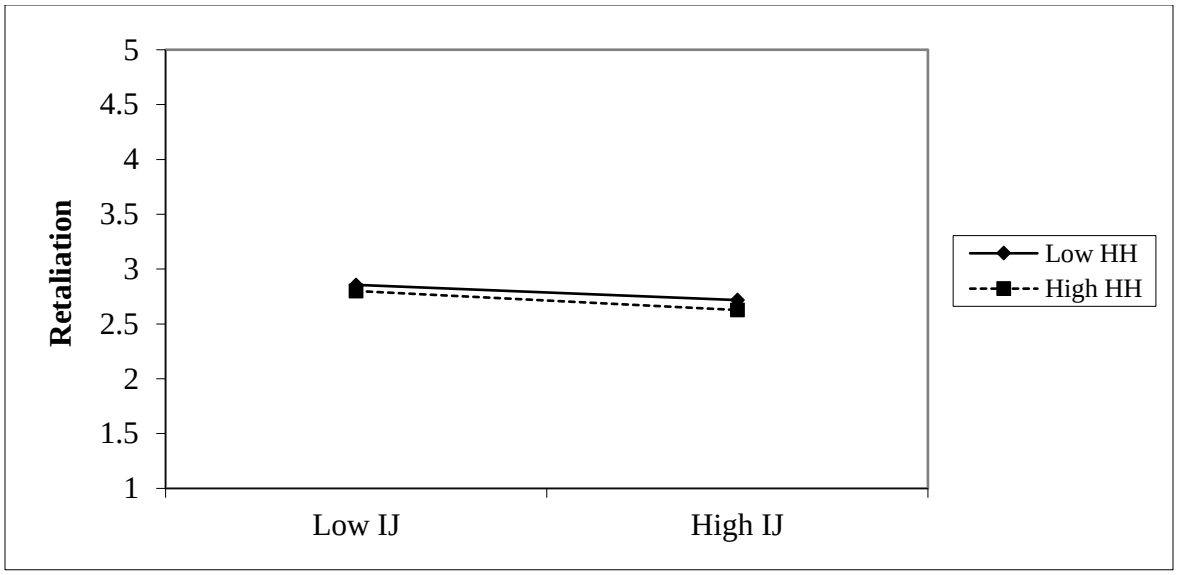
*Figure 9: Distributive Justice x Honesty-Humility Effect on Retaliation*




To test hypothesis *2b*, a two-step hierarchical regression was conducted with retaliation as the dependent variable. The first model included the same variables that were listed in step 1 for hypothesis *2a*, except distributive justice was replaced with interactional justice. The interaction between interactional justice and honesty-humility was entered as the second model.

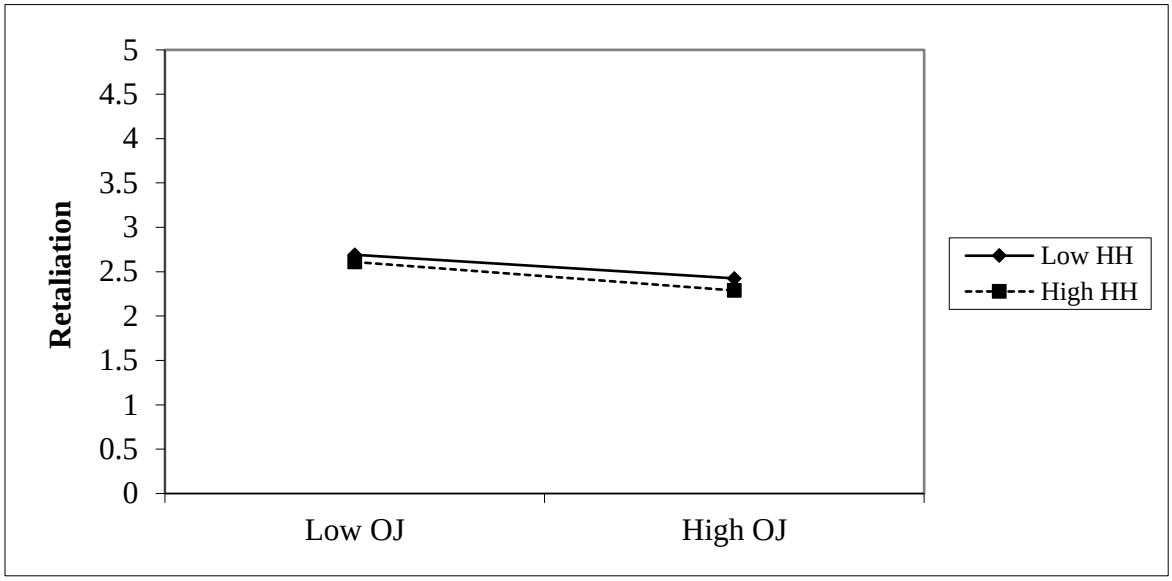
The hierarchical regression revealed that the first model explained 27.5% of variance in retaliation ($R^2$ = .275, $F$(11,209) = 2.069, $p$<.001), but the second model did not explain a detectable level of additional variance ($R^2$ = .282, $\Delta R^2$ = .007, $F$(1,208) = 2.095, $p$>.05). These results do not provide support for hypothesis *2b*. See table 10 and figure 10.

*Figure 10: Interactional Justice x Honesty-Humility Effect on Retaliation*




To test hypothesis *2c*, a two-step hierarchical regression was conducted with retaliation as the dependent variable. The first model included the same variables that were listed in step 1 for hypothesis *2a*, except distributive justice was replaced with overall justice. The interaction between overall justice and honesty-humility was entered as the second model. The hierarchical regression revealed that the first model explained 25.2% of variance in retaliation ($R^2$ = .252, $F$(11,209) = 6.480, $p$<.001), and the second model explained an additional 1.4% of variance ($R^2$ = .266, $\Delta R^2$ = .014, $F$(1,208) = 3.962, $p$<.05). These results provide support for hypothesis *2c*. In sum, hypothesis 2 received mixed support. See table 11 and figure 11.

*Figure 11: Overall Justice x Honesty-Humility Effect on Retaliation*



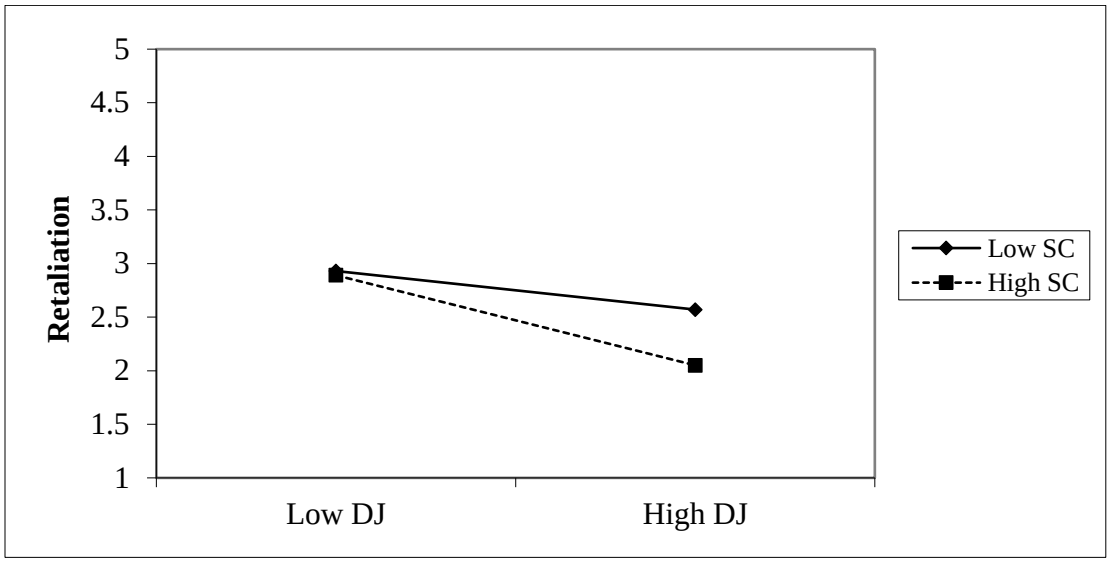

*Hypothesis Testing – Hypothesis 3*

Hypothesis 3 hypothesized that self-control would moderate the effect that perceptions of fairness would have on retaliation, such that participants who score low on self-control will show a more negative relationship between organizational justice and retaliation, compared to those participants who score high on self-control. The same pattern was hypothesized for distributive (*H3a*), interactional (*H3b*) and overall justice (*H3c*).

To test hypothesis *3a*, a two-step hierarchical regression was conducted with retaliation as the dependent variable. Altruism, agreeableness, conscientiousness, the interaction between agreeableness and emotionality, trust propensity, risk propensity, the interaction between trust propensity and distributive justice, the interaction between risk propensity and distributive justice, distributive justice, and self-control were entered as the first model. The interaction between distributive justice and self-control was entered as the second model. The hierarchical regression revealed that the first model explained 16.3% of variance in retaliation ($R^2$ = .163, $F(11,209) = 3.809$, $p<.001$), and the second model explained an additional 2.7% of variance ($R^2$

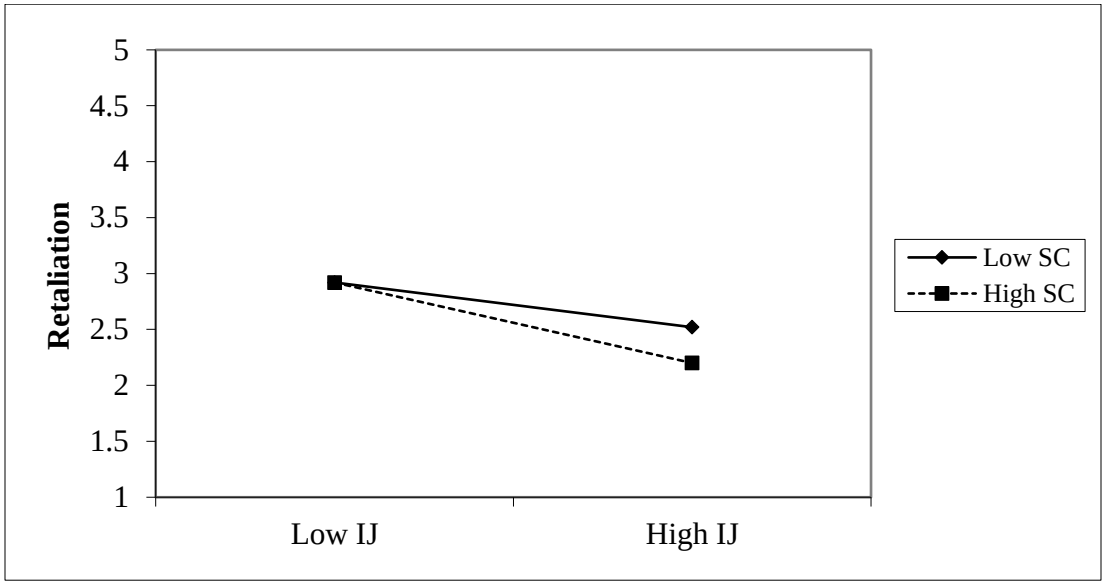
= .190, $\Delta R^2$ = .027, $F(1,208)$ =6.874, $p$<.01). Although the variance explained in the second model was statistically significant, the moderation effect did not occur in the hypothesized direction. These results do not support hypothesis *3a*. See table 12 and figure 12.

*Figure 12: Distributive Justice x Self-Control Effect on Retaliation*



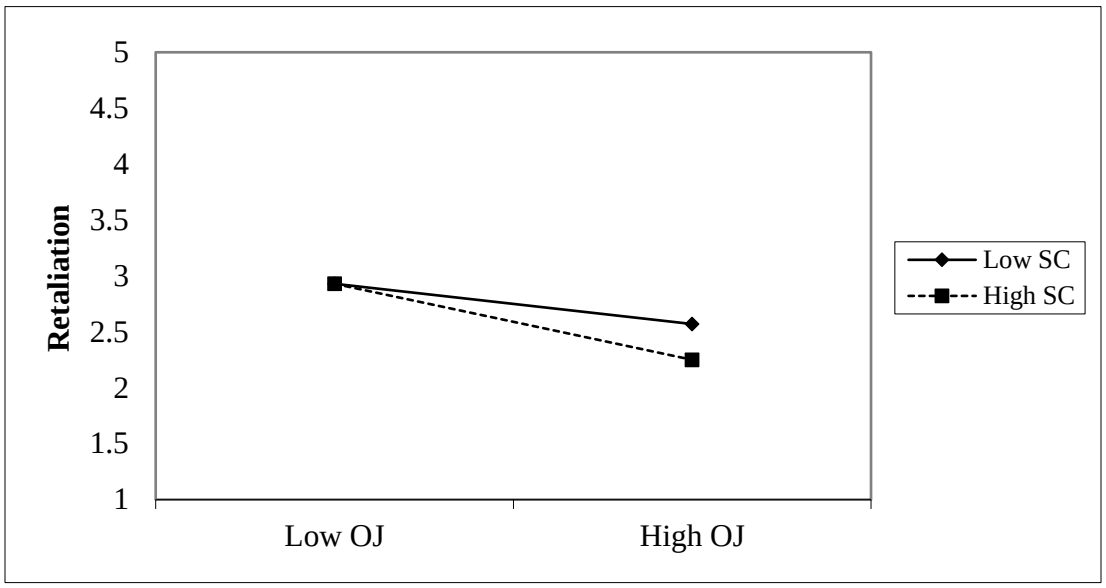

To test hypothesis *3b,* a two-step hierarchical regression was conducted with retaliation as the dependent variable The first model included the same variables that were listed in step 1 for hypothesis *3a,* except distributive justice was replaced with interactional justice. The interaction between interactional justice and self-control was entered as the second model. The hierarchical regression revealed that the first model explained 27.5% of variance in retaliation ($R^2$ = .279, $F(11,209)$ = 7.351, $p$<.001), and the second model explained an additional 1.6% of variance ($R^2$ = .292, $\Delta R^2$ = .016, $F(1,208)$ = 4.738, $p$<.05). Although the variance explained in the second model was statistically significant, the moderation effect did not occur in the hypothesized direction. These results do not support hypothesis *3b.* See table 13 and figure 13.

*Figure 13: Interactional Justice x Self-Control Effect on Retaliation*




To test hypothesis *3c*, a two-step hierarchical regression was conducted with retaliation as the dependent variable. The first model included the same variables that were listed in step 1 for hypothesis *3a*, except distributive justice was replaced with overall justice. The interaction between overall justice and self-control was entered as the second model. The hierarchical regression revealed that the first model explained 25.1% of variance in retaliation ($R^2$ = .251, $F(11,209) = 6.472$, $p<.001$), and the second model explained an additional 1.7% of variance ($R^2$ = .267, $\Delta R^2$ = .017, $F(1,208) = 4.724$, $p<.05$). Although the variance explained in the second model was statistically significant, the moderation effect did not occur in the hypothesized direction. These results do not support hypothesis *3a*. In sum, hypothesis 3 was not supported. See table 14 and figure 7 and figure 14.

*Figure 14: Overall Justice x Self-Control Effect on Retaliation*




*Hypothesis Testing – Research Questions 1 & 2*

Research question 1 hypothesized that honesty-humility would explain unique variance in retaliation beyond that explained by self-control. Research question 2 hypothesized that the interaction between honesty-humility and self-control would explain unique variance in retaliation beyond that explained by the two variables alone. To test these research questions, a six-step hierarchical regression was conducted with retaliation as the dependent variable. Age and gender were entered on the first step did not explain a significant amount of variance in retaliation ($R^2$ = .003, $F$(2,251) = 0.515, $p$>.05). The Cyberball manipulation was added to the model on the second step. The second step explained 6.5% more variance in retaliation ($R^2$ = .068, $\Delta R^2$ = .065, $F$(1,250) = 21.086, $p$<.001). Distributive, interactional, and overall justice were added to the model on the third step. The third step explained an additional 16.3% of variance in retaliation ($R^2$ = .231, $\Delta R^2$ = .163, $F$(3,247) = 17.540, $p$<.001). Self-control was added to the model on the fourth step. The fourth step did not explain a significant amount of variance in retaliation ($R^2$ = .231, $\Delta R^2$ = .000, $F$(1,246) = 0.100, $p$>.05). Honesty-humility was added to the

model on the fifth step. The fifth step explained an additional 1.4% in retaliation ($R^2$ = .245, $\Delta R^2$ = .014, $F(1,245) = 4.370$, $p<.05$). The sixth step added the interaction between honesty-humility and self-control and did not explain a significant amount of unique variance in retaliation ($R^2$ = .246, $\Delta R^2$ = .001, $F(1,244) = 0.298$, $p>.05$).

## Discussion

I sought for this thesis to complete three things. First, I sought to test the possibility that honesty-humility influences organizational justice. The results of my study support this hypothesis. More specifically, the idea that those who are lower in honesty-humility are not as concerned with fair exchange as those who are high in honesty-humility was supported. Second, I sought to test the possibility that one's levels of honesty-humility and self-control would affect their retaliatory response to organizational justice. I theorized that both of these traits would act as suppressors to the urge to retaliate in a deviant manner; however, neither honesty-humility nor self-control moderated the effects of organizational justice on retaliation, in the hypothesized direction. Additionally, I sought to address the lack of knowledge regarding personality effects on organizational justice. The results of my study strictly support the notion that honesty-humility affects organizational justice, and the idea that honesty-humility and self-control affect one's response to organizational justice was not supported. In sum, my thesis supports the idea that high honesty-humility leads to higher reactivity to (in)justice in terms of organizational justice, but neither honesty-humility nor self-control were found to suppress one's retaliatory response to unfair treatment.

Honesty-humility had a moderate effect on fairness perceptions but did not appear to influence how people respond to those fairness perceptions. On the surface, this seems to imply that honesty-humility is closely related to perceptions of a fair social exchange, but not to the behavior that is manifested in a fair social exchange. I believe that is not the case. The trends associated with hypothesis 1 support the idea that people high in honesty-humility are attentive and reactive to fairness, whereas people low in honesty-humility are more indifferent to their treatment. Because they care about fairness and the rights of others, those who score high on

honesty-humility may actually experience a dilemma when considering how to respond to unfair treatment. On one hand, retaliation can be seen as a pro-social way to "even the score" in a fair social exchange; on the other hand, retaliation is harmful and therefore can be perceived as anti-social; and it is unclear which of these options someone high in honesty-humility would prefer. If this is true, hypothesis 2 failed not because honesty-humility does not affect retaliation to injustice, but because people low in honesty-humility are more indifferent to injustice, and people high in honesty-humility don't know how to react to it. This sort of ambiguity was certainly amplified by how I constructed the measure for retaliation in this study. Additionally, it is possible that organizational justice mediates the relationship between honesty-humility and retaliation; but such an effect was not formally hypothesized.

Self-control did not moderate the effect of injustice on retaliation, in the direction that I originally hypothesized. Nonetheless the results are interesting. I hypothesized that participants' perceptions of injustice would provoke a retaliatory response directed at the confederates, and that this retaliatory response would be suppressed by high levels of self-control. However, when the participants perceived injustice, self-control had practically no impact on their retaliatory response. Interestingly, when participants perceived high levels of justice, self-control appeared to meaningfully impact retaliation. That is, self-control was only influential on retaliation when there was no perceived unfair treatment to retaliate against, only perceived fair treatment. Thus, my results imply that self-control suppresses retaliation only when retaliation is an inappropriate response. This was not originally hypothesized. Following this line of reasoning, the results also imply that retaliating to unfair treatment is not as gratifying as retaliating to fair treatment; perhaps because the latter is more deviant.

*Regarding Cyberball and the Measurement of Fairness and Retaliation*

To my knowledge, this study was the first of its kind to use Cyberball as a fairness manipulation. The results of this study show that Cyberball can be used to manipulate fairness. Not only did each experimental level produce different levels of perceptions of fairness, but the experimental levels also correlated with a network of other manipulation checks, such as measures of felt ostracism and players' estimates of their degree of involvement. Because no other researchers before me had used Cyberball to manipulate fairness, I also had to develop novel measures of "organizational justice" that could fit the context of Cyberball. The measures of distributive, interactional, and overall justice that I created all performed well in terms of validity, and acceptably in terms of reliability. The measure of distributive justice appeared unreliable most likely because it only used three items, so small variability could have a proportionally big effect on the rest of the scale. These advancements are themselves useful for psychology.

My proxy for retaliation is also novel, although other studies have used similar proxies (e.g., Christian et al., 2012, Jones & Skarlicki, 2005, Long & Christian, 2015). Retaliation correlated modestly with the experimental levels, perceptions of fairness, intent to retaliate, and other measures used in this study. However, with hindsight there were many problems with this proxy. As I discussed earlier, the pro-social and anti-social response options were not made clear enough. Similarly, it is not at all risky to anonymously take pay away from other anonymous players; it is not necessarily self-interesting either. Allowing the participants to keep the money that they redacted from the other participants would have prevented these problems because it would have made retaliation explicitly selfish. In sum, all components of my experimental design can be improved upon in future data collections, particularly the measurement of CWB.

I can fathom many other proxies being used to measure deviant or CWB in an online Cyberball study. For instance, asking participants to write reviews about the other players could serve as a proxy for incivility, interpersonal conflict, or even dissatisfaction with the social exchange (e.g., Francis, Holmvall, & O'Brien, 2015; Holmvall & Bobocel, 2008). In a future data collection, one could also give participants the opportunity to withdrawal from doing more work, or to steal from the researchers (Scott & Colquitt, 2007). Future researchers could also change the source of the injustice to research assistants, real people, an organization, or some other target. This would have to be rooted in the cover story or context of Cyberball and it would change the target of the participants' retaliation (Bies & Moag, 1986). In a true experiment, the variance in these dependent measures explained by Cyberball would fit the definition of retaliation.

*Limitations and Future Research*

The generalizability of the results of this study may be questioned because this was a lab experiment and not a field study. However, internally valid effects generally generalize well to other contexts (Anderson et al., 1999). The more important criticisms regard the construct validity of the components of my experimental paradigm. For example, a skeptic could argue that the "social exchange" between research participants in an anonymous, virtual, three-minute game of catch is not the same exchange that exists between employees in organizations. Although the two forms of exchange may be governed by different norms, rules, and degrees of social connection, there is no evidence in the literature of there being different kinds of social exchanges or different types of fairness. There is no evidence that there are different fairness "constructs"; fairness in one setting means the same thing as it does in another, even if the expectations are different, because fairness in all contexts is fundamentally a judgement about a

social exchange being upheld. Cyberball bases its' social exchange on reciprocity and interpersonal trust, just as every other social exchange does; therefore, perceived fairness in Cyberball should be the same construct that is perceived in organizations.

The domain of behavior that can be defined as counterproductive is practically infinite. So, the generalizability of my retaliation proxy to all forms of CWB must be addressed. I have two points. First, the experimental design of this study allows me to draw causal conclusions between perceptions of fairness and the antisocial, deviant response that I used as a proxy for retaliation. Specifically, participants who were treated unfairly showed a greater level of retaliation, and the measure of retaliation temporally followed the unfair treatment. Second, beyond having confidence in cause and effect, the proxy in this study should generalize to most other CWBs because all CWBs that are a response to injustice are ad hoc retaliatory in nature. So, my proxy for CWB in this study should share something in common with all CWBs that are a response to injustice. This includes forms of retaliation that are pro-social or non-deviant in nature. An example of this type of behavior would be reporting a bully or harasser to human resources. In such cases, the retaliation is not necessarily counterproductive, but it is still a punishing type of response towards the source of injustice. In sum, the experimental design of my study has allowed me to manipulate the catalyst of CWB (unfair treatment), which depending on circumstance can evoke a wide range of retaliatory behavior.

A skeptic may also be concerned that my proxy for retaliation, as operationalized as redacting bonus pay from the confederates, is confounded with punishment or some similar deviant behavior. Obviously, any redaction in pay directed towards the confederates that is a response to unfair treatment fits the definition of retaliation. However, there was still substantial amounts of redactions in pay directed at the confederates when the participants perceived that

they were treated fairly. These instances may be more characterizable as punishment than retaliation, because the participants don't have perceptions of injustice to retaliate against. Nonetheless, the difference in pay redaction between those who perceived fair treatment and those who perceived unfair treatment is attributable to their response to the perceived unfair treatment; which is the variance above the baseline of pay redaction that my statistical tests detected. Hence, although it is clear that participants who perceived fair treatment may have punished the confederates, my data suggests that such "punishment" is greater when it is a response to unfair treatment, which fits the definition of retaliation. This is further supported by the intercorrelations between perceptions of fairness, retaliation, and intent to retaliate. In sum, my results demonstrate the construct validity of my measures, and the results of this study should generalize to a field setting.

Although I aimed to study the organizational justice and CWB constructs, one could argue that this study really assessed fairness and deviant behavior and is more social psychology than it is industrial-organizational. Both Cyberball and the Cyberball-specific organizational justice scale appear to be construct valid, but any inferences made about workplace constructs should nonetheless be put to the test. For this reason, I am planning to run a second, cross-sectional field study in the future to test the generalizability of these findings. Inferences made from this study and inferences made from a future field study will complement each other well. For instance, the experimental design of this study allowed me to detect and infer causation in one direction; but often the relationship between two variables is not unidirectional and involves reciprocal and third-variable relationships (e.g., Huang, et al., 2017). Field studies are better suited to detect these kinds of extraneous effects. Furthermore, field studies are seldom able to discriminate between reciprocal or covarying effects, so the observed effect sizes associated with

my hypotheses could actually be inflated in a field study. The goal of this field study is strictly to demonstrate that organization-specific measures correlate in directions consistent with my experimental model, to bolster the external validity of my findings in this study.

My study addressed the relationship between personality and perceptions of fairness. In my opinion, one of the strongest limitation of this study was that I left out a measure of the construct fairness propensity (Colquitt et al., 2018). It remains possible that fairness propensity correlates in a meaningful way with honesty-humility, if for no other reason than the fairness facet of honesty-humility (Ashton & Lee, 2009). However, this study did control for the short list of variables that have been demonstrated to meaningfully interact with fairness perceptions in the past, risk aversion and trust propensity (Colquitt et al., 2006). These traits have outperformed other constructs such as exchange ideology and equity sensitivity as moderators of organizational justice effects (Colquitt et al., 2006; Scott & Colquitt, 2007). I did not control for the latter two constructs because I did not want to overly-control the observed effect, and I controlled for the best moderators anyways. Because honesty-humility and self-control interact with organizational justice beyond that explained by risk aversion and trust propensity, my results suggest that honesty-humility and/ or self-control will explain variance beyond any fairness-specific personality traits. The variables used in my study should perform even better in field studies, where there is a wider domain of outcomes being assessed (Shaffer & Postlethwaite, 2012).

Similarly, my hypotheses regarding honesty-humility required me to use HEXACO. Using HEXACO was necessary to minimize the criterion-related overlap between honesty-humility and agreeableness, neuroticism (emotional stability) and conscientiousness. Previous personality x organizational justice literature has been limited to the five-factor model (e.g., Colquitt et al., 2006; Scott & Colquitt, 2007), but the HEXACO conceptualizations of these traits

are more generalizable and have better psychometric properties than the five-factor model (e.g., Ashton, Lee, & Goldberg, 2004; 2007; Thielman et al., 2021).

*Practical and Theoretical Implications*

This study demonstrated that Cyberball can be used to manipulate fairness. Likewise, this study showed that fairness can be manipulated in a quick and cost-effective way using online samples. This is particularly useful because of the lack of experimental designs used to study organizational justice, which are often necessary to confidently draw causal conclusions. It is no surprise that Cyberball can be used to manipulate perceptions of fairness because it was designed to elicit unfair and unwarranted treatment, fundamentally. To this point, the Cyberball conditions in this study influenced perceptions of fairness with effects similar in size to feelings of felt ostracism, which is what Cyberball was originally designed to manipulate (Williams et al., 2000).

Related to this advancement, I generated novel, Cyberball-specific fairness scales and a proxy for retaliation that is readily adaptable for future online or Cyberball-specific research. Not only was the content of the fairness scales similar to that found in other fairness or organizational justice measures, but this study produced acceptable reliability evidence for these scales, in addition to convincing construct-related validity evidence. This study also produced convincing construct-related validity evidence for the proxy used for retaliation. Hence, future researchers may benefit from using Cyberball to manipulate fairness, to use or adapt my justice scale(s), or to use my proxy for retaliation; all of these advancements are themselves useful for psychology.

Based on my findings, researchers may choose to include measures of honesty-humility and self-control over alternative predictors, especially in settings such as personnel selection where test length matters. Before this study, the personality constructs that had been used to

predict perceptions of fairness and its' effects had been narrow traits with limited construct-related validity and generalizability to other outcomes (e.g., exchange ideology, equity sensitivity, risk aversion, and trust propensity). Compared to those narrow traits, honesty-humility and self-control will better predict other important outcomes, and perceptions of fairness and its effects in a wider variety of contexts (such as fairness effects in different occupations, or for groups nested within an organization), by virtue of being broader traits. Hence, honesty-humility and self-control can be more efficient measures to include in a test when predicting perceptions of fairness and/or responses to injustice, because they will have more generalizable effects than narrow traits.

I believe there to be two main theoretical implications from this work. Foremost, using an experimental design where causal conclusions can be drawn, this study demonstrated the relationship between honesty-humility and perceptions of fairness, and inferably about social exchange in organizations. Second, this study utilized both an experimental paradigm and social exchange theory to demonstrate the causal link between fairness perceptions and retaliation.

*Conclusion*

Justice in organizations has been discussed since at least the time of Socrates. From a social exchange perspective, practically all CWBs can be viewed as a response to injustice. All CWBs have situational catalysts, and our judgements of justice in those situations fundamentally determine how we respond. Despite the obvious fact that everybody responds to justice differently, little is known about what personality traits interact with organizational justice. I aimed to address this gap in knowledge in this thesis. The results of my study show that honesty-humility does effect perceptions of organizational justice, but my hypothesis that honesty-humility moderates the effect of organizational (in)justice on retaliation was not supported. The

failure to support my latter two hypotheses is attributable to the failure of my proxy of retaliatory pay redactions to accurately measure CWB. Nonetheless, this thesis demonstrates that honesty-humility can be used to predict organizational justice, and it opens the door for future researchers to explore fairness in a new experimental medium.

Appendix A

Please select the face that best represents your level of satisfaction with the other players.

Appendix B

*Table 2: Similarity of Ad Hoc Justice Items to Established Measures*

**Overall Justice**

| Item | Similar Item | Source |
|---|---|---|
| Overall, I was treated fairly during this game of catch. | "Overall, I'm treated fairly by my organization" | Ambrose & Schminke, 2009 |
| This game of catch was fair. | "Usually, the way things work in this organization are not fair" | Ambrose & Schminke, 2009 |
| I was treated equally with the other players. | "For the most part, this organization treats its employees fairly" | Ambrose & Schminke, 2009 |
| I was given the ball a fair number of times, given that there were three players. | "For the most part, this organization treats its employees fairly" | Ambrose & Schminke, 2009 |
| I feel like this game of catch was unfair. | "For the most part, this organization treats its employees fairly" | Ambrose & Schminke, 2009 |

**Distributive Justice**

| Item | Similar Item | Source |
|---|---|---|
| I should have been tossed the ball more. | Is your outcome justified, given your performance? | Colquitt, 2001; Leventhal, 1976 |
| The ball was thrown to me close to the same number of times that it was thrown to the other players. | Is your (outcome) appropriate for the work you have completed? | Colquitt, 2001; Leventhal, 1976 |
| The other players were more involved in the game than I was. | Is your outcome justified, given your performance? | Colquitt, 2001; Leventhal, 1976 |

**Interactional Justice**

| Item | Similar Item | Source |
|---|---|---|
| I would enjoy playing with these people in real life. | N/A | Bies & Moag, 1986 |
| The other players were rude to me. | Has (he/she) treated you in a polite manner? | Colquitt, 2001; Bies & Moag, 1986 |
| The other players did not treat me with respect. | Has (he/she) treated you with respect? | Colquitt, 2001; Bies & Moag, 1986 |

| | | |
|---|---|---|
| The other players included me in the game. | N/A | Bies & Moag, 1986; Roch & Shannock, 2006 |
| The other players excluded me from the game. | N/A | Bies & Moag, 1986 |
| If I were to play with them again, I could count on the other players to treat me fairly. | N/A | Bies & Moag, 1986 |

Appendix C

*Table 3: Means, standard deviations, and correlations for personality variables*

| Variable | *M* | *SD* | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| 1. Honesty-Humility | 3.19 | 0.68 | | | | | |
| 2. Self-Control | 3.36 | 0.57 | .42** [.31, .51] | | | | |
| 3. Agreeableness | 3.27 | 0.57 | .51** [.42, .60] | .50** [.40, .58] | | | |
| 4. Emotionality | 3.12 | 0.49 | .01 [-.11, .13] | -.17** [-.29, -.05] | -.11 [-.23, .01] | | |
| 5. Conscientiousness | 3.39 | 0.67 | .50** [.40, .59] | .67** [.60, .73] | .37** [.26, .47] | .01 [-.11, .13] | |
| 6. Risk Aversion | 3.19 | 0.59 | .38** [.27, .48] | .18** [.05, .30] | .11 [-.02, .23] | .00 [-.12, .13] | .32** [.20, .42] |
| 7. Trust Propensity | 3.37 | 0.62 | .29** [.17, .40] | .42** [.31, .51] | .54** [.44, .62] | .05 [-.07, .18] | .29** [.17, .40] |
| 8. Altruism | 3.44 | 0.52 | .46** [.35, .55] | .55** [.46, .63] | .51** [.42, .60] | .10 [-.03, .22] | .57** [.48, .64] |

*Note. M* and *SD* are used to represent mean and standard deviation, respectively. Values in square brackets indicate the 95% confidence interval for each correlation. The confidence interval is a plausible range of population correlations that could have caused the sample correlation (Cumming, 2014). * indicates $p < .05$. ** indicates $p < .01$.

Appendix D

Table 4

*Means, standard deviations, and correlations for validation information*

| Variable | *M* | *SD* | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| 1. Cyberball | -1.51 | 0.50 | | | | | |
| 2. DJ | 2.67 | 0.86 | -.31** [-.42, -.20] | | | | |
| 3. IJ | 3.05 | 0.87 | -.42** [-.52, -.32] | .67** [.60, .73] | | | |
| 4. OJ | 3.01 | 1.02 | -.34** [-.45, -.23] | .65** [.57, .71] | .83** [.79, .86] | | |
| 5. How Many Thrown to You | 4.16 | 2.34 | -.41** [-.51, -.31] | .24** [.12, .35] | .29** [.18, .40] | .22** [.10, .33] | |
| 6. What Percent Thrown to You | 25.65 | 21.90 | -.25** [-.36, -.13] | .23** [.12, .34] | .37** [.26, .47] | .41** [.30, .50] | .26** [.15, .37] |
| 7. Faces | 4.63 | 1.73 | -.41** [-.51, -.31] | .50** [.41, .59] | .67** [.59, .73] | .67** [.60, .73] | .33** [.22, .43] |
| 8. Intent to Retaliate | 2.83 | 0.70 | .24** [.12, .35] | -.35** [-.46, -.25] | -.52** [-.60, -.42] | -.45** [-.54, -.34] | -.09 [-.21, .03] |
| 9. Felt Ostracism | -2.49 | 0.58 | .38** [.27, .47] | -.60** [-.67, -.51] | -.73** [-.78, -.67] | -.70** [-.76, -.63] | -.29** [-.40, -.18] |
| 10. How Fairly Were You Treated | 3.16 | 1.13 | -.30** [-.40, -.18] | .58** [.49, .65] | .69** [.62, .75] | .76** [.71, .81] | .28** [.17, .39] |
| 11. I Was Treated Fairly | 3.27 | 1.17 | -.27** [-.38, -.15] | .54** [.45, .62] | .64** [.56, .70] | .76** [.70, .80] | .26** [.14, .37] |
| 12. Retaliation | -0.30 | 0.18 | .23** [.12, .34] | -.34** [-.44, -.23] | -.46** [-.55, -.36] | -.39** [-.49, -.29] | -.14* [-.26, -.02] |

*Note.* *M* and *SD* are used to represent mean and standard deviation, respectively. Values in square brackets indicate the 95% confidence interval for each correlation. The confidence interval is a plausible range of population correlations that could have caused the sample correlation (Cumming, 2014). * indicates $p < .05$. ** indicates $p < .01$. Positive values on the faces scale represent 😊 faces.

Appendix E

*Table 5: Regression results using Distributive Justice as the criterion*

| Predictor | *b* | *b* 95% CI [LL, UL] | $sr^2$ | $sr^2$ 95% CI [LL, UL] | Fit | Difference |
|---|---|---|---|---|---|---|
| (Intercept) | -1.17** | [-1.57, -0.77] | | | | |
| Altruism | -0.26** | [-0.45, -0.07] | .03 | [-.01, .07] | | |
| Agree | 0.26** | [0.09, 0.43] | .03 | [-.01, .07] | | |
| Consc | -0.13 | [-0.29, 0.03] | .01 | [-.01, .03] | | |
| Emotional | -0.00 | [-0.13, 0.12] | .00 | [-.00, .00] | | |
| Trust Prop | 0.01 | [-0.15, 0.18] | .00 | [-.00, .00] | | |
| Risk | 0.06 | [-0.08, 0.20] | .00 | [-.01, .01] | | |
| HH | 0.01 | [-0.15, 0.17] | .00 | [-.00, .00] | | |
| Cyberball | -0.79** | [-1.04, -0.54] | .14 | [.06, .22] | | |
| Agree*Emotional | 0.04 | [-0.04, 0.11] | .00 | [-.01, .02] | | |
| | | | | | $R^2$ = .226** 95% CI[.11,.29] | |
| (Intercept) | -1.09** | [-1.47, -0.71] | | | | |
| Altruism | -0.32** | [-0.50, -0.14] | .04 | [-.00, .08] | | |
| Agree | 0.22** | [0.06, 0.39] | .02 | [-.01, .06] | | |
| Consc | -0.10 | [-0.25, 0.05] | .01 | [-.01, .02] | | |
| Emotional | -0.01 | [-0.13, 0.10] | .00 | [-.00, .00] | | |
| Trust Prop | 0.04 | [-0.12, 0.20] | .00 | [-.01, .01] | | |
| Risk | 0.09 | [-0.05, 0.22] | .01 | [-.01, .02] | | |
| HH | -0.82** | [-1.21, -0.43] | .06 | [.01, .11] | | |
| Cyberball | -0.74** | [-0.98, -0.50] | .12 | [.05, .19] | | |
| Agree*Emotional | 0.04 | [-0.03, 0.11] | .01 | [-.01, .02] | | |
| HH*Cyberball | -0.55** | [-0.79, -0.31] | .07 | [.01, .13] | | |
| | | | | | $R^2$ = .294** 95% CI[.17,.36] | $\Delta R^2$ = .069** 95% CI[.01, .13] |

*Note.* A significant *b*-weight indicates the semi-partial correlation is also significant. *B* represents unstandardized regression weights. $Sr^2$ represents the semi-partial correlation squared. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. "Consc" is conscientiousness, "Emotional" is emotionality, "Trust Prop" is trust propensity, "Risk" is risk aversion, "Agree" is agreeableness, HH is honesty-humility.
* indicates $p < .05$. ** indicates $p < .01$.

Appendix F

*Table 6: Regression results using Interactional Justice as the criterion*

| Predictor | *b* | *b* 95% CI [LL, UL] | $sr^2$ | $sr^2$ 95% CI [LL, UL] | Fit | Difference |
|---|---|---|---|---|---|---|
| (Intercept) | -1.34** | [-1.74, -0.94] | | | | |
| Altruism | -0.14 | [-0.32, 0.05] | .01 | [-.01, .03] | | |
| Agree | 0.15 | [-0.02, 0.32] | .01 | [-.01, .03] | | |
| Consc | -0.04 | [-0.20, 0.12] | .00 | [-.01, .01] | | |
| Emotional | 0.01 | [-0.11, 0.13] | .00 | [-.00, .00] | | |
| Trust Prop | 0.10 | [-0.06, 0.27] | .01 | [-.01, .02] | | |
| Risk | 0.02 | [-0.12, 0.16] | .00 | [-.00, .00] | | |
| HH | -0.03 | [-0.19, 0.13] | .00 | [-.00, .01] | | |
| Cyberball | -0.91** | [-1.16, -0.66] | .18 | [.09, .27] | | |
| Agree*Emotional | 0.06 | [-0.02, 0.13] | .01 | [-.01, .03] | | |
| | | | | | $R^2$ = .233** 95% CI[.11,.30] | |
| (Intercept) | -1.25** | [-1.63, -0.87] | | | | |
| Altruism | -0.20* | [-0.38, -0.02] | .02 | [-.01, .04] | | |
| Agree | 0.11 | [-0.05, 0.27] | .01 | [-.01, .02] | | |
| Consc | -0.00 | [-0.15, 0.15] | .00 | [-.00, .00] | | |
| Emotional | 0.00 | [-0.11, 0.12] | .00 | [-.00, .00] | | |
| Trust Prop | 0.13 | [-0.02, 0.29] | .01 | [-.01, .03] | | |
| Risk | 0.05 | [-0.08, 0.19] | .00 | [-.01, .01] | | |
| HH | -0.95** | [-1.34, -0.57] | .08 | [.02, .13] | | |
| Cyberball | -0.86** | [-1.10, -0.62] | .16 | [.08, .24] | | |
| Agree*Emotional | 0.06 | [-0.01, 0.13] | .01 | [-.01, .03] | | |
| HH*Cyberball | -0.61** | [-0.85, -0.38] | .08 | [.02, .15] | | |
| | | | | | $R^2$ = .318** 95% CI[.19,.38] | $\Delta R^2$ = .085** 95% CI[.02, .15] |

*Note.* A significant *b*-weight indicates the semi-partial correlation is also significant. *B* represents unstandardized regression weights. $Sr^2$ represents the semi-partial correlation squared. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. "Consc" is conscientiousness, "Emotional" is emotionality, "Trust Prop" is trust propensity, "Risk" is risk aversion, "Agree" is agreeableness, HH is honesty-humility.
* indicates $p < .05$. ** indicates $p < .01$.

Appendix G

*Table 7: Regression results using Overall Justice as the criterion*

| Predictor | *b* | *b* 95% CI [LL, UL] | $sr^2$ | $sr^2$ 95% CI [LL, UL] | Fit | Difference |
|---|---|---|---|---|---|---|
| (Intercept) | -1.14** | [-1.54, -0.73] | | | | |
| Altruism | -0.19 | [-0.38, 0.01] | .01 | [-.01, .04] | | |
| Agree | 0.11 | [-0.06, 0.29] | .01 | [-.01, .03] | | |
| Consc | -0.10 | [-0.26, 0.06] | .01 | [-.01, .02] | | |
| Emotional | 0.02 | [-0.11, 0.14] | .00 | [-.00, .00] | | |
| Trust Prop | 0.14 | [-0.03, 0.31] | .01 | [-.01, .03] | | |
| Risk | 0.01 | [-0.13, 0.15] | .00 | [-.00, .00] | | |
| HH | -0.05 | [-0.21, 0.12] | .00 | [-.01, .01] | | |
| Cyberball | -0.76** | [-1.02, -0.51] | .13 | [.05, .21] | | |
| Agree*Emotional | 0.06 | [-0.02, 0.13] | .01 | [-.01, .03] | | |
| | | | | | $R^2$ = .191** 95% CI[.08,.25] | |
| (Intercept) | -1.04** | [-1.43, -0.66] | | | | |
| Altruism | -0.26** | [-0.44, -0.07] | .03 | [-.01, .06] | | |
| Agree | 0.07 | [-0.09, 0.23] | .00 | [-.01, .01] | | |
| Consc | -0.06 | [-0.22, 0.09] | .00 | [-.01, .01] | | |
| Emotional | 0.01 | [-0.11, 0.12] | .00 | [-.00, .00] | | |
| Trust Prop | 0.17* | [0.02, 0.33] | .02 | [-.01, .04] | | |
| Risk | 0.04 | [-0.09, 0.17] | .00 | [-.01, .01] | | |
| HH | -1.01** | [-1.40, -0.62] | .09 | [.02, .15] | | |
| Cyberball | -0.71** | [-0.95, -0.46] | .11 | [.04, .18] | | |
| Agree*Emotional | 0.07 | [-0.00, 0.14] | .01 | [-.01, .04] | | |
| HH*Cyberball | -0.64** | [-0.88, -0.40] | .09 | [.03, .16] | | |
| | | | | | $R^2$ = .284** 95% CI[.16,.35] | $\Delta R^2$ = .093** 95% CI[.03, .16] |

*Note.* A significant *b*-weight indicates the semi-partial correlation is also significant. *B* represents unstandardized regression weights. $Sr^2$ represents the semi-partial correlation squared. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. "Consc" is conscientiousness, "Emotional" is emotionality, "Trust Prop" is trust propensity, "Risk" is risk aversion, "Agree" is agreeableness, HH is honesty-humility.

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

Appendix H

*Table 8: Regression results using Retaliation as the criterion and Distributive Justice as the predictor*

| Predictor | *b* | *b* 95% CI [LL, UL] | $sr^2$ | $sr^2$ 95% CI [LL, UL] | Fit | Difference |
|---|---|---|---|---|---|---|
| (Intercept) | -0.29** | [-0.32, -0.27] | | | | |
| Altruism | 0.01 | [-0.03, 0.04] | .00 | [-.01, .01] | | |
| Agree | 0.03 | [-0.01, 0.06] | .01 | [-.01, .03] | | |
| Consc | -0.03 | [-0.05, 0.00] | .01 | [-.01, .04] | | |
| Emotional | -0.01 | [-0.03, 0.02] | .00 | [-.01, .01] | | |
| Trust Prop | -0.02 | [-0.05, 0.01] | .01 | [-.01, .02] | | |
| Risk | -0.01 | [-0.04, 0.01] | .00 | [-.01, .02] | | |
| DJ | -0.06** | [-0.08, -0.04] | .10 | [.02, .17] | | |
| HH | -0.01 | [-0.04, 0.02] | .00 | [-.01, .02] | | |
| Agree*Emotional | -0.00 | [-0.02, 0.01] | .00 | [-.00, .00] | | |
| Trust Prop*DJ | -0.01 | [-0.03, 0.01] | .01 | [-.01, .02] | | |
| Risk*DJ | -0.01 | [-0.03, 0.01] | .00 | [-.01, .02] | | |
| | | | | | $R^2$ = .168** 95% CI[.05,.22] | |
| (Intercept) | -0.29** | [-0.32, -0.27] | | | | |
| Altruism | 0.01 | [-0.03, 0.05] | .00 | [-.01, .01] | | |
| Agree | 0.03 | [-0.01, 0.06] | .01 | [-.01, .03] | | |
| Consc | -0.02 | [-0.05, 0.01] | .01 | [-.01, .03] | | |
| Emotional | -0.01 | [-0.03, 0.02] | .00 | [-.01, .01] | | |
| Trust Prop | -0.02 | [-0.05, 0.01] | .01 | [-.01, .02] | | |
| Risk | -0.01 | [-0.04, 0.02] | .00 | [-.01, .01] | | |
| DJ | -0.05** | [-0.08, -0.03] | .07 | [.01, .13] | | |
| HH | -0.02 | [-0.05, 0.01] | .01 | [-.01, .03] | | |
| Agree*Emotional | -0.00 | [-0.02, 0.01] | .00 | [-.00, .00] | | |
| Trust Prop*DJ | -0.00 | [-0.02, 0.02] | .00 | [-.01, .01] | | |
| Risk*DJ | -0.00 | [-0.02, 0.02] | .00 | [-.00, .00] | | |
| DJ*HH | -0.02 | [-0.04, 0.01] | .01 | [-.01, .03] | | |
| | | | | | $R^2$ = .176** 95% CI[.05,.22] | $\Delta R^2$ = .008 95% CI[-.01, .03] |

*Note.* A significant *b*-weight indicates the semi-partial correlation is also significant. *b* represents unstandardized regression weights. $sr^2$ represents the semi-partial correlation squared. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. "Consc" is

conscientiousness, “Emotional” is emotionality, “Trust Prop” is trust propensity, “Risk” is risk aversion, “Agree” is agreeableness, HH is honesty-humility, “DJ” is distributive justice.
* indicates $p < .05$. ** indicates $p < .01$.

Appendix I

*Table 9: Regression results using Retaliation as the criterion and Interactional Justice as the predictor*

| Predictor | *b* | *b* 95% CI [LL, UL] | $sr^2$ | $sr^2$ 95% CI [LL, UL] | Fit | Difference |
|---|---|---|---|---|---|---|
| (Intercept) | -0.29** | [-0.31, -0.27] | | | | |
| Altruism | 0.01 | [-0.02, 0.04] | .00 | [-.01, .01] | | |
| Agree | 0.02 | [-0.01, 0.05] | .01 | [-.01, .02] | | |
| Consc | -0.02 | [-0.05, 0.01] | .01 | [-.01, .02] | | |
| Emotional | -0.00 | [-0.03, 0.02] | .00 | [-.00, .00] | | |
| Trust Prop | -0.01 | [-0.04, 0.02] | .00 | [-.01, .01] | | |
| Risk | -0.01 | [-0.03, 0.01] | .00 | [-.01, .01] | | |
| IJ | -0.08** | [-0.10, -0.06] | .19 | [.10, .28] | | |
| HH | -0.02 | [-0.05, 0.01] | .01 | [-.01, .02] | | |
| Agree*Emotional | 0.00 | [-0.01, 0.01] | .00 | [-.00, .00] | | |
| Trust Prop*IJ | -0.01 | [-0.03, 0.00] | .01 | [-.01, .03] | | |
| Risk*IJ | -0.01 | [-0.02, 0.01] | .00 | [-.01, .01] | | |
| | | | | | $R^2$ = .279** 95% CI[.15,.34] | |
| (Intercept) | -0.29** | [-0.31, -0.27] | | | | |
| Altruism | 0.01 | [-0.02, 0.04] | .00 | [-.01, .01] | | |
| Agree | 0.02 | [-0.01, 0.05] | .01 | [-.01, .03] | | |
| Consc | -0.02 | [-0.04, 0.01] | .01 | [-.01, .02] | | |
| Emotional | -0.00 | [-0.03, 0.02] | .00 | [-.00, .00] | | |
| Trust Prop | -0.01 | [-0.04, 0.02] | .00 | [-.01, .01] | | |
| Risk | -0.01 | [-0.03, 0.01] | .00 | [-.01, .01] | | |
| IJ | -0.08** | [-0.10, -0.06] | .16 | [.08, .25] | | |
| HH | -0.02 | [-0.05, 0.00] | .01 | [-.01, .03] | | |
| Agree*Emotional | -0.00 | [-0.01, 0.01] | .00 | [-.00, .00] | | |
| Trust Prop*IJ | -0.01 | [-0.02, 0.01] | .00 | [-.01, .01] | | |
| Risk*IJ | 0.00 | [-0.02, 0.02] | .00 | [-.00, .00] | | |
| IJ*HH | -0.02 | [-0.04, 0.01] | .01 | [-.01, .03] | | |
| | | | | | $R^2$ = .286** 95% CI[.15,.34] | $\Delta R^2$ = .007 95% CI[-.01, .03] |

*Note.* A significant *b*-weight indicates the semi-partial correlation is also significant. *b* represents unstandardized regression weights. $sr^2$ represents the semi-partial correlation squared. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. "Consc" is

conscientiousness, “Emotional” is emotionality, “Trust Prop” is trust propensity, “Risk” is risk aversion, “Agree” is agreeableness, HH is honesty-humility, “IJ” is interactional justice.

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

Appendix J

*Table 10: Regression results using Retaliation as the criterion and Overall Justice as the predictor*

| Predictor | *b* | *b* 95% CI [LL, UL] | $sr^2$ | $sr^2$ 95% CI [LL, UL] | Fit | Difference |
|---|---|---|---|---|---|---|
| (Intercept) | -0.29** | [-0.31, -0.27] | | | | |
| Altruism | 0.01 | [-0.03, 0.04] | .00 | [-.00, .01] | | |
| Agree | 0.01 | [-0.02, 0.05] | .00 | [-.01, .02] | | |
| Consc | -0.03 | [-0.05, 0.00] | .01 | [-.01, .04] | | |
| Emotional | -0.00 | [-0.02, 0.02] | .00 | [-.00, .00] | | |
| Trust Prop | -0.00 | [-0.03, 0.02] | .00 | [-.00, .00] | | |
| Risk | -0.01 | [-0.04, 0.01] | .00 | [-.01, .02] | | |
| OJ | -0.08** | [-0.10, -0.06] | .17 | [.09, .26] | | |
| HH | -0.02 | [-0.05, 0.01] | .01 | [-.01, .02] | | |
| Agree*Emotional | -0.00 | [-0.01, 0.01] | .00 | [-.00, .00] | | |
| Trust Prop*OJ | -0.02 | [-0.03, 0.00] | .01 | [-.01, .04] | | |
| Risk*OJ | 0.00 | [-0.02, 0.02] | .00 | [-.00, .00] | | |
| | | | | | $R^2$ = .256** 95% CI[.12,.31] | |
| (Intercept) | -0.29** | [-0.32, -0.27] | | | | |
| Altruism | 0.01 | [-0.03, 0.04] | .00 | [-.00, .01] | | |
| Agree | 0.02 | [-0.01, 0.05] | .00 | [-.01, .02] | | |
| Consc | -0.02 | [-0.05, 0.00] | .01 | [-.01, .03] | | |
| Emotional | -0.00 | [-0.03, 0.02] | .00 | [-.00, .00] | | |
| Trust Prop | -0.01 | [-0.03, 0.02] | .00 | [-.00, .01] | | |
| Risk | -0.01 | [-0.03, 0.02] | .00 | [-.01, .01] | | |
| OJ | -0.08** | [-0.10, -0.05] | .16 | [.07, .24] | | |
| HH | -0.03 | [-0.06, 0.00] | .01 | [-.01, .04] | | |
| Agree*Emotional | -0.00 | [-0.02, 0.01] | .00 | [-.00, .01] | | |
| Trust Prop*OJ | -0.01 | [-0.03, 0.01] | .00 | [-.01, .01] | | |
| Risk*OJ | 0.01 | [-0.01, 0.03] | .00 | [-.01, .02] | | |
| OJ*HH | -0.02* | [-0.04, -0.00] | .01 | [-.01, .04] | | |
| | | | | | $R^2$ = .269** 95% CI[.13,.32] | $\Delta R^2$ = .014* 95% CI[-.01, .04] |

*Note.* A significant *b*-weight indicates the semi-partial correlation is also significant. *B* represents unstandardized regression weights. $Sr^2$ represents the semi-partial correlation squared. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. "Consc" is

conscientiousness, “Emotional” is emotionality, “Trust Prop” is trust propensity, “Risk” is risk aversion, “Agree” is agreeableness, HH is honesty-humility, “OJ” is overall justice.

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

Appendix K

*Table 11: Regression results using Retaliation as the criterion and Distributive Justice as the predictor*

| Predictor | *b* | *b* 95% CI [LL, UL] | $sr^2$ | $sr^2$ 95% CI [LL, UL] | Fit | Difference |
|---|---|---|---|---|---|---|
| (Intercept) | -0.29** | [-0.32, -0.27] | | | | |
| Altruism | 0.00 | [-0.03, 0.04] | .00 | [-.00, .00] | | |
| Agree | 0.02 | [-0.01, 0.05] | .00 | [-.01, .02] | | |
| Consc | -0.04* | [-0.07, -0.00] | .02 | [-.01, .05] | | |
| Emotional | -0.00 | [-0.03, 0.02] | .00 | [-.00, .01] | | |
| Trust Prop | -0.02 | [-0.05, 0.01] | .01 | [-.01, .02] | | |
| Risk | -0.01 | [-0.04, 0.01] | .01 | [-.01, .02] | | |
| DJ | -0.06** | [-0.08, -0.04] | .10 | [.03, .17] | | |
| SC | 0.02 | [-0.02, 0.05] | .00 | [-.01, .02] | | |
| Agree*Emotional | -0.00 | [-0.02, 0.01] | .00 | [-.00, .00] | | |
| Trust Prop*DJ | -0.01 | [-0.03, 0.01] | .01 | [-.01, .02] | | |
| Risk*DJ | -0.01 | [-0.03, 0.01] | .00 | [-.01, .02] | | |
| | | | | | $R^2$ = .167** 95% CI[.05,.22] | |
| (Intercept) | -0.30** | [-0.32, -0.27] | | | | |
| Altruism | 0.01 | [-0.03, 0.04] | .00 | [-.00, .01] | | |
| Agree | 0.02 | [-0.01, 0.05] | .01 | [-.01, .02] | | |
| Consc | -0.03* | [-0.07, -0.00] | .02 | [-.01, .04] | | |
| Emotional | -0.01 | [-0.03, 0.02] | .00 | [-.01, .01] | | |
| Trust Prop | -0.02 | [-0.05, 0.01] | .01 | [-.01, .02] | | |
| Risk | -0.01 | [-0.04, 0.01] | .00 | [-.01, .02] | | |
| DJ | -0.05** | [-0.07, -0.02] | .06 | [.00, .11] | | |
| SC | 0.01 | [-0.02, 0.05] | .00 | [-.01, .01] | | |
| Agree*Emotional | -0.01 | [-0.02, 0.01] | .00 | [-.01, .01] | | |
| Trust Prop*DJ | -0.00 | [-0.02, 0.02] | .00 | [-.00, .00] | | |
| Risk*DJ | -0.01 | [-0.03, 0.01] | .00 | [-.01, .02] | | |
| DJ*SC | -0.03** | [-0.05, -0.01] | .03 | [-.01, .06] | | |
| | | | | | $R^2$ = .194** 95% CI[.07,.24] | $\Delta R^2$ = .027** 95% CI[-.01, .06] |

*Note.* A significant *b*-weight indicates the semi-partial correlation is also significant. *b* represents unstandardized regression weights. $sr^2$ represents the semi-partial correlation squared. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. "Consc" is

conscientiousness, “Emotional” is emotionality, “Trust Prop” is trust propensity, “Risk” is risk aversion, “Agree” is agreeableness, SC is self-control, “DJ” is distributive justice.

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

Appendix L

*Table 12: Regression results using Retaliation as the criterion and Interactional Justice as the predictor*

| Predictor | *b* | *b* 95% CI [LL, UL] | $sr^2$ | $sr^2$ 95% CI [LL, UL] | Fit | Difference |
|---|---|---|---|---|---|---|
| (Intercept) | -0.29** | [-0.31, -0.27] | | | | |
| Altruism | 0.00 | [-0.03, 0.04] | .00 | [-.00, .00] | | |
| Agree | 0.01 | [-0.02, 0.04] | .00 | [-.01, .01] | | |
| Consc | -0.03* | [-0.06, -0.00] | .01 | [-.01, .04] | | |
| Emotional | -0.00 | [-0.02, 0.02] | .00 | [-.00, .00] | | |
| Trust Prop | -0.01 | [-0.04, 0.02] | .00 | [-.01, .01] | | |
| Risk | -0.02 | [-0.04, 0.01] | .01 | [-.01, .02] | | |
| IJ | -0.08** | [-0.10, -0.06] | .19 | [.10, .28] | | |
| SC | 0.02 | [-0.01, 0.05] | .01 | [-.01, .02] | | |
| Agree*Emotional | -0.00 | [-0.01, 0.01] | .00 | [-.00, .00] | | |
| Trust Prop*IJ | -0.01 | [-0.03, 0.00] | .01 | [-.01, .02] | | |
| Risk*IJ | -0.00 | [-0.02, 0.01] | .00 | [-.01, .01] | | |
| | | | | | $R^2$ = .279** 95% CI[.15,.34] | |
| (Intercept) | -0.29** | [-0.31, -0.27] | | | | |
| Altruism | 0.00 | [-0.03, 0.04] | .00 | [-.00, .00] | | |
| Agree | 0.01 | [-0.02, 0.04] | .00 | [-.01, .01] | | |
| Consc | -0.03 | [-0.06, 0.00] | .01 | [-.01, .04] | | |
| Emotional | -0.00 | [-0.03, 0.02] | .00 | [-.00, .00] | | |
| Trust Prop | -0.01 | [-0.04, 0.02] | .00 | [-.01, .01] | | |
| Risk | -0.01 | [-0.04, 0.01] | .00 | [-.01, .02] | | |
| IJ | -0.07** | [-0.10, -0.05] | .12 | [.05, .20] | | |
| SC | 0.02 | [-0.01, 0.05] | .00 | [-.01, .02] | | |
| Agree*Emotional | -0.00 | [-0.02, 0.01] | .00 | [-.01, .01] | | |
| Trust Prop*IJ | -0.00 | [-0.02, 0.01] | .00 | [-.01, .01] | | |
| Risk*IJ | -0.01 | [-0.02, 0.01] | .00 | [-.01, .01] | | |
| IJ*SC | -0.02* | [-0.04, -0.00] | .01 | [-.01, .04] | | |
| | | | | | $R^2$ = .293** 95% CI[.16,.35] | $\Delta R^2$ = .015* 95% CI[-.01, .04] |

*Note.* A significant *b*-weight indicates the semi-partial correlation is also significant. *B* represents unstandardized regression weights. $Sr^2$ represents the semi-partial correlation squared. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. "Consc" is

conscientiousness, “Emotional” is emotionality, “Trust Prop” is trust propensity, “Risk” is risk aversion, “Agree” is agreeableness, SC is self-control, “IJ” is interactional justice.
* indicates $p < .05$. ** indicates $p < .01$.

Appendix M

*Table 13: Regression results using Retaliation as the criterion and Overall Justice as the predictor*

| Predictor | *b* | *b* 95% CI [LL, UL] | $sr^2$ | $sr^2$ 95% CI [LL, UL] | Fit | Difference |
|---|---|---|---|---|---|---|
| (Intercept) | -0.29** | [-0.32, -0.27] | | | | |
| Altruism | 0.00 | [-0.03, 0.03] | .00 | [-.00, .00] | | |
| Agree | 0.00 | [-0.02, 0.03] | .00 | [-.00, .00] | | |
| Consc | -0.04* | [-0.07, -0.01] | .02 | [-.01, .05] | | |
| Emotional | 0.00 | [-0.02, 0.02] | .00 | [-.00, .00] | | |
| Trust Prop | -0.00 | [-0.03, 0.02] | .00 | [-.00, .00] | | |
| Risk | -0.02 | [-0.04, 0.01] | .01 | [-.01, .03] | | |
| OJ | -0.08** | [-0.10, -0.06] | .18 | [.09, .26] | | |
| SC | 0.02 | [-0.01, 0.05] | .00 | [-.01, .02] | | |
| Agree*Emotional | -0.00 | [-0.02, 0.01] | .00 | [-.00, .00] | | |
| Trust Prop*OJ | -0.02 | [-0.03, 0.00] | .01 | [-.01, .03] | | |
| Risk*OJ | 0.00 | [-0.02, 0.02] | .00 | [-.00, .00] | | |
| | | | | | $R^2$ = .255** 95% CI[.12,.31] | |
| (Intercept) | -0.29** | [-0.32, -0.27] | | | | |
| Altruism | 0.00 | [-0.03, 0.04] | .00 | [-.00, .00] | | |
| Agree | 0.01 | [-0.02, 0.04] | .00 | [-.01, .01] | | |
| Consc | -0.04* | [-0.07, -0.00] | .02 | [-.01, .05] | | |
| Emotional | -0.00 | [-0.02, 0.02] | .00 | [-.00, .00] | | |
| Trust Prop | -0.01 | [-0.04, 0.02] | .00 | [-.01, .01] | | |
| Risk | -0.01 | [-0.04, 0.01] | .00 | [-.01, .02] | | |
| OJ | -0.07** | [-0.09, -0.05] | .13 | [.05, .21] | | |
| SC | 0.02 | [-0.02, 0.05] | .00 | [-.01, .02] | | |
| Agree*Emotional | -0.00 | [-0.02, 0.01] | .00 | [-.01, .01] | | |
| Trust Prop*OJ | -0.01 | [-0.03, 0.01] | .00 | [-.01, .01] | | |
| Risk*OJ | 0.00 | [-0.02, 0.02] | .00 | [-.00, .00] | | |
| OJ*SC | -0.02* | [-0.04, -0.00] | .02 | [-.01, .04] | | |
| | | | | | $R^2$ = .271** 95% CI[.14,.33] | $\Delta R^2$ = .016* 95% CI[-.01, .04] |

*Note.* A significant *b*-weight indicates the semi-partial correlation is also significant. *b* represents unstandardized regression weights. $sr^2$ represents the semi-partial correlation squared. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. "Consc" is

conscientiousness, “Emotional” is emotionality, “Trust Prop” is trust propensity, “Risk” is risk aversion, “Agree” is agreeableness, SC is self-control, “OJ” is overall justice.
* indicates $p < .05$. ** indicates $p < .01$.

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