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**A VIEW INTO RECIPROCITY – Green 2019**

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**2019**

**A VIEW INTO RECIPROCITY: LITERATURE REVIEW, MEASUREMENT DESIGN,  
AND EXPERIMENT**

**Kelly Green**

**Virginia Commonwealth University**

**A View into Reciprocity: Literature Review, Measurement Design, and Experiment**

**A dissertation submitted in partial fulfillment of the requirements for the degree of**

**Doctoral of**

**Philosophy in Business at Virginia Commonwealth University.**

**by**

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**May 2019**

**ACKNOWLEDGEMENT**

**I would first and foremost thank my wife, Amanda Green, without her support I would not have achieved this level of academia and make our life what it is now. Her constant love and support has been an unimaginable strength in this program. When I've been lost you always look and found me, Time after time. When I've fallen you've caught me... Time after time. Also to my mother and father who have been nothing but positive and took time to converse daily on the PhD process, hearing your voices provided more strength than you know.**

**Brent Roberts and Erin Masters I surely thank for the years of comradery and making certain I was in the correct direction. Dr. Brink for her wisdom, Dr. Reina for amazing guidance and mindfulness when I am anything but. Dr. Norman for her stern confidence and resolve. Dr. Olds for talking me off the fence a few times whether he knew it or not. And of course, Regina Largent, she certainly keeps the VCU graduate studies afloat, she is certainly irreplaceable.**

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**PAPER ONE: A LITERATURE REVIEW OF RECIPROCITY AND ITS ROLE IN  
ACCOUNTING LITERATURE**

**ABSTRACT**

The purpose of this paper is to discuss reciprocity and the role it plays in helping us understand interactions between parties in accounting settings. The concept of reciprocity states that individuals will reward kind behaviors and punish unkind behaviors. (Fisher et al. 2015; Fehr and Gächter 2000; Fehr and Gächter 1997). When trying to trace the origins of the theory of reciprocity, it is useful to track the initial constructs on which it is built from various literary sources. This process contributes to developing an understanding of how reciprocity is used to explain behaviors in the workplace. The notion of reciprocity has a long history and is defined in many iterations of social literature dating back to ancient philosophers. Roman politician Cicero, for example, stated: “there is no duty more indispensable than that of returning a kindness” and “all men distrust one forgetful of a benefit” (Gouldner 1960). This early philosophical sentiment exemplifies the integral role positive reciprocity plays in society and the potential avarice an individual may encounter when not returning positive actions with displays of positive reciprocity.

Through this review, I gather literature that builds on the concept of reciprocity. I organize commonly found themes and organize settings previously used to focus on the multiple constructs to build upon reciprocity.

**KEYWORDS: Reciprocity, Trust, Distributional Fairness, Intention, Attribution.**

## **BACKGROUND AND RECIPROCITY LITERATURE**

Adam Smith (1817) also highlighted the importance of both positive and negative reciprocity for a cohesive society. In “The Theory of Moral Sentiments,” Smith describes constructs that parallel positive and negative reciprocity in terms of “social passions” and “unsocial passions.” Social passions (i.e., positive reciprocity) are noted to be essential for harmonious relations in which “mutual regard renders them happy in one another, and sympathy, with this mutual regard, makes them agreeable to every other person” (Smith 1817, 47). Conversely, unsocial passions (i.e., negative reciprocity) are deemed “necessary parts of the character of human nature” because an individual will “become contemptible, who tamely sits still, and submits to insults, without attempting either to repel or to revenge them” (Smith 1817, 45). The latter quote suggests that if one receives acts of ill intention, social culture expects the individual to respond in kind (negatively) to counter the social injustice.

Now that a very brief overview of historical examples of reciprocity is established, the remainder of this paper proceeds as follows. In the following section (II), I briefly contextualize reciprocity and its role in business contexts outside the accounting literature, focusing primarily on those of economic and management studies, especially those dealing with market exchanges, organizational behavior, social contracts, and leader-member exchange (LMX). Last, I review and synthesize accounting literature that pertains to each of three dominant dimensions of reciprocity: distributional fairness, trust, and intention.

Reciprocity has been prevalent throughout management and organizational behavior literature, especially in the narrower focus of LMX theory (Joseph, Newman, and Sin 2011). Much of the focus in this field is on creating measures to predict successful relationship qualities between leaders (managers) and followers (employees) within an organization. Then, evaluating

qualities that increase subordinate satisfaction, performance, career success, and reduce turnover rates are of particular interest (Gerstner and Day 1997; Graen et al. 1982; Dansereau, Alutto, Markham, and Dumas 1982; Dansereau, Graen and Haga 1975; Wakabayashi and Graen 1984; Vecchio 1982; Bernardin 1987; Graen and Uhl-Bien 1995; Graen, George and Cashman 1975). In the commonly used LMX-7 model, seven questions are utilized to determine individuals' perception of the "quality of exchange between supervisors and subordinates" from the perspective of both the leader and follower (Scandura and Graen, 1984). In the most rudimentary sense, this model attempts to assess levels of mutual trust, respect, loyalty, and subordinate role clarity as independent variables to predict dependent output variables. Output variables of interest include levels of productivity, job attitude (i.e., subordinate satisfaction), performance (i.e., supervisor satisfaction), and perceptions the superior has of the subordinate and vice-versa.

Previous literature indicates that leaders and members' perceptions of LMX are correlated, and agreement between these parties strengthens over the length of their relationship (Gerstner et al. 1997; Sin et al. 2009). This agreement between leaders and members indicates a reciprocal tendency, especially when both parties are either pleased or displeased with each other. Further, this literature suggests that such reciprocal tendencies compound over time as individuals in relationships treat each other either kindly or poorly.

Much of the theory of intentionality intersects with that of attribution within the management literature. This is because intentionality and attribution refer to how an individual acts due to a perception that he or she forms of a certain external event. While these two dimensions seem to form two sides of the same coin, intentionality refers to assessing individuals' perceptions formed of an outside influence placed on them, while attribution refers to an internal influence on some sort of outcome. The theory of intentionality "hypothesizes that



a person's attitude toward an occurrence depends on an individual's perceptions of how that outcome is related to the occurrence of other "more or less preferred consequences." This theory is an early example of how organizations can benefit from creating a "reciprocating environment" (Graen 1969, 1). Attribution theory, however, states that positive performance is likely to be internalized by an individual and therefore increases the perception that one deserves reward as a consequence of satisfactory behavior. Attribution theory predicts that one does not attribute unsatisfactory outcomes, such as failure, to oneself. Therefore, individuals may not perceive that they deserve negative consequences that result from unsatisfactory outcomes. Equity theory predicts that individuals within relationships, such as subordinates and superiors, are motivated by the pursuit of fairness. These individuals will likely adjust their contributions until an acceptable level of equity is reached. Equity theory is a complementary theory to that of instrumentality (Dansereau, Cashman, Graen 1973). Both theories can be used to predict positive LMX relationships and costly turnover within an organization.

### **RECIPROCITY IN THE BEHAVIORAL ACCOUNTING LITERATURE**

Reciprocity is defined in this manuscript as the tendency to reward kind actions with kind actions and to punish unkind actions with unkind actions. Given this definition, this section outlines the theoretical dimensions that underlie varying facets of reciprocity explored in the behavioral accounting literature. Specifically, trust, distributional fairness, and intention tend to be the most pervasive theories used within the accounting literature to explain and describe how reciprocity dictates behavior. Following discussion of these three dimensions, I show that reciprocity plays an integral role in negotiation tactics. Table 1.1 shows a collection of works discussing general reciprocity in previous literature, and Figure 1 presents a visual representation

of the predicted relations between trust, distributional fairness, intention and sensitivity to reciprocity.

[Insert Figure 1 Here]

[Insert Table 1.1 Here]

### **Trust**

Bradach and Eccles (1989, 104) define trust as “a type of expectation that alleviates the fear that one's exchange partner will act opportunistically.” For cooperation between parties to exist, trust must be established so parties can exchange in an honest manner (Zaheer et al. 1998; Zaheer and Venkatraman 1995). Placed in the context of reciprocity, we expect that honesty begets a sense of trustworthiness, and dishonesty begets untrustworthiness (see Table 1.2). Similarly, showing trust is expected to beget honest responses, whereas showing distrust would elicit dishonest responses. In economic games, a balancing act is played between two parties in an exchange. Each party must decide how much to act in a manner that protects its interest from a purely economic perspective (e.g., each party must decide whether to show a lack of trust or act dishonestly as agency theory would predict). However, potentially negative repercussions could develop from overly protecting ones' economic interest if the other party decides to respond in kind. This response in kind is reciprocal behavior. Thus, there is a clear relation between trust and honest behavior in the context of reciprocal behavior.

Lewis and Weigert (1985, 970) state that “trust is characterized by a cognitive leap beyond the expectations that reason and experience alone would warrant.” Such an idea of trust is contrary to expected behavior stemming from classic economic agency theory, where an agent's utility is assumed to be based on pecuniary incentives (Pepper and Gore 2012).

Traditional forms of agency theory, however, do not encompass an individual's innate tendency

to behave honestly. Instead, under traditional agency theory, all individuals are primarily concerned with self-interest, with little, if any, regard for others. It would, therefore, be a “leap” for one party to expect that the other would act in a manner that required a sacrifice of wealth to benefit all individuals involved.

Studies such as Fehr et al. (1999) indicate that individuals show preferences for honesty, even when honesty is costly, which is in direct opposition to theories predicting that each player in an exchange acts only in a way to increase personal wealth if they have the means to do so. Thus, reciprocity can be how an individual acts to increase both parties’ utility. While this may sound counter-intuitive, we see the combination of the two schools of thought when we encounter studies such as Trivers (1971), which gives insight into “reciprocal altruism,” where first movers act in a way in which they expect to increase their economic utility through expected return of perceived altruistic behavior. In this sense, we are shown how reciprocity can be parsed out from pure altruism (i.e., acts of kindness where there is no expectation of return) in the sense that a return of equal or greater value is expected.

### *Prior Literature*

Evans, Hannan, Krishnan, and Moser (2001) is a seminal study in the behavioral/experimental accounting literature that laid the foundation for experimentation involving participative budgeting scenarios. In practice, organizations utilize participative budgeting to allow managers to act on private information for more efficient processes; however, it creates a possibility for managers to act opportunistically. In this experiment, Evans et al. (2001) draw from theories including trust, honesty, distributional fairness, and intention to lay the groundwork for subsequent behavioral accounting studies. Evans et al. (2001) find evidence consistent with the assertion that traditional economic agency theory does not fully explain

manager behavior. Specifically, in a trust contract scenario in which managers are able to take full economic advantage of private information they possess, participants showed honesty preferences, even in the absence of repercussions for acting in a dishonest manner. While explanations beyond preferences for honesty were not explicitly discussed, the study opened a door for future exploration utilizing this trust contract as a base control for experiments.

While behavioral results found by Evans could be classified as altruistic behavior, as there was no potential for another party to respond in kind, subsequent studies modified the Evans et al. (2001) setting to include strategic interaction (for a discussion of this literature, see Brink, Coats, and Rankin, 2018). In this setting, reciprocal behavior became possible. Specifically, negative reciprocal behavior could occur where a perceived lack of trust causes an increase in dishonest behavior. For example, subsequent studies (Antle and Eppen 1985) placed participants in hurdle contracts setting (i.e., they were restricted in that they only attained a certain percentage of the overall slack available). In these settings, the decision was no longer an entirely ethical dilemma regarding how much a subordinate was willing to keep. Rather, the implementation of a hurdle has been interpreted as a sign of negative trust shown by the superior enforcing it as a control. Because of this shift in focus from one of ethical consideration, subordinates under this control were shown to adjust their behavior to wealth-creating activity, rather than the previous trust scenario in which they showed greater levels of honesty in their reporting (Evans et al. 2001).

Rankin (2008) shows a stark effect of trust being given to a subordinate to report factually. It is shown that when there is an ethical dilemma, i.e., subordinates must confirm having reported honestly, the focus on honesty and the negative utility from acting otherwise is taken into consideration and affects their decision making. However, in a situation in which trust

is removed from subordinates, i.e., a scenario in which the superior has final authority, the focus on a potential ethical dilemma is removed from their decision in a way that causes them not to change their levels of honesty regardless of whether they must confirm that they acted honestly.

LMX literature suggests that reciprocal behavior also has a tendency to become magnified over time as negative actions are met with negative reactions, and positive actions are responded with positive reactions. Fisher, Pfeffer, Sprinkle and Williamson (2015) designed a trust game experiment in which a superior requested effort and the subordinate responded with a willingness to provide a certain level of effort. Higher expectations of effort were predicted to induce feelings of negative reciprocity, much like tightening a control. Because of this potential negative reaction from subordinates, the results indicated that superiors altered their strategies over time in a manner consistent with realizing that demanding too much effort would induce negative reciprocity. This is consistent with a strategy a manager would use to induce trust with subordinates. Subordinates responded to reduced effort demands with positive reciprocity in the form of higher levels of effort.

Building trust between employees can also be a determinate of organizational success. Coletti et al. (2005) found that control systems have the potential to induce cooperative behavior between employees. Even more interesting, Coletti found that while it was expected that external observations participants' cooperative behavior would be altered by the knowledge that participants were under the control to induce cooperation and would view positively cooperative behavior as less inherently trustworthy than would participants who cooperated without some outside control leading to such behavior, no significant difference was found. This implies that cooperation is viewed as an indication of trust whether it was influenced by an outside source or not.

While reciprocity can be easily identified in literature exploring interactions between parties in managerial accounting and auditing, applications in financial accounting are not, as accounting decisions are numerous and may not always be immediately identifiable. However, reciprocity is likely to have implications for responses to firm actions such as investor reactions to corporate social responsibility (CSR) (Kim et al.2012). Many companies are now expected to engage in CSR activity to build trust with their investors, often in the form of improving either the community in which they do business, the environment, or other forms of philanthropy<sup>1</sup>. If they do not engage in such activity, it is possible that the market will see this as a lack of trust-building and retaliate by lowering the perceived value of such firms. Further, reciprocity may play a role in describing how stakeholders respond to top management. For example, stakeholders may respond reciprocally to management engaging in underhanded activity or deception.

Another interaction in which we see trust and subsequent reciprocity at work is between top managers and analyst engagement. Analysts provide valuations of a company and estimates of future profitability. If this information is reliable, investors are able to trust analysts and return to them for continued forecasts (Brown et al. 2015). However, to keep a step ahead of their competition, analysts must garner information not yet available to the public. To do so, they must often curry favor from top management to obtain privately held information (Ke and Yu 2006). As a result, there is a potential for analysts' information to be subject to misrepresentation or bias. Typically, top managers' desire to either meet or beat expectations derived from analysts' forecasts through various means of manipulations through guidance (Ito et al. 1998; Richardson

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<sup>6</sup> “The distribution of wealth is a comparison of the wealth of various members or groups in a society”

<sup>7</sup> For the purpose of this manuscript wealth is defined as any utility increasing proxy, be it monetary, effort, or otherwise.

et al. 2004; Bartov et al. 2002; Matsumoto 2002; Kothari 2009). Analysts may wish to stay in favor with top management, and top managers may desire to keep a positive public financial image. As a result, a reciprocal relationship may be created in which top managers are more willing to share private information with those analysts who assist management in guiding the market in a way that is favorable in the public eye (Ho et al. 2018; Mayhew 2008; Westphal 2008). Further, top management may punish analysts who downgrade their firm's stock recommendations (Mayhew 2008; Westphal 2008). This reciprocal relationship between analysts and top management is so strong that it has even been shown that analysts will go so far as to "migrate" with a manager if they move to another firm (Brochet et al. 2010).<sup>2</sup> Table 1.2 shows a collection of works discussing the dimension of trust and its role in reciprocity previously researched.

[Insert Table 1.2 Here]

### **Distributional Fairness**

Distributional fairness, sometimes also referred to as distributive justice, is generally defined as the perception that participants within either a single or series of interactions show preference in creating an overall state of relative equality. Individuals often act in a manner that shows a preference for fairness in a distribution for various forms of utility, be it that of wealth, resources, or effort. This behavior is expected for participants on either side of the equilibrium scale; for example, individuals may give their wealth to others in an attempt to create a state of distributional equilibrium. Akerlof (1982), Akerlof and Yellen (1988, 1990), and Messick and Sentis (1983) indicate that preference for fairness is a construct independent of acts of fairness;

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<sup>8</sup> Dictator games commonly give a single individual power over the distribution of wealth in a way that they are initially endowed with a greater deal of wealth.

individuals may also use destructive acts to balance the scales. In other words, individuals' inclination for fairness is often counter to both their own preferences for wealth creation and those they are responding to, again indicating behavior contrary to traditional economic agency theory.

Literature shows that perceptions of distributional fairness can lead to reciprocal behavior. Rabin (1993), provides a tie between distributional fairness and reciprocity by demonstrating that individuals are more likely to engage in activities that restore a feeling of equilibrium depending on their state emotion. For example, if a company acts in a monopolistic manner, a consumer in the economy may be less likely to purchase services from that company (Fehr et al. 1998; Rabin 1993). Similarly, if union members feel they are being treated unfairly, they are more likely to go on strike to punish their employer. This is often true even if a strike entails the loss of current income for the employees (damaging their wealth), which contrasts with the expectation of wealth maximization from traditional economic theory. With these two examples, we see that individuals are likely to give up wealth to both help and harm others to restore equity.

### *Prior Literature*

A model utilized in Douthit and Stevens (2014) was designed to manipulate individuals' perceptions of distributional fairness. In this, a manipulation of the salience of distributional fairness (i.e., pay disparity between subordinate and superior) was either public or private information. For those in a manipulation in which the subordinate felt there was a lack of distributional fairness (i.e., the salience of disparity of income received by the subordinate compared to that of their superior), subordinates responded with lower levels of honesty in the form of increased budgetary slack during participative budgeting exchange rounds.



Contract designs between organizations and their employees also play an integral role in affecting reciprocity. In the sense of agency theory, organizations seek contract designs that take advantage of their specific market (Baiman 1982). More specifically, classic agency theory states that the goal of “optimal agency contracts” for an organization would be to “maximize firm profit, taking into account employees’ rationality and incentive compatibility constraints” (Kuang 2009, 2011). In this vein of research, however, optimal agency contracts are largely met with negative reciprocity from those offered such contracts. Further, while in scenarios of participative salary negotiation under an output-based contract, i.e., basing employees’ salary on the amount of additional utility provided to the organization, potential new employees are able to make a counteroffer for the rate they will be paid for their efforts. Clearly, superiors have more negotiating power than do subordinates, and this is met with feelings of negative reciprocity (Kuang 2011). Potentially worse, newly hired subordinates can be left with the perception that their negotiation ability was actually “pseudo participative” in that they never had any real say in the matter of their salary. Collectively, these perceptions are primarily due to the feeling of being sold short for the effort an individual has put forward (i.e., the company offering the minimum for the maximum effort requested). Therefore, organizations can be more effective when designing contracts that consider both financial and nonfinancial benefits/detriments caused by certain contract structures, such as costs of the actual salary and potential lower future employee efforts. Organizations could then utilize reciprocity-based contracts to increase subordinates’ subsequent level of effort, increasing firms’ overall profits. (Hannan 2005; Kuang 2009; Sprinkle 2003; Bonner et al. 2000).

Reciprocity has a considerable role in contract design related to individuals’ expectations that must be fulfilled. This sense of entitlement was shown previously where participants exhibit

higher levels of effort for higher wages, which is logical, however, the consideration of relative cost to additional input received by the organization was not initially considered. Therefore, the salience of the gift (additional wages) was shown to play an integral role in employees' sense of reciprocity and its true ability to affect an employee's output (Hannan, Kagel, and Moser 2002).

While a majority of the accounting literature on distributional fairness attends to interactions with is a direct exchange of wealth between individuals in the sense that as one party's wealth increases/decreases, the second party moves in the opposite direction, third parties (i.e., observers of behavior) are also found to be subject to distributional fairness preferences. Maas (2012), for example, shows that managers can act as third parties by allocating wealth between multiple employees. Because supplemental information gathering depletes managers' resources, they may be unlikely to seek additional information on individual employees' efforts toward a team's overall performance. However, Maas showed that managers are compelled to seek out costly information to ensure that employees' efforts are rewarded fairly. A potential implication of this is a manager's desire to increase each employee's efforts for improved future performance of the team.

In addition to an individual's innate sense of preference for distributional fairness, it has been shown that encouraging individuals to be mindful of fairness (causing a higher level of salience of such equilibrium) when brainstorming a bargaining strategy can increase the likelihood they will act in a cooperative manner. Maxwell et al. (1999) found that buyers who were encouraged to consider fairness in this manner responded by shifting the focus of their decision from themselves to what would potentially be fairer for the seller. In a later study (Maxwell et al. 2003), the seller in a similar negotiation failed to reciprocate fair behavior. In response, buyers responded with reduced levels of cooperation and seemingly vindictive

behavior. These studies illustrate that negative reciprocity can occur within interactions to the detriment of both parties when they do not act to maintain distributional fairness.

### *Direction for Future Research*

Contract settings seem of particular interest especially now (NLRA or the Act; 29 U.S.C. §§ 151-169 [Title 29, Chapter 7, Subchapter II, United States Code] Messina 2012). This salience of cross-distributional fairness could be of interest, as most of the research has been focused on that of the interaction between a manager and employee's compensation, control of compensation, negotiation, and saliency. However, utilizing a horizontal manipulation, i.e., between employees, especially in the form of saliency of the level of distributional fairness, may play on the effort levels of an employee. Table 1.3 shows a collection of works discussing notable research in the dimensionfield of distributional fairness and its role in reciprocity previously researched.

[Insert Table 1.3 Here]

### **Intention**

Intentionality “is the power of minds and mental states to be about, to represent, or to stand for, things, properties and states of affairs” (Jacob 2019). Intentionality indicates that organizations can benefit from creating a “reciprocating environment” (Graen 1969, 1). This, however, was not always considered the case. In the early 1990s, much of the economic literature asserted that, except true altruism, acts of selflessness do not have a logical place in predicting a player's behavior in economic games. If an individual engages in behavior that is beneficial to another individual without expected recourse of positive return or investment of either effort or wealth, that behavior largely departs from simple individual wealth creation expected in early economic theory (Rabin 1993).

Intention we see in literature as individuals' perception of activity, external from their locus of control that affects individuals' in either a positive (trust) or negative (distrust) light (Enzle and Anderson 1993). Because this is a matter of the individual's perception of the underlying reason behind another's activity, rather than objective reasoning, the salience of such activity and source becomes paramount as to how the outside action is perceived. For example, a company may implement a control over its employees to restrict certain behavior. If both are made aware of such an action (increased salience) and they can directly identify the source, as ,for example, originating from their superior, they may perceive this as a signal of lack of trust. This negative perception may, in turn, be responded to with negative reciprocity in which subordinates respond in kind with negative and potentially destructive behavior (Christ 2013).

### *Prior Literature*

A key to any organization's overall success rests in the ability of its members to cooperate to achieve the maximum output for all those involved. In seminal research, such as Nash Equilibrium scenarios, we see that the greatest output for all players is typically not in favor of an individual's maximum potential output. To nurture this cooperation, it has been found that trust is critical (Coletti et al. 2005; Zaheer et al. 1998; Zaheer and Venkatraman 1995). While managers are often tempted to relieve woes of agency issues by implementing controls, they must ensure that controls are implemented carefully to foster an environment of cooperation. In managerial accounting studies, we are tasked with exploring potential factors may change an individual's behavior in a way that is both cost-effective and psychologically effective (Christ 2008). One area in which this occurs is within formal controls that can be imposed by an overseeing element, such as an organization or individual in a superior role. Christ (2008) organizes these formal controls into three categories: "behavior," "output," and

“inspection.” “Behavior” represents a superior’s direct oversight of a worker’s activities.

“Output” focuses on how such controls affect performance measurements after a formal control has been put into place. Finally, “inspection” of the controls themselves deals primarily with accounting and financial reporting, as well as billing and asset security.

Behavior controls are input through direct surveillance of individuals’ activities. They are likely most relatable to experiments conducted in managerial accounting research, such as Christ (2013) and Christ and Vance (2017). In these studies, participants are subjected to varying levels of intrusiveness, primarily manipulated by the salience of the source of the control exogenous (i.e., the control’s origin is ambiguous) or endogenous (i.e., the control is directly imposed by a superior). In these studies, the expectation is that there will be incrementally larger negative reactions from subordinates as the level of intrusiveness or valence of control implemented by the superior increases.

Second, output controls are regularly examined in managerial research, particularly in participative budgeting where superiors are able to review subordinates’ performance and respond according to their performance assessments (largely measured by the effort given toward their task). Within this type of research, we see a variance in behavior of superiors who are given the ability to implement different methods of controls. Bonus contracts, such as those used in Christ (2012), encourage positive reciprocity and are effective for increasing measures of both cost benefit to the organization and psychological utility for the subordinate. Conversely, when managers are endowed with the ability to punish, subordinates tend to respond negatively. Thus, while the use of control instruments may be shown to be monetarily effective within some studies, Christ (2012) shows that there are cases in which subordinates’ psychological utility is lowered so significantly that it is a detriment to the firm’s success. Penalty contracts can be so

harmful to relationship qualities between managers and subordinates that subordinates go so far as to not only withhold effort to help but increase effort to punish the manager Christ (2018).

Several participative budgeting studies further explore these phenomena by utilizing various manipulations to elicit feelings of either negative or positive reciprocity that could be found in practical settings. In Christ (2013), reciprocity was manipulated by adjusting employees' beliefs about management's intentions signaled by the source of control imposed. When subordinates were able to identify the source of control as that of their direct superior, they perceived such constraints as a signal of lower trust imparted by their superiors. This, in turn, caused subordinates to respond with lower effort.

Largely, accounting literature suggests that implementing controls over subordinates lowers overall budgetary slack (Douthit and Stevens 2014; Schatzberg and Stevens 2008) (see Table 1.4). However, such controls have the potential to reframe the participative budgeting scenario from an ethical dilemma where they are primarily motivated by honesty to one of a strategic interaction where they may be motivated by pecuniary concerns (Brink et al. 2018). In the case of Rankin et al. (2008) for example, when subordinates have the final say in a negotiation and must give a confirmation that they have acted in an honest manner, slack is significantly decreased. However, slack is not shown to change from this ethical confirmation when the final authorization authority is given to their superior. Rankin et al. (2008) illustrate that controls may have unintended consequences.

Christ (2013) showed that when a superior imposes a direct control over a subordinate, the subordinate may respond with negative reciprocity. Specifically, if subordinates perceive that the control is directly implemented by their superior, they will likely perceive this as a signal of distrust and respond with negative reciprocity (costly/destructive behavior), whereas if the

control is ambiguous, they may not form this perception and not retaliate. In short, the social costs may not be worth the expected monetary benefits of the control particularly, if subordinates would act within a reasonable level of honesty in the absence of the formal control.

Intentions can also be gleaned from the context of the scenario setting. Choi (2013) demonstrated such contextual effects in an experimental setting where labor markets were manipulated to see if individuals' perceptions of a signing bonus when offered a contract were adjusted by the environment. More specifically it was sought if varying conditions could alter a potential new hires perception of a bonus offer as either that of an organization's gesture of good faith or simply necessity to attain a new hire. In instances of surplus labor markets (i.e., labor markets with an excess of jobseekers), individuals perceived a signing bonus as an act of good will and reciprocated with increased levels of effort. However, in labor markets with an excess of jobs positions, individuals felt entitled to such a reward and did not reciprocate with increased levels of effort.

### *Direction for Future Research*

Intention is a unique dimension of reciprocity in that it is a perception of an interaction between two parties and the underlying tone one believes another's actions imply. While at the root of much research we see that actions like implementing controls on an individual, for example, can cause an individual to feel negative reciprocity, it is possible that individual traits can cause individuals to have varying levels of sensitivity to reciprocity. For example, if an organization implements a control over an individual's processes, one who is sensitive to reciprocity may see this as indicating that the organization does not trust the individual and may respond in a destructive manner. However, an individual who is not sensitive to reciprocity may perceive this merely as an initiative for the organization to become more efficient for the overall

good of the company. Creating a measure to examine individual differences in sensitivity to reciprocity, then testing such manipulations previously used, may provide more insight regarding whether specific strategies of implementing such controls may be more effective than others.

Uncertainty is also an interesting aspect of intention of another's actions (Douthit & Stevens 2014, Brink, Green, and Kearney 2018). While ambiguous controls have a varying effect over employees, this is a point of interest of further research to properly vet the implication of controls utilized within an organization. Christ (2013) also demonstrates that the source of control can dictate the reaction, i.e., reciprocal behavior one responds with. Table 1.4 shows a collection of works discussing the dimension of intention and its role in reciprocity previously researched.

[Insert Table 1.4 Here]

### **Attribution**

Attribution theory has deep seeded roots in psychology history. Seminal work, such as Freud (1894) describes an individuals' ego and its ability to reject "unbearable ideas" that may serve as a negative affect to ones' self, more simply stated, individuals have the tendency to not have the ability to see objectively assess traits or events that cause them to feel as though they have faults. Langer (1975) introduced the theory of the "illusion of control" in which one attributes successes to their own action/abilities even in a scenario in which their success is determined entirely by chance. These two sides of the theoretical coin form the basic construct of attribution theory, in which an individual expects to attribute success to ones' own accord, and attribute a failure (i.e. stain on one's ego) to external sources, or at least to causes that are not of their own making.



When addressing the construct of attribution and its relation to reciprocity, it is likely most pertinent to explore ways in which attribution affects interpersonal relationships. Many early experiments show evidence for individuals largely possessing an “egocentric bias” in which they overly attribute their own contribution in a collaborative relationship when there is an overall successful outcome rather than a failure (Ross and Sicoly 1979; Thompson and Kelley 1981). This “egocentric bias” is often measured from the perspective of an individual’s ability to form an objective perspective on their individual contribution in relationship to the group level outcome. (Ross and Sicoly. 1979; Rather and Heskowitz 1977). Having this uneven sense of contribution towards success or failure causes individuals then to either believe that success is attributed to their ability (Langer 1975), and therefore would likely cause the individual to feel that they should either be recognized or rewarded for such. Conversely failure is not associated to their efforts but rather an outside source and they should not receive punishment (Bartling and Fishbacher 2011).

Attribution theory also takes a significant place in contractual agreements between parties in which individuals believe that they feel entitled to specific rewards. Individuals assume that their contributions lead to the group success, whether actual success arose from their own ability, or merely success of the organization as a whole. Additionally, on the negative end of the spectrum we see that individuals typically do not believe that they should receive punishment despite potential responsibility for failure (Harvey and Weary 1984; Christ, Sedatole, and Towry 2012; Smith 1759; Greenwald 1980). Table 1.5 shows a collection of works discussing the dimension of attribution and its role in reciprocity previously researched.

[Insert Table 1.5 Here]

### **Reciprocity and its Role in Negotiation**

Reciprocity plays a unique role in accounting literature where negotiation strategies must be evaluated for effectiveness. Audit literature is of particular interest, as auditors must negotiate revisions with clients in a manner that allows them to maintain professional integrity while retaining a client's favor. While Shaub (1996) conjectures that one of the primary dimensions of reciprocity (trust) is a "threat" to an auditors' independence, it has been shown that building a reciprocal relationship can be a tactic employed by auditors to reach a successful outcome while retaining professional integrity in the form of offering concessions and working collaboratively.

Early works have shown that specific negotiator style can create environments that are either conducive to cooperation or non-collaborative. Druckman (1967) illustrated that dyadic behavior has a substantial effect in situations of collective bargaining. Individuals predisposed to strategy before entering a bargaining situation are found to be more hardened in their resolve and therefore less likely to act as a collective. Conversely, individuals who engage in collective behavior, such as information sharing rather than competitive behavior, are more likely to be met with positive reciprocity in decision making, leading to a greater chance of concessions between parties (Putnam 1990).

### ***Prior Literature***

In the context of client-auditor negotiations, reciprocity plays a key role in determining concessions. While auditors, by nature, tend to be more conservative when making decisions, reciprocity takes hold when multiple subsequent accounting issues are brought to light throughout an audit engagement, a collection of previous works have been compiled in Table 1.6. (Gibbins et al. 2001). Reciprocity suggests that one party will make concessions when a second party acts in kind (Gouldner 1960). Therefore, resolutions on previous issues between the

client and auditor may affect their subsequent interactions (Hatfield and Mullis 2015; Gibbins et al. 2001). Due to the negotiation aspect of client-auditor relations, reciprocity may be a strategy for auditors to implement when attempting to reach resolutions that do not damage professionalism while maintaining positive relations with their client. For example, Sanchez et al. (2007) explored a “concession approach,” where they were able to show the effectiveness of a negotiation strategy in which the auditor made salient their concessions of inconsequential items found during the audit engagement. These concessions, in turn, created a perception of positive reciprocity between the auditor and the client which was returned by an increased likelihood of the client posting more significant income decreasing adjustments while at the same time preserving positive customer relations.

Research such as Hatfield and Mullis (2015) may be a fruitful stepping point to tie in with research involving investor reactions. Certainly, auditor concessions aid in more trustworthy decisions by investors where adjustments are not needed. This waterfall effect of auditor trust leading to investor trust would be an interval study that could improve the scope of not only accounting research but also finance and economics.

Collaborative actions are also found to be more likely to meet with concession (Pruitt and Carnevale 1993; Druckman 1967). Therefore, it is beneficial for auditors to take advantage of reciprocity-based strategies to more easily reach agreement during the negotiation phase of an audit engagement (Hatfield et al. 2008), especially where both parties have the tendency to feel a sense of a win-lose outcome, i.e., there are no outcomes possible in which both parties are able to mutually benefit (Putnam 1990). While this collaborative strategy has shown to effectively improve negotiations between clients and auditors, in a scenario in which a client acts in a

contentious (i.e., non-reciprocal) manner, an auditor's experience is able to mediate negotiations where reciprocity does not prevail (Fu et al. 2011).

Reciprocity-based audit negotiation strategies, such as the concession approach, seem to be a direct result of the regulatory environment created by SAS No. 89 (AICPA [1999]) and Sarbanes-Oxley, which allow for both concession and no-concession approaches to fall under compliant reporting. This indicates that regulators were able to see the benefits of creating an atmosphere in which auditors and clients could work in an environment which fosters positive reciprocity and subsequent cooperation in situations where auditors deem concession items to be inconsequential, while retaining the ability to preserve professional integrity.

While in many cases trust is seen as a catalyst for positive reciprocity, auditors must be vigilant regarding the potential for fraud. As relationships between auditors and clients lengthen over time, concerns arise as to auditors' ability to maintain professional skepticism (Kerler and Killough 2009). However, while auditors increase their levels of trust for their clients, this does not seem to affect an auditor's skepticism; further, auditors with increased experience and training are able to temper their levels of trust given to employees (Shaub 1996). Hatfield (2010) shows evidence of this in that previous concessions made by clients create feelings of reciprocity with their auditor, shaping the outcome of current-period negotiations tilting final decisions in favor of the client.

### ***Direction for Future Research***

Much of the research involving the role of reciprocity within negotiations involves experiments that employ a single-round decision. This may not fully reflect how reciprocity takes place during the relationship between an audit firm and its client, as many of these relationships last over many years. It may, therefore, be of interest to utilize a repeated-round

engagement to see the effects of time over the relationship. Not only could we examine whether engagement pairs become more collaborative or potentially contentious over engagements, also to what extent a relationship can be contentious before terminating the engagement. Another potential area of research could stem from auditor rotation rules. Potentially, a change from an auditor-client relation from one that is reciprocal in nature to one that is not could have adverse effects or vice-versa. Table 1.6 shows a collection of works discussing the dimension of reciprocity and its role in economic negotiation previously researched.

[Insert Table 1.6 Here]

### CONCLUSION

In each field of behavioral accounting research, we see that reciprocity is utilized in multiple fashions. Reciprocity could increase productivity, honesty, and trust as we see in management studies. Reciprocity is also a potentially useful tool for assisting in negotiations. Auditors are likely to foster positive reciprocity to complete their responsibilities better. However, reciprocity may have dangerous effects if used to facilitate practices that are not ethical or in the best interest of a firm's stakeholders, such as what might occur when auditors or managers allow so much trust that they are taken advantage of. While trust contracts in participative budgeting can potentially provide accurate and timely information, agency theory prevails to a certain extent, although individuals tend to not take advantage of private information. Likewise, while showing signs of trust is viewed as a detriment to auditors' independence, reciprocal behavior can allow them to better perform a successful audit engagement.

Because of these various interaction styles and implications dependent on each form of relationship, we must understand how reciprocity plays a role in the accounting literature. As

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highlighted throughout this paper, many unanswered questions remain. This paper serves as a spotlight of where we have been, where we are now, and where we need to reach toward for future research in reciprocity and its role in accounting literature.

**PAPER TWO: DEVELOPMENT OF A SCALE TO MEASURE SENSITIVITY TO  
RECIPROCITY**

**ABSTRACT**

The concept of “reciprocity” states that individuals will reward kind behaviors and punish unkind behaviors. This paper examines reciprocity as a multidimensional trait in which individuals possess varying levels of sensitivity. I hypothesize that reciprocity can be observed as a trait condition (stable throughout time) as well as a state condition (one that is enacted due to a momentary stimulus). Furthermore, individual dimensions of reciprocity are measurable and vary across individuals, and they may provide predictable behavioral responses. Prior accounting research has primarily focused on the overall effects of state-induced conditions through varying external influence. This dissertation attempts to develop a measure of reciprocity, using three behavioral dimensions: preferences for distributional fairness, perceptions of trust between parties, and perceptions of the intention underlying another’s actions.

I first developed a survey to measure an individual’s sensitivity to reciprocity by utilizing the three above dimensions underlying reciprocal actions. Multiple survey samples were used to create a final 14-item scale to measure an individual’s sensitivity to reciprocity. However, the fit indices for this model did not meet desired levels of goodness of fit. Further, this model did not exhibit predictive ability in an economic setting. I end this dissertation with a discussion of potential implications for future research and describe how this may open a conversation into furthering our understanding of the theory of reciprocity.

## **INTRODUCTION**

The concept of “reciprocity” states that individuals will reward kind behaviors and punish unkind behaviors (Falk and Fischbacher 2006). While reciprocity suggests that individuals evaluate kind actions, they also consider the underlying intentions of the action. Prior behavioral studies have observed reciprocity through the implementation of numerous manipulations, varying in both methodologies and theoretical underpinnings. Generally, these studies have attempted to explain the causes of positive or negative behavior between subordinates and superiors. Due to variations in the independent variables previously manipulated, it is possible to extend prior reciprocity research. I propose that due to various manipulations used, there is an inherent motivation to examine the effects of three major behavioral dimensions identified in prior reciprocal behavior studies within an accounting setting. Previous literature finds that varying levels of reciprocal reactions are dependent on the utilized experimental manipulations (Christ 2013; Fisher et al. 2015; Davidson 2013). This paper extends prior research by attempting to develop a measure of sensitivity to reciprocity, using three behavioral dimensions that may predict the strength of a behavior response. These dimensions include preferences for distributional fairness, perceptions of trust between parties, and perceptions of the intention underlying another’s actions. Therefore, I examine individuals’ varying levels of reciprocal response to interactions. These interactions often take place in principal-agent scenarios when an organization attempts to either control destructive behavior or induce positive behavior<sup>34</sup>. This

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<sup>3</sup> Principal agent scenarios occur when an agent makes decisions on behalf of their principal. It is expected that the agent will make decisions in the best interest of the principal. With inherent information asymmetry, agents are in the position of making decisions that benefit their own wealth at the detriment of the principal. Often these scenarios also use participant titles such as superior and subordinate, or manager and employee interchangeably.

<sup>4</sup> Often seen through dependent measures of levels of a subordinate’s effort or honesty, and a manager’s likelihood to impose a control.



study could become a useful tool for future experimentation dealing with reciprocal behavior, not only when examining new, unique experimental manipulations such as fairness, lack of trust, or perceived intention, but also, the potential for replicating previous studies to glean more information about participants' reactions.

An organization may run more efficiently when superiors are able to delegate decisions to their subordinates. A primary purpose of delegation is to take advantage of subordinates' ability to act swiftly and utilize their specialized knowledge due to the proximity to the decision. For example, when organizations use participative budgeting practices, where granular information is required, a subordinate's role may put them in a better position to make successful decisions (Rankin et al. 2008). These practices assume that the organization can place a reasonable level of trust in those making efficient local budget decisions. While the practice of participative budgeting aids many organizations, the potential for information asymmetry (information possessed by subordinates that is not readily available to their superior), allows subordinates to benefit by taking advantage of the potential information asymmetry (Dufwenberg and Kirchsteiger 2004; Stevens and Thevaranjan 2010; Pepper and Gore 2015).

While organizations and those in superior roles are widely known to implement controls as a measure to prevent a subordinate from engaging in devious behavior (Zimmerman 2006), previous literature finds tension when examining the overall benefits of controls (Christ 2013; Christ et al. 2008; Rankin et al. 2008; Coletti, Sedatol and Towry 2005). Additionally, a growing body of research has investigated potential detriments arising from subordinates acting on their perceptions of "why controls are implemented" and the "source of implementation." This perception of source and purpose can lead to a subordinate's feeling of either positive or negative reciprocity induced by a superior implementing controls (Falk and Kossel 2006; Christ et al.

2008). Prior reciprocity studies have shown that individuals respond to kind acts with kind behavior, and conversely, individuals respond to unkind acts with unkind behavior (Fisher et al. 2015; Fehr and Gächter 1998, 2000; Fehr, Ernst, and Gächter 2002). Under the concept of reciprocity, controls implemented by superiors intending to inhibit negative behavior may induce negative reactions from those who feel they are under scrutiny. For example, superiors may implement controls to limit subordinates' ability to report budget expectations in excess of actual predicted or known budget requirements (i.e., to limit budgetary slack).<sup>5</sup> Subordinates may perceive controls in this setting as the superior demonstrating a lack of trust. If so, subordinates may respond with destructive behaviors, such as an increase in dishonest activities or lack of effort (Christ 2013). One purpose of implementing controls is to reduce the monetary costs of subordinates' potential unethical behavior. Reciprocity considers the social costs arising from creating an environment where perception may create a caustic relationship between subordinates and organizations (Von Siemens 2013; Falk and Kossel 2006).

This paper examines different dimensions that create an individual's sensitivity to reciprocity, by categorizing subjects into specific types. In this study, sensitivity to reciprocity is defined as the magnitude of response to either positive or negative interactions between two parties. Previous literature suggests that three primary dimensions comprise an individual's reciprocal reactions: preferences for distributional fairness, perceptions of trust between parties, and perceptions of the intention underlying another's actions.<sup>6</sup> I use the three dimensions to develop a measurement scale for individuals' trait sensitivity to interactions that cause states of

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<sup>5</sup> Budgetary slack occurs within principle agent scenarios when the agent has access to private information which they can utilize to increase their retained wealth through the process of reporting budgets to allocate more assets to themselves at the detriment of the principle.

<sup>6</sup> Initially there were four dimensions identified, distributional fairness, trust, intention, and attribution. However, tests indicated that individuals have difficulty disentangling attribution from intention, therefore the final three dimensions of distributional fairness, trust, and intention were kept.

heightened reciprocity. The development of this scale begins by identifying manipulations used in previous studies that have effectively utilized the three key dimensions of reciprocity.

Manipulations used in previous studies are then adapted to develop survey questions. Items from two previously developed personality trait surveys relating to distributional fairness, trust, and intention are also used. These two sources lead to an initial list of 126 potential survey items.

I used a series of steps to reduce the initial set of 126 items into a more parsimonious scale by first engaging in a literature search, generating a sample of items, then purifying the measure (Churchill 1979; Watson and Clark 1995; Hurtt 2010; Ashton and Lee 2014; Watson and Clark 1999). Subsets of trait dimensions were developed using the three identified dimensions. The subsets allow the creation of a more manageable list of items to implement for initial testing. For example, within the dimension “intention,” four subsets come to focus, including anger, impulsiveness, reaction to control, and reaction to feedback. The items were checked to make certain that approximately an equal number of items represented each of subsets of the four original dimensions.

The process resulted in a reduced scale of 45 items. A doctoral-level group trained in behavioral studies pre-tested the refined list of 45 items. These individuals participated in a Q-sort survey through Qualtrics. The objective of the Q-sort exercise was to identify whether the participants perceived each item to be representative of the intended dimension and create a survey to deploy via MTurk for three subsequent factor analyses.

This study gathered data from a total of 478<sup>7</sup> participants, using Amazon Mechanical

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<sup>7</sup> This number excludes participants who were removed from the study due to not being within the U.S. or who attempted to participate twice. The information for exclusion was based on a review of IP addresses provided by Amazon Mechanical Turk.

Turk<sup>8</sup> (MTurk) in conjunction with Qualtrics. Exploratory factor analysis was conducted within two survey groups to bring an initial item list of 41 items, down to a reduced scale of 19 based factor loadings of items on each underlying dimension to confirm the validity of the reciprocity scale created. Finally, confirmatory factor analyses were conducted from a third MTurk recruitment to reduce the scale further to a final 14-item measure of sensitivity to reciprocity. However, the fit indices for this scale did not meet desired levels of goodness of fit. Further, this model did not exhibit predictive ability in an economic setting.

The measure of reciprocity developed in this study provides an initial step into developing a tool that allows one to measure individual differences of sensitivity to reciprocity. However, the results indicate that further work is needed to refine this measure. An increased understanding of reciprocity will also lead to practical implications, for example, organizations' ability to design effective controls that reduce subordinates' destructive reciprocal behaviors, such as budgetary slack or reduced levels of effort within the context of participative budgeting. Further, businesses may be able to take effective actions if they are able to take inventory of an individual's trait reciprocity. The values of an individual's inventory items and a subordinates' perception would allow companies to predict how controls affect an individual's reciprocity. For example, an organization may be able to examine individual traits and design a more effective incentive system. Prior literature indicates that individuals' response to a bonus offer may

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<sup>8</sup> While Amazon Mechanical Turk does have difficulties, crowdsourcing information has shown to be an effective method in lieu of traditional methods. Hunt (2015) has compiled a comprehensive roadmap to effectively deploy surveys that can be applicable for behavioral studies. Much of which garnered from studies assessing demographics and applicableness (Ipeirotis 2010; Ross, Zaldivar, Irani, and Tomlinson 2009; Paolacci et al. 2010; Berinsky, Huber, Lenz, 2012; Brandon, Long, Loras, Mueller-Phillips, Vansant 2013; Peer, Vosgerau, and Acquisti 2014; Peer et al. 2015; Horton, Rand, Zeckhauser 2011; Mason and Suri 2012; Winter and Suri 2012).

depend on their perception of the reason for the bonus. An organization may offer a bonus to be competitive, or with the company's intent to show goodwill toward employees (Choi 2014).

Further, additional research on the constructs underlying reciprocity will facilitate our ability to empirically tease apart varying explanations for observed behaviors. For example, if a superior's review is implemented in which the subordinate is under periodic scrutiny for their behavior, subordinates could perceive it differently based on their perceptions of the superior's intention. A subordinate who is not particularly sensitive to reciprocity may perceive the control as being implemented for the well-being of the organization, and its implementation is a necessary action the superior must undertake. Conversely, a subordinate who is highly sensitive to reciprocity, especially within the dimension of intention and trust, could perceive that control implementation indicates a lack of trust from the superior. In turn, the subordinate is likely to respond with destructive and or dishonest behavior. If both types of subordinates are present, the overall effectiveness of the control may be unclear without the ability to measure and control for individual differences in sensitivity to reciprocity.

### **DIMENSIONS OF RECIPROCITY**

To design a scale to measure reciprocity, we must first identify dimensions on which reciprocity is based (Churchill 1979; Clark and Watson 1998). While many behavioral accounting studies draw upon reciprocity to predict or explain observed behaviors, they often use other dimensions to explain or manipulate reciprocal effects. The key recurring dimensions that underline reciprocity are those of preferences for distributional fairness, trust between parties, and perceptions of the intention underlying the other party's actions (hereafter distributional fairness, trust, and intention). Reciprocity is not, however, singularly interchangeable with any of these three dimensions. Reciprocity is a response to these dimensions in various combinations,

rather than a purely altruistic or punitive behavior. Sensitivity to reciprocity is the magnitude of reciprocal response to an interaction between two parties. Given the intertwined nature of the dimensions of reciprocity, all three dimensions are utilized in this study to create a comprehensive measure. For example, subordinates may perceive that a superior's actions are an indication of negative intent and result in a lack of distributional fairness. They may reciprocate with negative behaviors. Reciprocity can also incorporate strategic adjustment of one's behavior due to others' anticipated response. For example, a superior may offer certain incentives strategically to encourage a positive reciprocal reaction from subordinates.

To develop this measure, I focus on the specific weights an individual places on the importance of distributional fairness, trust, and intention. Because of the Q-sort results outlined in a subsequent section of the measurement design, the fourth dimension, attribution, was removed for this study due to the inability to effectively parse out these items. The importance placed on each dimension allows for ex-ante predictions of differences in individual reactions to state-inducing interactions. Responses in the form of actions to these combined dimensions are key to reciprocity. Previous literature defines reciprocity as the expectation that individuals will reward kind behaviors and punish unkind behavior. In the following section, I summarize key examples of observed reciprocal interactions within each dimension. For each dimension, the expected responses of individuals with varying levels of sensitivity to that dimension are explained.

### **Distributional Fairness**

One dimension that underlies observed reciprocal actions is distributional fairness, which refers to an individual's propensity to feel discomfort due to a perceived lack of fairness between parties interacting with one another (Douthit and Stevens 2014; Fehr and Schmidt 1999; Bolton

and Ockenfels 2000). For contextualization in behavioral research, we can define distributional fairness more specifically as perceptions of distributed wealth among individuals within a community. When wealth is unevenly distributed, there is an increased likelihood that individuals reciprocate by acting in a manner that attempts to restore a sense of equilibrium (Dufwenberg and Kirchsteiger 2004). When individuals are in a position in which they have a great deal more wealth than another party, they may act to distribute a portion of their own wealth to the other party to restore a sense of balance (Ben-Ner 2004; Kagel and Roth 1995; Hoffman et al. 1994; Eckel and Grossman 1996; Bolton et al. 1998). Individuals typically do not take full advantage of self-interested opportunities arising from competitive markets, because maintaining equilibrium in markets benefits the overall wealth all parties (Fehr et al. 1998; Fehr et al. 1993). However, when individuals within an exchange are perceived to act overly opportunistically, other players tend to respond negatively. For example, individuals perceived to be acting opportunistically may receive punishment from those with whom they are interacting (Fehr and Gächter 2002; Fehr et al. 1997; Fehr, Ernst and Riedl 1993). Similarly, within the scope of market interactions, if a seller in a market acts in a monopolistic fashion, consumers will likely reciprocate by engaging in trade with players not acting in such an individual manner (Rabin 1993; Kahneman et al. 1986; Carnegie 1889), thus reducing the opportunistic seller's wealth, even to the detriment of the purchasers (usually in the form of higher costs).

Distributional fairness concerns also lead to a strategic adjustment of individuals' behavior due to the response they anticipate they will receive. Individuals tend to make decisions that do not distribute available excess wealth to themselves in participative budgeting settings (Evans et al. 2001; Brown et al. 2009; Young 1985; Waller 1988; Chow et al.). This behavior may occur when an individual engages in trade decisions as purchasers. In a brainstorming

bargaining strategy study, purchasers who are primed to consider the vendor's position adjust their behavior to favor distributional fairness. They act more cooperatively with vendors due to the increased saliency of both participants' outcomes (Maxwell et al. 1999). Additionally, when a vendor acts unfairly, purchasers respond with negative reciprocity in the form of uncooperative interactions (Maxwell et al. 2003).

The most profound effects from individuals reacting to deeds that promote distributional fairness, or lack thereof, is the relationship between superiors and subordinates. A key concept in this area is fairness of pay to subordinates. Akerlof and Yellen (1990) demonstrate distributional fairness in their fair wage-effort theory, which states that subordinates who are paid under a level they perceive to be a fair wage will respond negatively in the form of exerting lower levels of effort. This response can be interpreted as subordinates behaving in a manner they perceive as equalizing the wealth they provide to the organization in response to the wealth they receive.

### *Predicted Responses to Distributional Fairness*

Distributional fairness concerns indicate an individual's desire to act in a way that restores balance, or parity, between parties exchanging wealth (Akerlof 1982; Akerlof and Yellen 1988, 1990). High sensitivity to distributional fairness would be predictive of various types of behavior primarily dependent on the initially established equilibrium between the parties. First, individuals who possess high sensitivity to distributional fairness would be more willing to give up their own wealth if they believe others within an exchange are being given a lesser share. Conversely, the same individuals would be more likely to act in a way that punishes those within an exchange who are not behaving fairly, even if they sacrifice their own wealth (Fehr et al. 1998; Rabin 1993). If individuals possess a low sensitivity toward distributional fairness, we would expect behavior similar to that predicted under economic agency theory.



Specifically, individuals will put little consideration into what is fair when making decisions and will behave in a way that maximizes their own wealth. Figure 2 illustrates how individuals with varying levels of sensitivity to distributional fairness are expected to reciprocate to high and low levels of distributional fairness.

[Insert Figure 2 Here]

### Trust

Trust between parties is a second dimension underlying observed reciprocal actions. Bradach and Eccles (1989, 104) define trust as “a type of expectation that alleviates the fear that one's exchange partner will act opportunistically.” To illustrate how trust relates to reciprocity, we can examine an interaction between a superior and subordinate in a participative budgeting scenario. In this example, a superior may or may not demonstrate that he or she trusts a subordinate, and the subordinate reciprocates<sup>9</sup>. If a superior's actions indicate that he or she trusts the subordinate, a subordinate may respond in a reciprocal manner by acting with increased levels of honesty. This honesty benefits the superior. However, if the superior shows signs of distrust, many times in the form of implementing additional controls such as a hurdle contract, the subordinate may no longer view the decision as one of an ethical dilemma. This removes from the subordinate any inherent disutility felt by acting dishonestly (Evans 2001 et al.; Rankin et al. 2008)<sup>10</sup>.

In contrast, superiors may reciprocate with actions that demonstrate lower levels of trust when they perceive subordinates acting in a dishonest manner. Superiors may be willing to go so

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<sup>9</sup> Because honesty is generally utilized in accounting experiments as a dependent variable based on a trust manipulation, the focus of this dimension is trust.

<sup>10</sup> A hurdle contract is one utilized in participative budgeting that introduces a fixed limit on what a subordinate is able to submit project budgets for.

far as to forego their own wealth creation by rejecting a dishonest budget (Schatzberg and Stevens 2008). Superior and subordinate wealth generation is typically zero for both parties in the case of a rejected budget. Here, traditional economic theory would predict that the superior should accept all projects. Budget rejection, however, may be justified to punish dishonest behavior and prevent future acts of dishonesty (Rankin et al. 2008, Falk and Kosfeld 2006).

The misuse of private information occurs within participative budgeting scenarios where the subordinate has incentives to create budgetary slack. Budgetary slack occurs when a budget requests amounts greater than needed to attain an organization's goals. Budgetary slack increases subordinates' wealth while simultaneously reducing the wealth of the superior. Traditional economic theory predicts that a subordinate will create as much slack as they can to maximize their own wealth. An individual's actions are often consistent with preferences that include a utility for honesty (Brown et al. 2009). Evans et al. (2001), a seminal study, experimentally examined subordinates engaged within a trust contract where the organization gave full decision power to subordinates, while submitting budget reports based on private information. Under these conditions, negative repercussions are limited, even if subordinates acted in a self-interested manner, taking full advantage of the inherent information asymmetry to increase their wealth. Evans' (2001) results indicated that subordinates still acted in a partially honest fashion when trusted by the principal, despite the limited economic downside of acting dishonestly. One interpretation of these results is that the agents' actions were consistent with a demonstration of positive reciprocity in response to trust exhibited by the organization. Christ (2013) also documented that subordinates reciprocate with destructive behaviors to controls they perceive superiors implemented due to lack of trust. This behavior would occur even if the purpose of the controls was to improve reporting accuracy.

### *Predicted Responses to Trust*

If individuals in a position of trust by a superior have a positive predisposition toward trust, we would expect that, regardless of their ability to do so, they would not take advantage of a situation to increase their own wealth. This behavior contrasts with predictions made under traditional economic agency theory (Evans et al. 2001). If individuals are not trust-sensitive, we would expect that they would take actions to increase their own wealth, with little regard for the act of the principle fully entrusting them. Figure 3 illustrates how individuals reciprocate behavior with low to high levels of sensitivity to trust.

Choi (2014) additionally explores bonus offers within the dimension of trust in accounting literature. Choi examines whether a sign of goodwill is positively reciprocated, using context as a major prediction factor. Specifically, an employer offers a signing bonus to demonstrate its increased belief in trusting the employee. Choi finds the act of the employer conveying to the employee that there is an excess of available workers compounds the goodwill context. Choi demonstrates that the employer does not necessarily need to offer a bonus to entice a new hire to accept its offer.

[Insert Figure 3 Here]

### **Intention**

A third dimension underlying observed reciprocal actions is the perceived intention underlying the other party's actions. Intention is an individual's perception of the reason for another party's actions (Falk and Kosfield 2006; Falk and Fischbacher 2006; Rabin 1993; Dufwenberg and Kirchsteiger 2004, Blout 1995; Falk et al. 2000, 2003; Charness 2004; Charness and Rabin 2002). Without an individual's perception of a second party's intention, there would be little basis for a reciprocal action to take place. Simply put, if an individual believes that a

person acts toward them with neither positive nor ill intention, the individual would perceive the act as innocuous. Reciprocation would neither be positive nor negative behavior without context altering the perceived act. Intention may overlap with the other dimensions discussed in prior sections, as the perception may be that the underlying intention was to indicate trust or distrust (Falk and Kosfield 2006; Falk and Fischbacher 2006), or it may be that the perceived intent is to create distributional fairness.

The relation between intention and reciprocal actions is demonstrated in the behavioral accounting literature primarily in cases of participative budgeting where a superior is able to impose control over a subordinate. Christ (2013), discussed briefly in the prior section, observed that subordinate reactions to a control implementation are contingent on the perceived intentions underlying that implementation. She examined whether subordinates perceive the control as intentionally implemented due to a superior's lack of trust. Christ reports negative reciprocity is more likely to occur than if such perceived intention is absent. Economic studies also examine individuals' ability to manipulate perceived intention to increase their wealth. For example, Rabin (1993) finds that suppliers can act in a non-self-serving manner to induce positive reciprocal behavior from purchasers, thereby increasing their return of wealth. This study indicates that anticipation of potential negative reciprocity has the ability to direct individuals' decisions.

Intentionality also influences reciprocal actions in response to employment contracts. A new hire's subsequent effort and likelihood to accept a job offer may be a reciprocal response to the perceived intention of the employer in creating certain aspects of the employment contract. Choi (2014) examines whether the perception of a bonus was an intentional signal of trust or merely a tactic to entice potential new hires to accept a job offer. In the scenario introduced by

Choi, both the perception of another's motives (i.e., intention) and an individual's perception of self-worth and deservedness of a bonus contract (i.e., attribution) are involved in determining the reciprocal action<sup>11</sup>. Individuals who perceived a potential bonus offer as an intentional signal of trust were more likely to exhibit higher levels of effort once the position was accepted than those who believed it was a necessity for the employer to obtain a new hire.

### *Predicted Responses for to Intention*

Christ (2013) examined individuals' increased sensitivity to intention (i.e., a predisposition that intensifies reactions dependent on a perceived intention from another), where activities could be perceived to contain negative connotations. In the presence of negative connotations (i.e., a direct control put in place by a superior acting in a self-serving manner), individuals should act in a far more destructive manner than with activities that are ambiguous or indirect (Christ 2013). Conversely, if individuals have lower sensitivity to intention (i.e., a predisposition that lessens reactions dependent on a perceived intention from another), they should be less likely to exhibit reciprocal behavior. Figure 4 illustrates how individuals with varying levels of sensitivity to intention are expected to respond to acts perceived to be positive or negative<sup>12</sup>.

[Insert Figure 4 Here]

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<sup>11</sup> Intention and attribution (see figure 5) are often closely related in this research. As such, attribution theory had been explored as a possible fourth dimension for the reciprocity measure developed in this study. However, pilot study results indicated that individuals found it hard to distinguish between intention and attribution items. Therefore, I focus on intention in this study and discuss potential follow up investigations to examine whether or not these two dimensions are able to be fully disentangled within the context of reciprocity.

<sup>12</sup> This perception is manipulated by adjusting the new hire market as being either scarce or inflated.

## SCALE DEVELOPMENT

### Developing an Initial Item Pool

Once the dimensions underlying reciprocity have been defined, Churchill (1979) and Clark and Watson (1995) suggest collecting an initial pool of items to measure the dimensions by utilizing previous measures of similar or identical dimension traits. Building upon procedures described by Churchill (see Figure 6), I compiled an initial collection of 126 items (see Table 3). Each was formatted into a five-point Likert scale, ranging from one, “strongly disagree,” to five, “strongly agree.” The compiled items indicate either an increase or decrease in sensitivity to one of the three previously outlined dimensions: distributional fairness, trust, or intention. Of these 126 items, 48 were adapted from the HEXACO-PI-R scale, (Ashton and De Vries 2014). This scale measures various personality traits, many of which parallel the three dimensions chosen for this measurement development.<sup>13</sup> An examination of previously validated definitions, manipulations, and measures from prior accounting studies identified 78 additional items. Reciprocal behaviors such as control implementation, participative budgeting, and contract negotiation are directly related to these items.<sup>14</sup> Specifically, the following studies were identified and used to create items for this scale: Christ (2013), Choi (2014), Douthit and Stevens (2015), Schatzberg and Stevens (2008), Fisher et al. (2015), Linderbaum and Levey (2010), Ke and Yu (2006), Ho et. al. (2018), Evans et al. (2001), Douthit (2017), Lowe and Recker (1994),

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<sup>13</sup> This design is similar to the design in Peer et. al 2014, which tests multiple measures on Amazon Mechanical Turk including the “Ten-Item Personality Inventory (TIPI; Gosling, Rentfrow, & Swann, 2003), Rosenberg’s 10-item Self-Esteem Scale (RSES; Rosenberg, 1979), the short, 18-item form of the Need for Cognition scale (NFC; Cacioppo, Petty, & Feng Kao, 1984), and the short, 10-item form of the Social Desirability Scale (SDS; Fischer & Fick, 1993).” The goal of which was to confirm data sufficiency from participant reputations.

<sup>14</sup> These are amongst those that are most affected by reciprocal actions (see the literature review portion of this dissertation for more discussion on this issue).

Fehr and Hatcher (1993).<sup>15</sup> Table 2 identifies definitions provided by these studies for the three primary dimensions and indicates the studies used to develop items for each dimension.

[Insert Table 2 Here]

[Insert Table 3 Here]

[Insert Figure 6 Here]

I first identified relevant items and key measures used in prior studies. Next, I converted the identified items into the format necessary to develop this study's reciprocity scale. For example, Christ (2013) manipulated the saliency of a control to direct the subordinate's attention to the source of the control, and implemented at three levels, endogenous (direct), exogenous (indirect), and uncertain. The study found that participants who were able to directly link the control to their superior felt the control to be a signal of distrust and reciprocated with lower levels of effort. To convert this manipulation to a scale item, I have operationalized it with a question, such as "I am likely to exert less' (more) effort under circumstances in which process controls are (are not) explicitly outlined by my direct superior." Each item is coded according to the underlying dimension being manipulated by the study (e.g., intention) and the relevant dependent variables expected to be affected in the study (e.g., effort and trust). Further, where possible, I have noted possible language variations such as "less/more" and "are/are not" (as in the above example). This results in two separate potential questions, one stated positively, and one stated negatively, enabling the use of reverse scoring to both increase the pool of available

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<sup>15</sup> To determine whether each study was appropriate for inclusion, journal rankings are considered based on Brigham Young University (BYU) and Scimago Journal & Country Rank. These rankings examine where the specific experiment was published, or if one of the contributing authors has previously published in a higher tier journal (<http://www.scimagojr.com>).

questions and protect from the possibility of dimension under-representation, a key threat to validity (Hurt 2010; Messick 1995)<sup>16</sup>.

Several questions were developed to ensure items were not directionally ambiguous. These questions addressed the same underlying research question in more direct terms. For example, some items were adapted from Linderbaum and Levey (2010). One of the original items was “I feel self-assured when dealing with feedback.” This item measures intention regarding how one assesses feedback for their efforts but lacks directional clarity for measuring positive or negative reciprocity. Therefore, this item was adjusted as follows: “I feel self-assured when dealing with negative feedback.” The modified item allows for a better assessment of a dimension of intention (Sicol and Ross 1977; Ross and Sicol 1979). Those who are sensitive to such a measure are more likely to disavow negative feedback as it conflicts with their perception of self-assurance.

### **Refining the Pool of Potential Items**

To test my initial pool of questions for content validity, I reviewed my initial scale with an expert well established in participative budgeting from Virginia Commonwealth University, similar to DeVellis (2016). The reviewed examined clarity and redundancy between the items and assessed their efficiency. The goal was to reduce the initial pool of 126 questions to a more manageable size for future experimental study (Hurt 2010). To do so, the questions were separated into four groups based on their underlying dimensions: distributional fairness, trust, intention, and attribution. Items were first paired down by removing questions that showed redundancies to a shorter list of 80 (20 items per dimension). I then analyzed the text of items

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<sup>16</sup> Whether the items are positive or negative, stronger responses still indicate an increased sensitivity to reciprocity because reciprocity acts as a duality in regards to the behavior it can incite refining



within these dimensions for recurring themes within each dimension group, this provided two to five unique underlying themes within each dimension which further removed redundancies. For example, within the dimension of intention, the common underlying themes in the items were found to be four, including anger, impulsiveness, controls, and feedback. To make certain that each of these underlying themes were properly represented, two to three questions from each theme was chosen. This process resulted in a reduced pool of 45 items (14 for ‘trust’, 10 for ‘distributional fairness’, 10 for ‘intention’, and 11 for ‘attribution’).<sup>17</sup> The writing for most of the items was at a 7<sup>th</sup>-9<sup>th</sup> grade level per the Agency for Healthcare Research and Quality’s specifications (ahrq.gov). The items average nine words each, and approximately half of these items will be reverse-coded. Table 4 lists these items along with their intended primary dimension.

The relation between the pool of 45 items and the underlying dimensions was then assessed using a Q-sort function deployed through Qualtrics. This initial examination uses Q-sort as it provides “the extent of agreement among people in the way in which concepts are employed can be assessed” (Block 1961). I asked a panel of individuals consisting of professors, graduate students, and undergraduate students from various universities to complete the Q-sort task. Participants were given brief definitions of the four dimensions included in Q-sort to ensure that they used the same base definitions.

[Insert Table 4 Here]

To confirm that these definitions were clear, words potentially above an elementary level were hyperlinked to a Merriam-Webster Dictionary that provides either a direct definition or a

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<sup>17</sup> Up to this point the study still utilized four dimensions: distributional fairness, trust, intention, and attribution.

synonym. The panel was tasked with sorting the 45 items (appearing in random order for each participant) into each of the four dimensions. I assessed the clarity of the match between the individual items and the intended underlying dimensions after the exercise was completed by the participants whom were recruited for the task. The number of clicks each individual made was tracked by coding the Qualtrics instrument. Analyzing the number of clicks provides information about any terms that are potentially confusing to participants. Once complete, Q-sort statistics indicated items for which there was most consensus from participants in identifying the underlying dimension.

Using Q-sort data, I analyzed the 45 items to identifying which items best represent each of the underlying dimensions.<sup>18</sup> All items were examined to determine if they had high levels of participants' agreement, indicating that the item captured the intended dimension. The results indicated cross overs between multiple items that were intended to represent attribution and the dimensions of intention and distributional fairness. After reviewing these items, it was determined that questions created with the intent to capture attribution either had insufficient agreement between participants or loaded more heavily on other dimensions. Therefore, attribution was removed entirely. The initial pool of 126 items was revisited, and an additional 5 items that were both clear and closely followed the themes found within the remaining three dimensions were added. Specifically, two items were added to capture the dimension of trust, and two items were added for the dimension of distributional fairness. This adjustment to the scale resulted in a scale of 41 items<sup>19</sup>.

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<sup>18</sup> For comparison, the professional skepticism scale developed by Hurtt (2010) consists of 32 items.

<sup>19</sup> 45-11 items removed for attribution, and 5 additional chosen from the previous pool of 126.

### Testing the Reduced Scale

The development of the scale using MTurk was conducted in three phases. Each phase is described in detail in the following sections.

#### *First Phase of Scale Development*

I administered the reduced 41 item scale using Qualtrics deployed through Amazon Mechanical Turk (MTurk). The increasing use of MTurk has provided a rich source of survey data from experimental participants for studies in the accounting literature (Farrell et al. 2016; Koonce et al. 2015; Rennekamp 2012). Additionally, MTurk is an efficient method to obtain sufficient responses when using various factor analysis methods. This is true when using a specific population such as accounting professionals or non-specialized populations that may be required when developing general trait measures.

Prior literature indicates that four observations are required per item to obtain a sample sufficient to have adequate power for factor analysis (Fabrigar et al. 1999). Thus, 41 items x 4 observations result in a minimum participant pool of 164 individuals. Survey items were presented with five-point Likert-type response, ranging from one indicating “strongly disagree,” to five indicating “strongly agree.” As some observations were found to be of poor quality, 180 individuals were recruited from MTurk (Hunt 2015).<sup>20</sup> Participants were offered \$1.00 to complete the 41-item scale. This payment ensured that I attracted a proper amount of “engaged” individuals. As the scale should take less than five minutes to complete, this pay rate exceeds Amazon’s suggested rate of \$6/hour (\$1 for 10 minutes) for US workers (Amazon 2011; Hunt 2015).

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<sup>20</sup> Approval for recruiting participants through MTurk for all three factor analyses and student experiments were approved through VCU’s Office of Research and Innovation IRB review panel (see Appendix 2 and 3).

Within the MTurk task, no personal data was collected.<sup>21</sup> I requested that participants only consist of individuals within the U.S. to ensure that there weren't major cultural differences among participants which could skew responses further than intended.<sup>22</sup> Within the survey two questions were inserted at random points to confirm that participants were fluent in English.

These questions were posed as follows:

"Please complete this sentence

"I haven't got..."

- no brothers or sisters.
- brothers or sisters.
- any brothers or sisters.
- some brothers and sisters.

Please select the correct phrase

- Always he arrives at 2:30
- He arrives at always 2:30
- He always arrives at 2:30
- He always at 2:30 arrives

To ensure that the participants were engaged, two screening questions were embedded within the survey to test whether individuals are mindful of their responses. These questions instructed participants to “Please select ‘Neither agree nor disagree’” and “Please select the answer ‘Green’”. The inclusion of these questions brought the total number of questions for the survey to 45. Qualtrics was programmed to randomize the order of the individual items for participants to avoid the potential for the data being skewed by order effects that might occur if all participants saw the items in the same order. Basic demographic questions were asked at the end of the instrument (i.e., gender, age, and education).

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<sup>21</sup> Unless specifically requested, participants' personal information is not provided to individuals collecting data via MTurk. Additional information on MTurk workers' information security can be found at [https://www.amazon.com/gp/help/customer/display.html/ref=footer\\_privacy?ie=UTF8&nodeId=468496](https://www.amazon.com/gp/help/customer/display.html/ref=footer_privacy?ie=UTF8&nodeId=468496).

<sup>22</sup> A number of participants outside of the U.S. were able to participate despite the requirement that participants be a native to the U.S.. All non-U.S. respondents were removed by locating each responder's IP address to confirm their location. Additionally, because each request for recruits were issued in batches of nine (additional fees are charged by MTurk for requests over nine participants) there was a potential for participants to participate in multiple batches, therefore any individuals who did so were also removed from the pool.

After the survey data was collected, I examined responses using an exploratory factor analysis (EFA) utilizing maximum likelihood factor extraction including oblique rotation (Fabrigar et al. 1999; Linderbaum and Levey 2010). EFA is used primarily as it allows items to load on multiple factors. The three dimensions underlying the items are expected to build towards an overarching theory of reciprocity. Therefore, I expected the factors to be related, but it was necessary to examine whether items cross-loaded too heavily. The analysis was performed in RStudio.<sup>23</sup> Because this study is intended to examine potential differences in individual sensitivities to reciprocity, this initial EFA extracted three factors. Also, EFA results indicated whether any individual items appeared to have secondary loadings (Linderbaum and Levey 2010). It is anticipated that the primary item loadings within the three individual dimensions will likely overlap, as they share some similarities. Table 5 shows factor loading results. This first EFA was examined to identify items that loaded well on a primary dimension ( $> 0.5$  factor loading) with no secondary loadings  $> 0.3$  on any secondary dimensions (Riggio et al. 2010; Brown 2005).<sup>24</sup>

From this analysis, a fourth dimension appeared.<sup>25</sup> Upon review of the five items that loaded on this fourth dimension, the of length of a relationship between individuals was a common theme. As this construct was not part of the initial design, these five items were removed and a second EFA was conducted with the remaining 36 items (Osborne and Fitzpatrick 2012). Osborne and Fitzpatrick (2012) also suggests examining exploratory factor analyses in

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<sup>23</sup> R was utilized initially due to its ability to run both Exploratory Factor Analysis and Confirmatory Factor Analysis. All subsequent data analysis was developed via IBM SPSS.

<sup>24</sup> For this initial analysis all items that loaded well on the original 3 factors were kept, leaving 36 items for the secondary EFA to be conducted.

<sup>25</sup> Analysis was done with RStudio to test for fit of a 4 factor, 3 factor, 2 factor and 1 factor model. Through this a fourth dimension emerged.

multiple forms, specifically allowing the EFA to take on varying numbers of factor loadings.

Appendix 1 presents the initial instrument used in MTurk.<sup>26</sup>

[Insert Table 5 Here]

### ***Second Phase of Scale Development***

A second data collection using Qualtrics deployed through MTurk was conducted with the reduced scale of 36 items reduced scale. After removing any responses outside the U.S. and potential duplicate entries, the final respondents totaled 144. This number of participants fulfilled the previously stated requirement of four observations per item ( $4 \times 36 = 144$ ). I again examined the results using an EFA utilizing an oblique rotation. I selected all items that loaded well on a primary dimension ( $> 0.5$  factor loading) with no secondary loadings  $> 0.3$  on any secondary dimensions, and all other items were removed. This resulted in a further reduced scale of 19 items.

### ***Third Phase of Scale Development***

Finally, I collected data a third time deploying a Qualtrics survey through MTurk, using the new reduced 19 item scale. Marsh, Hau, Balla, and Grayson (1998) state that for a three-dimension measure an estimated pool of 100 to 125 participants is sufficient. Consistent with this guidance, I was left with a pool of 168 participants after removing any data that was unusable. I conducted a confirmatory factor analysis on the resulting data. Initially, a three-factor model was estimated to reflect the dimensions of “Trust” “Distributional Fairness” and “Intention”. This analysis produced alpha values of 0.909, 0.582, and 0.587, respectively, as shown in Table 6.

[Insert Table 6 Here]

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<sup>26</sup> All iterations of the MTurk surveys were identical in form, but the second and third surveys contained fewer items due to item removal based on the exploratory factor analyses.

Given the poor fit statistics for the three-factor model ( $X^2 = 413.886$ ,  $p < 0.001$ , CFI = 0.757, TLI = 0.719, RMSEA = 0.113 SRMR = 0.095) (see Table 6), a secondary confirmatory factor analysis was conducted with a two-factor model. This model returned two factors consisting of 14 items that aligned closely to the dimensions of “Trust” and “Distributional Fairness” constructs, with alphas of 0.923 and 0.652, respectively (see Table 7) . Further, estimation for the two-factor analysis resulted in the following values:  $X^2 = 305.528$ ,  $p < 0.001$ , CFI = 0.807, TLI = 0.768, RMSEA = 0.134 SRMR = 0.087. These indices are below the recommended level for a sufficient fit (e.g., Bagozzi and Yi 1988; Browne and Cudeck, 1992; Riggio, et al. 2010). Thus, these results suggest that these items did not result in a multi-factor model with adequate fit to represent sensitivity to reciprocity. However, the 14-item two-factor model is slightly better than the anticipated three-factor model in terms of alphas and fit. Analyses with the two-factor model and with each dimension individually are examined in conjunction with a laboratory experiment, as described in the next section. A single dimension model was analyzed using both “Trust” and “Distributional Fairness” independently and neither of which showed strong results, returning values of :  $X^2 = 151.37$ ,  $p < 0.001$ , CFI = 0.863, TLI = 0.808, RMSEA = 0.198 SRMR = 0.060 and  $X^2 = 149.11$ ,  $p < 0.001$ , CFI = 0.975, TLI = 0.959, RMSEA = 0.047 SRMR = 0.044 respectively.

[Insert Table 7 Here]

[Insert Table 8 Here]

### **EXPERIMENT UTILIZING SENSITIVITY TO RECIPROCITY SCALE**

I conducted further analyses in tandem with a previously validated experimental setting designed to elicit reciprocal behaviors. Participants were students recruited from the Experimental Laboratory for Economics and Business Research (ELEBR) volunteer database at

Virginia Commonwealth University. Invitations to participate in the experiment were sent through the ELEBR participant database. Volunteers signed up to complete an online survey, followed by an experimental session at the ELEBR computer lab. Prior to participating in the laboratory experiment, each participant was sent a link to complete the reciprocity measure via Qualtrics. Once they completed the reciprocity measure, they were provided a randomly generated participant ID number. This ID was required for participation in the following lab experiment.

### Lab Experiment

Z-Tree software was used to conduct the laboratory experiment based on the economic trust game designed by Berg et al. (1995). In this game, individuals rarely act entirely selfishly and often act in a reciprocal manner. The game examines two aspects of reciprocity, the anticipation of a first mover's expectations of potential reciprocal behavior and the subsequent action taken by a second mover. This design, therefore, facilitates a test of the reciprocity scale's ability to predict and explain individual differences in reciprocal behaviors.

Participants responded to understanding checks to ensure they are aware of rules guiding the experiment throughout the instructions. Participants were instructed that the game was a one-round economic exchange and their decisions directly affected another's earnings within the room to emphasize the impact of their decision. At the beginning of the experiment, participants were assigned one of two roles: Employee or manager,<sup>27</sup> participants in each role are paired randomly and anonymously with a participant in the other role. The Berg et al. (1995) economic

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<sup>27</sup> Originally in this experimental design by Berg et al. (1995), individuals were denoted simply by whether they were in room A (first decision maker) or room B (second decision maker), other previous research has referred to participants as either player 1 and player 2. For the purpose of this study we contextualize the participants as either employee or manager respectively.



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trust game employs two stages. First, the manager receives an initial endowment of \$10 and decides whether to transfer an amount ( $X_1$ ) to their manager. The amount transferred from the employee to the manager is tripled ( $3X_1$ ). Therefore, if the employee transfers \$3 of their endowment, the manager will receive  $3 \times \$3 = \$9$ . In stage two, the manager receives information about how much of the initial endowment from their employee transferred and the tripled amount based on this transfer. The manager then decides whether to send an amount back to their employee ( $X_2$ ). Once the manager makes their decision, both participants receive information about all decisions and their earnings from their decisions. In addition to their earnings, all participants receive a \$5 show-up fee.

Payment calculations:

$$\text{Employee payout} = \$5 - X_1 + X_2$$

$$\text{Manager payout} = \$5 + 3X_1 - X_2$$

The experiment was as a one-shot interaction. After answering post-experimental questions, each participant was paid in cash. Appendix 4 presents screenshots of the experiment implemented in the lab setting.

### Tests of the Reciprocity Measure

I examined 14-item, two-factor sensitivity to reciprocity model to see if it was useful in predicting and explaining decisions made by the laboratory experiment participants. Participants completed this 14-item measure remotely via Qualtrics before the laboratory session and as part of the exit questionnaire at the conclusion of the laboratory session. After aggregating scores from both the pre-experiment survey, and post-experiment survey, I calculated a scaled score for all participants measuring from 1 representing low sensitivity to reciprocity, to 5 representing high sensitivity to reciprocity. Both a continuous measure and a 50/50 median split were used in

subsequent analyses to designate participants as either having high or low sensitivities to reciprocity.

Those in the employee role with high sensitivities to reciprocity are expected to anticipate the reciprocal response of their manager. In turn, employees who anticipate reciprocal actions are likely to transfer higher levels of their endowment with the expectation that this will increase the entire pool of wealth, and that manager will reciprocate with a return transfer. Conversely, Employees who do not anticipate reciprocal actions are less likely to expect their manager to respond in kind to any transfer on their part. This leads to the following hypotheses:

**H1a:** Employees with higher measures of sensitivity to reciprocity will be more likely to anticipate reciprocal actions when forming their decision to transfer a portion of their endowment to their managers, as compared to employees who are less sensitive to reciprocity.

**H1b:** Employees with higher measures of sensitivity to reciprocity will be more likely to transfer a higher level of their initial endowment to managers than those who are less sensitive.

Expected transfers from managers vary in their demonstrated reciprocity in response to the transfers received from their employees according to their measured sensitivity to reciprocity. I expect a positive relation between the return transfers from managers and the amount transferred from their employees. Furthermore, I expect managers who are more sensitive to reciprocity will return a higher (lower) ratio in response to higher (lower) employee transfers than managers who are less sensitive to reciprocity. This leads to the following hypotheses, which are summarized in Figure 7:

**H2a:** Managers who receive a higher level of transfer from their employees will return a higher ratio of wealth than those who receive lower levels of transfer.

**H2b:** Managers who have higher measures of sensitivity to reciprocity and receive a larger portion of their employee’s endowment will transfer a higher ratio than all other exchange scenarios.

**H2c:** Managers who have high measures of sensitivity to reciprocity and receive a low portion of their employee’s endowment will transfer a lower ratio than all other exchange scenarios.

[Insert Figure 7 Here]

### **Independent Variables**

Once all survey data was collected, all participants were given an aggregate measure of their overall sensitivity to reciprocity on a 1 to 5 point scale ranging from 1 indicating low sensitivity to 5 indicating highly sensitive. For H1a and H1b this continuous measure from 1-5 was utilized for all participants who were designated as employees. For H2a, H2b, and H2c all participants that were designated as managers were grouped into two categories dependent on their scores from the sensitivity survey. Participants were assessed to belong to one of two ‘sensitivity to reciprocity’ levels based on a 50/50 median split, and were titled as “highly sensitive” or “less sensitive”.

The second independent variable measures the amount of endowment employees transferred to their managers (X1). The employee’s decision of how much of their endowment sent to the manager (\$0.00 - \$10.00) was used to create a 50/50 median split between employees whom were then deemed to either have sent a “high” or “low” amount of their endowment. This independent variable was utilized for the analysis of H2a.

### **Dependent Variables**

The first dependent variable was provided by employee’s response to questions about their anticipation of their manager’s response, and how this anticipated response influenced their

transfer decision. The responses to these questions were based on a continuous 1 to 5 scale used to test H1a. Specifically, employees and managers responded to the two following questions:

- 1.) How important was your manager's return transfer in making your transfer decision?  
Not at all Important  
Very Unimportant  
Neither Important nor Unimportant  
Very Important  
Extremely Important  
I was not assigned to be an employee
- 2.) How important was your employee's transfer in making your transfer decision?  
Not at all Important  
Very Unimportant  
Neither Important nor Unimportant  
Very Important  
Extremely Important  
I was not assigned to be an employee

The second dependent variable measured the amount of endowment employees transferred to their managers (X1). The employee's decision of how much of their endowment sent to the manager (\$0.00 - \$10.00). This continuous variable was used to test H1b.

The third dependent variable was the amount of wealth managers transfer back to their employees, measured as a ratio of the amount transferred to them (X2/X1). This continuous variable was used to test H2a, H2b, and H2c.

### **Understanding Checks, Manipulation Checks, Post-Experimental Questionnaire**

To determine whether participants understood key elements, they answered understanding checks throughout the experiment's instructions. Specifically, participants were tested to make certain they understood their role as either an employee or manager and how their decisions would affect the final payout. Any misunderstandings about these features of the experiment were corrected before participants were allowed to continue to the decision round. At the conclusion of the experiment participants completed a post-experimental questionnaire which

included additional questions designed to determine the importance of various considerations in their decision process. Participants also answered basic demographic questions.

### RESULTS

#### Descriptive Statistics

One hundred six students were recruited through the Virginia Commonwealth University's Online Recruitment System for Economic Experiments. Five participants' were removed due to either a lack of ability to provide the ID information given to them in the preliminary survey or because they did not include an email to connect their output data. Fifty-one percent of the remaining 101 students were female. All participants were asked multiple understanding check questions throughout the experiment with increasing difficulty. Participants were not able to move forward until they demonstrated that they understood the experimental procedures for the economic exchange decision they were to make and how those decisions affected themselves and the participant they would randomly be paired with within the room. After the participants demonstrated their understanding of the experiment, it was reiterated that this exchange would be one round of decisions and that their decisions had a direct effect on another participant within the room.

Table 9 presents the means and medians of the amounts sent by the employee and returned by their manager in terms of percentage of their overall available wealth. The average percentage of endowment available sent for those in the employee role was 55 percent (standard deviation = 0.277), whereas the average percentage returned by the manager was 25 percent (standard deviation = 0.207). These results indicate that employees, on average, were likely to share a little more than half of their initial endowment with their managers. Managers returned a quarter of what they received, which is likely due to the fact that they understood that the

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employee in most cases already retained a portion of the wealth they were initially endowed with. Therefore, sending half of what managers had received was unnecessary to be equitable. Table 10 shows that the average profit for each participant was \$10.66.

[Insert Table 9 Here]

[Insert Table 10 Here]

Table 11 presents the aggregate scores of an individual's sensitivity to reciprocity from utilizing their responses to the 14-item, 2-factor reciprocity measure. This measure was distributed in survey form both prior to and after the lab experiment took place. The aggregate score remained on a 1-5 scale measured from one indicating low sensitivity to reciprocity to five indicating highly sensitivity to reciprocity. The average score for the entire participant group was 2.91 (standard deviation = 0.365). Participants in the employee role had an average of 2.92 (standard deviation = 0.339), and participants in the manager role had an average of 2.92 (standard deviation = 0.393).

[Insert Table 11 Here]

### **Employees' Sensitivity to Reciprocity and Consideration of Amount Sent**

Table 12 presents the results of the correlation between an employee's sensitivity to reciprocity and their consideration of their managers subsequent action in regards to their decision to send a portion of their initial endowment.<sup>28</sup> The results show that there is not a significant correlation between the two variables ( $r = 0.073$ ,  $n = 51$ ,  $p = 0.613$ ). Mean difference t-test results (presented in Table 13) indicate that there was no significant difference between the

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<sup>28</sup> Both the reciprocity measure and the employee's consideration of their manager was based on a 1-5 Likert scale, 1 being very low, and 5 being very high.

mean consideration based on a 50/50 mean split of sensitivity to reciprocity (4.11, sd = 1.03) and (4.20, sd = 1.22) respectively. These results do not support Hypothesis H1a.

[Insert Table 12 Here]

[Insert Table 13 Here]

Table 14 presents the results of the correlation between employees' sensitivity to reciprocity and the percentage of their initial endowment that they chose to transfer to their managers. The results show that there is not a significant correlation between the two variables ( $r = 0.083$ ,  $n = 51$ ,  $p = 0.565$ ). Mean difference t-test results (see Table 15) indicate that there was no significant difference between the mean transfers based on a 50/50 mean split to designate employees as possessing either high or low sensitivity to reciprocity (0.55, sd = 0.24) and (0.55, sd = 0.31), respectively. These results do not support Hypothesis H1b.

[Insert Table 14 Here]

[Insert Table 15 Here]

Table 16 presents the results of the correlation between the effect of the proportion of an employee's initial endowment transferred on the manager's decision to return a portion of their wealth received. The results show that there is a significant correlation between the two variables ( $r = 0.724$ ,  $n = 51$ ,  $p < 0.001$ ). This result supports Hypothesis H2a.

[Insert Table 16 Here]

Table 17 presents the descriptive statistics for the variables of interest for hypotheses H2c, H2b, H2c. Across all participants chosen to act as the manager, the average percent of wealth returned to the employee was 26.13 percent (standard deviation = 0.2063). When compared to the overall average of the amount sent by those in the employee role, it seems that

individuals tend to keep a portion that restores some sense of equilibrium, but they allow themselves to still come out marginally ahead.<sup>29</sup>

[Insert Table 17 Here]

Table 18 presents the test of the effect of a managers' level of Sensitivity to Reciprocity and employees' Percentage of Endowment Transferred on the Percentage Returned by their manager.<sup>30</sup> The analysis indicates that the main effect of Employee % Sent significantly affects the percentage that managers return ( $F = 34.190, p < 0.001$ ). The main effect of Manager Reciprocity is marginally significant ( $F = 3.243, p = 0.078$ ). However, the interaction between Employee % and Manager Reciprocity ( $F = 0.428, p = 0.516$ ) is not significant. Figure 8 illustrates the patterns underlying the observed effects.

[Insert Table 18 Here]

[Insert Figure 8 Here]

### Supplementary Analysis of Trust and Distributional Fairness

Table 19 presents the correlations for the final 14-item scale, and indicates that 12 items have significant correlations with the overlapping measure of reciprocity. Using these correlations, additional analyses were conducted to examine if one or both of the two individual traits composing the two-factor reciprocity measure (trust sensitivity and distributional fairness sensitivity) had stronger predictive ability for the dependent variables in the study.

[Insert Table 19 Here]

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<sup>29</sup> If an employee sends 50% to the manager and the manager returns 25% the final wealth received by both the employee and manager are \$8.75 and \$11.25 respectively.

<sup>30</sup> High and Low transfer classifications decisions use a median split where all transfers made by the employee that were  $\leq 50\%$  are classified as low and  $> 50\%$  are categorized as high. Likewise, High and Low sensitivity measures are also classified using a median split where all scores  $< 3.078$  are classified as having low sensitivity to reciprocity and all scores  $\geq 3.078$  are classified as having high sensitivity to reciprocity



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Table 20 and Table 21 parse out the measure of an employee’s sensitivity specifically towards trust and distributional fairness and their likelihood to consider reciprocal behavior of their paired manager. Table 20 shows the correlations found between the participants designated as employee’s sensitivity to trust and their subsequent consideration of their paired manager’s decision dependent on how much they initially transferred, from this it does not indicate that this measure was predictive of behavior with correlation between the two variables ( $r = 0.201$ ,  $n = 51$ ,  $p = 0.158$ ). Similarly, Table 21 shows the correlations found between the participants designated as employee’s sensitivity to distributional fairness and their subsequent consideration of their paired manager’s decision dependent on how much they initially transferred, from this it does not indicate that this measure was predictive of behavior with correlation between the two variables ( $r = -0.208$ ,  $n = 51$ ,  $p = 0.143$ ).

[Insert Table 20 Here]

[Insert Table 21 Here]

Table 22 and 23 parses out the measure of an employee’s sensitivity specifically towards trust and distributional fairness and their initial endowment transfer to their paired manager. Table 22 shows the correlations found between the employees’ sensitivity to trust and their subsequent endowment sent, from this it does not indicate that this measure was predictive of behavior with correlation between the two variables ( $r = -0.013$ ,  $n = 51$ ,  $p = 0.926$ ). Similarly, Table 23 shows the correlations found between the participants designated as employee’s sensitivity to distributional fairness and their subsequent endowment sent, from this it does not indicate that this measure was predictive of behavior with correlation between the two variables ( $r = 0.155$ ,  $n = 51$ ,  $p = 0.276$ ).

[Insert Table 22 Here]

[Insert Table 23 Here]

Table 24 parses out the measure of a manager's sensitivity specifically towards trust, the employee's initial endowment sent, and the manager's subsequent return transfer to their paired employee. The analysis indicates that the main effect of Employee % Sent significantly affects the percentage that managers return ( $F = 35.430, p < 0.001$ ). The main effect of Distributional Fairness Sensitivity is marginally significant ( $F = 0.048, p = 0.827$ ). However, the interaction between Employee % and Distributional Fairness Sensitivity ( $F = 0.389, p = 0.536$ ) is not significant.

[Insert Table 24 Here]

Table 25 shows the measure of a manager's sensitivity specifically towards distributional fairness, the employee's initial endowment sent, and the manager's subsequent return transfer to their paired employee. The analysis indicates that the main effect of Employee % Sent significantly affects the percentage that managers return ( $F = 35.585, p < 0.001$ ). The main effect of Distributional Fairness Sensitivity is marginally significant ( $F = 0.138, p = 0.712$ ). However, the interaction between Employee % and Distributional Fairness Sensitivity ( $F = 0.003, p = 0.956$ ) is not significant.

[Insert Table 25 Here]

## **DISCUSSION**

This dissertation attempted to reach further into the theory of reciprocity and the multiple dimensions that have formed it through previous research. However, the iterative process of scale development resulted in a 14-item, 2-factor model whose fit indices did not meet desired levels of goodness of fit. Further, this model did not exhibit predictive ability in an economic setting. However, this process opens a discussion as to what characteristics interact with

reciprocity and lays groundwork for future research in this field. The results suggest that the direct actions of another person appeared to have a significant impact on behavior, as is suggested by the significant correlation between managers' responses to employees' initial transfer.

There was, however, some difference observed when a negative state was induced in the scenario. This occurred when employees sent a small portion of their endowment and managers who were more sensitive to reciprocity exhibited stronger negative reciprocity than managers who were less sensitive to reciprocity. Additional research is needed to examine the potential for individuals who are sensitive to reciprocity to be more demonstrative in negative interactions than in positive interactions. Further research is also needed to build upon the initial groundwork laid in this study in the effort to create a measure of individual sensitivity to reciprocity.

Alternative explanations for the results not adhering to expectations include the number of participants surveyed when conducting the EFA. While previous researchers, such as Fabrigar et al. (1999), suggest four observations per item, others (such as Comrey and Lee 1992) suggest that much larger numbers are needed. Osborne (1997), for example, utilized 1,908 participants for a 13-item questionnaire. This indicates that numbers play a role in scale development and the power of the results. It may be of interest to deploy the survey on a much larger scale or with other populations of respondents.

### **FUTURE RESEARCH**

#### **Attribution**

A clear area for additional research is to explore other dimensions to create a more comprehensive measure of an individual's sensitivity to reciprocity. For example, examining the attribution dimension may add depth in replicating current and prior studies. Freud (1894)

describes an individuals' ego and its ability to reject “unbearable ideas.” This may negatively affect one's image of self. Simply stated, individuals may lack the ability to objectively assess traits or events that cause them to feel as though they have faults. Langer (1975) introduced the theory of the “illusion of control,” in which individuals attribute success to their own action/abilities, even in a scenario in which their success is determined entirely by chance. The dimension of attribution predicts that individuals are more likely to attribute successful outcomes to their own contributions or ability. Conversely, they attribute unsuccessful outcomes to outside sources beyond their control (Langer 1975; Ross and Sicoly 1979; Bartling and Fishbacher 2011).

Attribution is individuals' perception of their contribution to an outcome. This dimension may be inherent in understanding reciprocity. If individuals attribute outcomes solely to their own performance, then they have no reason to react to other individuals' actions. While pure objectivity (Floyd and Sutteck 2011; Ragin 2000, 2014) does not lend theory to individuals' perception that they are entirely in control of every outcome (Langer 1975), it lends to a specific side of the spectrum of attribution. Specifically, if individuals have higher levels of objectivity, they are better able to correctly allocate their own contribution toward an outcome whether it be success or failure. In opposition, individuals who attribute outcome entirely to other sources would likely demonstrate a dysfunctional reciprocated behavior. They would incorrectly allocate the responsibility for success or failure either entirely to their own contribution or other influences.

Prior accounting literature on attribution theory often focuses on individuals' “egocentric bias” in defining their ability to affect the success or failure of an outcome, regardless of their actual contribution or ability to do so (Sicoly and Ross 1977; Ross and Sicoly 1979; Thompson

and Kelley 1981). Early psychological works, noted that individuals are so averse to attributing failure to themselves that they will incorrectly recollect any outcome their ego may deem as “unbearable ideas that damage a psychological image of one’s self.” When outcomes are positive, individuals are prone to elicit an “illusion of control” in which they attribute success to their own talents, even under conditions in which the outcome is determined by pure chance. This extends to situations in which a person attributes their efforts and talent to the success of a group (Ross and Sicoly 1979; Thompson and Kelly 1981; Rather and Herskowitz 1977).

The primary stream of behavioral accounting literature related to the effects of attribution and reciprocity is in contract negotiations. For example, an organization is looking to hire an employee and falsely offers the potential hire the possibility to control the outcome of their wage. The potential new hire will likely feel slighted due to the ruse. Given the feeling of lack of actual control of their outcome, the new hire provides lower levels of effort. Conversely, when giving subordinates actual decision power in a contract engagement, the new hires provide higher levels of effort. Choi (2014) demonstrated attribution of bonus offers dependent on labor market scarcity. New hires offered a bonus contract in a scarce labor market would attribute the bonus to their own importance. Conversely, new hires offered a bonus contract in a surplus labor market would attribute the bonus to a sign of goodwill, resulting in increased effort.

### ***Predicted Responses for Varying Sensitivities to Attribution***

Individuals with a negative predisposition toward attribution would not objectively attribute a positive outcome in situations in which their own ability had limited impact (Langer 1975). The individual would also not accept responsibility when faced with a negative outcome (Ross and Sicoly 1979; Thompson and Kelley 1981). If individuals have a positive predisposition toward attribution, they are likely to attribute a positive outcome in situations in

which their ability affected the outcome. They would have the objective ability to assess their contributions to success or failure. If, for example, individuals have a positive predisposition, they will likely respond to positive or negative feedback with similar assessments of themselves. They can properly attribute their actions to an outcome. Figure 5 illustrates the relationship between an individual's level of sensitivity to attribution and expected response to success and failure.

[Insert Figure 5 Here]

### **Duration**

One possible extension for the final scale would include the duration of a relationship and how it affects reciprocal tendencies. Due to the sheer size of the original item pool, duration was not included in the scale development for this dissertation. Previous works have shown differences in reciprocal behavior based on the length of an expected relationship between parties. Prior studies, especially those examining relationships between auditors, analysts, and management, illustrate effects due to the duration of the relationship – sometimes in the opposite of the predicted direction (Fisher et al. 2015). Problems arise in interpreting these results; however, as potential confounding effects (most notably, industry experience) may minimize the impact of an individual's sensitivity to reciprocity. These issues would be critical to explore before developing an appropriate set of items related to the effects of relationship duration on reciprocal tendencies.



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## A VIEW INTO RECIPROCITY – Green 2019

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**APPENDIX 1**

**Initial MTurk Instrument – V 1.0**

VCU IRB PROTOCOL NUMBER: HM20013040

**RESEARCH PARTICIPANT INFORMATION SHEET**

**STUDY TITLE:** Reciprocity in the Workplace: A Survey

**VCU INVESTIGATORS:** Alisa Brink, Ph.D., Associate Professor of Accounting

Kelly Green, Accounting Doctoral Candidate

You are invited to participate in a research study examining reciprocity (how people respond to other people's behaviors). You are being asked to participate in this study because of your current status as an Amazon Mechanical Turk worker. Your participation is voluntary.

This survey will be conducted in one session that will last 10-15 minutes.

- You will accept to engage in the Amazon Mechanical Turk 'HIT'.
- You will be provided a link to a survey that will allow you to engage in the survey on Qualtrics.
  
- You will engage in the brief survey in Qualtrics.
- You will receive a code provided by Qualtrics to confirm that the survey has been completed.
  
- Once confirmed you will receive compensation.
- Your total payment will be \$1.50 paid through your amazon account.

Workers are being hired to provide complete and thoughtful responses, researchers are providing cause for rejecting submissions that are either incomplete or show evidence of inattentive completion.

In the future, any information identifying you will be removed from the information you provide in this study. After that removal, the information could be used for other research studies by this study team or another researcher without asking you for additional consent.

Please enter your MTurk Worker ID # to continue.

**Survey Questions**

If I want something from a person I dislike, I will act very nicely toward that person to get it.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I sometimes try to make people feel guilty so that they will do what I want.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

If I want something from someone, I ask for it directly, instead of manipulating them into giving it.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

If I knew that I could never get caught, I would be willing to steal a million dollars.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I wouldn't cheat a person even if he or she was a real "sucker".

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I would still pay my taxes even if I would not get caught for avoiding them.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I'd be tempted to use counterfeit money, if I were sure I could get away with it.

- Strongly disagree
- Disagree

## A VIEW INTO RECIPROCITY – Green 2019

- Neither agree nor disagree
- Agree
- Strongly agree

It is okay to use deception to obtain information superior to that of my peers.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Keeping excess funds is okay so long as it would go unnoticed by my manager.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Use of deception is fine so long as it provides a competitive advantage.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I am likely to distrust individuals that I have repeated negative interaction with.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I am likely to trust individuals whom I have had extended periods of interaction with.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I am likely to be more honest with managers who I have had extended periods of interaction with, regardless of positive or negative interaction.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

## A VIEW INTO RECIPROCITY – Green 2019

I am more likely to show leniency to employees whom I expect repeated interactions with.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Having a high level of social status is not very important to me.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Having a lot of money is not especially important to me.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I am likely to reject an offer that I feel is unfair even if I benefit.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Stealing office supplies is justified if my salary is unfair and knew I would not be caught.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I would be more likely to embezzle if I believed my salary was unfair and knew I would not be caught.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I am likely to exert more effort on task if my manager has shared with me a portion of the profits.

- Strongly disagree
- Disagree

## A VIEW INTO RECIPROCITY – Green 2019

- Neither agree nor disagree
- Agree
- Strongly agree

I am willing to punish unfair acts even if it is at a personal loss.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I am willing to reward acts of kindness even if it is at a personal loss.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I believe that sharing my resources is important if it improves common welfare.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

My own needs outweigh those of the common welfare.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

It doesn't take much to make me angry.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I rarely feel anger even when people treat me quite badly.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree



## A VIEW INTO RECIPROCITY – Green 2019

Most people tend to angry more quickly than I do.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I make decisions based on the feeling of the moment rather than on careful thought.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I make a lot of mistakes because I don't think before I act.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I usually stop myself before doing anything that I might later regret.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Sometimes I do things on impulse that turn out later to be unwise.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I feel that my organization perceives me as untrustworthy when controls are explicitly outlined by my manager.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I believe that direction outlined by my manager is intended to improve the overall success of the organization and employees alike.

- Strongly disagree

## A VIEW INTO RECIPROCITY – Green 2019

- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I am likely to exert more effort under circumstances in which directions are explicitly outlined by my manager.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I am likely to reward a coworker if I feel that they are exerting their full effort on a task.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I am likely to punish a coworker if I feel that they are not exerting their full effort on a task.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I would never accept a bribe even if it were very large.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

I would get a lot of pleasure from owning expensive luxury goods.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

If I were in the role of a superior I would take into consideration potential negative feedback from subordinates when imposing controls.

- Strongly disagree
- Disagree
- Neither agree nor disagree

## A VIEW INTO RECIPROCITY – Green 2019

- Agree
- Strongly agree

### Attention Check Questions

Please select the answer "Neither agree nor disagree"

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Please select the answer Green

- Red
- Blue
- Yellow
- Green
- Purple

### English Proficiency Check Questions

Please complete this sentence

"I haven't got..."

- no brothers or sisters.
- brothers or sisters.
- any brothers or sisters.
- some brothers and sisters.

Please select the correct phrase

- Always he arrives at 2:30
- He arrives at always 2:30
- He always arrives at 2:30
- He always at 2:30 arrives

### Demographic Questions

What is your age?

- 18-24 years old
- 25-34 years old
- 35-44 years old
- 45-54 years old
- 55-64 years old
- 65-74 years old

## A VIEW INTO RECIPROCITY – Green 2019

- 75 years or older

How many years of full-time work experience do you have?

What is the highest degree or level of school you have completed? If currently enrolled, highest degree received.

- No schooling completed
- Elementary school to 8th grade
- Some high school, no diploma
- High school graduate, diploma or the equivalent (for example: GED)
- Some college credit, no degree
- Trade/technical/vocational training
- Associate degree
- Bachelor's degree
- Master's degree
- Professional degree

What is your gender?

- Male
- Female
- Prefer not to respond

Is English your first language?

- Yes
- No

### **Completion Page**

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Thank you for participating,

Here is your ID : #####

Copy this value to paste into MTurk

When you have copied this ID, please click the next button to submit your survey.

APPENDIX 2

IRB Approval Letter – Scale Development



**VCU**  
Office of Research and Innovation

Office of Research and Innovation  
Office of Research Subjects Protection  
BioTechnology Research Park  
800 East Leigh Street, Suite 3000  
Box 080568  
Richmond, Virginia 23298-0568  
(804) 828-0868  
Fax: (804) 827-1448

TO: Alisa Brink  
Alisa Brink  
CC: Kelly Green

FROM: VCU IRB Panel A

RE: Alisa Brink ; IRB [HM20015445](#) Reciprocity: Confirmation of Measure

On 3/29/2019 the referenced research study ***qualified for exemption and was approved by limited IRB review*** according to 45 CFR 46 by VCU IRB Panel A under exempt category/categories

Category 3(i)(C) Research involving benign behavioral interventions when the information obtained is recorded by the investigator in an identifiable manner, and the IRB conducted a limited IRB review

The information found in the electronic version of this study's smart form and uploaded documents now represents the currently approved study, documents, and HIPAA pathway (if applicable). You may access this information by clicking the Study Number above.

If you have any questions, please contact the Office of Research Subjects Protection (ORSP) or the IRB reviewer(s) assigned to this study.

The reviewer(s) assigned to your study will be listed in the History tab and on the study workspace. Click on their name to see their contact information.

**Attachment – Conditions of Approval for Exempt Studies**

---

**Conditions of Approval for Exempt Studies (version 1/21/2019)**

In order to comply with federal regulations and the terms of this approval, the investigator must *(as applicable)*:

1. Conduct the research as described in and required by the IRB-approved protocol/smartform.
2. Confirm that all non-VCU sites that have been approved to rely on the VCU IRB for research requiring limited IRB review [45 CFR 46.104(d)(2)(iii), (d)(3)(i)(C), (d)(7), or (d)(8)] are aware of and agree to abide by the reliance relationship and the institutional responsibilities outlined in [WPP XVII-6](#).
3. Submit amendments to the VCU IRB for review and approval before the following types of changes are instituted at any site under the VCU IRB's oversight (VCU sites and non-VCU sites that rely on the VCU IRB):
  - o **Change in Principal Investigator**
  - o **Addition or removal of non-VCU sites** whenever one or more of the following applies:
    - VCU is the lead site in a multicenter study,
    - A VCU investigator is overseeing study conduct and/or directly, conducting research at another site, and/or
    - De-identified or identifiable research data will be sent to a different site
  - o **Any change that poses new risks or increases the risks to participants including, but not limited to, the following types of changes:**
    - Changes in the study's measures or the research intervention, including
      - Changes in behavioral intervention procedures or the use of deception,
      - Changes related to sexual activity, abuse, past or present illicit drug use, illegal activities, other sensitive topics, or other factors that might place participants at risk of civil or criminal liability
      - Changes reasonably expected to provoke psychological distress or that could make participants vulnerable, or
      - Changes that relate to participants' financial standing, employability, educational advancement, or reputation.
    - Changes in the source of secondary information or biospecimens
    - Changes in the confidentiality or privacy protections used by the study, including
      - Changes in the storage location or method of storage of research materials
      - Changes in the identifiers being used to carry out secondary research (regardless of whether identifiers are retained in the research data).
      - Changes related to the sharing of individual-level research data
    - Changes in recruitment strategy
    - Changes in the planned compensation to participants
  - o **Changes that alter the category of exemption or that add additional exemption categories**
    - Changes that add procedures or activities not covered by the exempt category(ies) under which the study was originally determined to be exempt
    - Changes in the planned participant population (e.g. addition of children, wards of the state, or prisoner participants, students, control groups, etc.)
    - Changes in the participant identifiers being used and/or collected
    - **For studies currently approved under Pre-2018 Common Rule Exempt Category 4:** Change in inclusion dates for retrospective record reviews if the new date is after the original approval date for the exempt study. (Example: The approval date for the study is 9/24/18 and the original inclusion dates were 01/01/08-06/30/18. This could be changed to 01/01/06 to 09/24/18 but not to end on 09/25/18 or later.)

Changes that do not meet these criteria do not have to be submitted to the IRB. If there is a question about whether a change must be sent to the IRB please call the ORSP for clarification.
4. Provide non-English speaking participants with a written translation of the approved consent information in language understandable to the research participant. The IRB must approve the translated version prior to use.
5. Monitor all problems (anticipated and unanticipated) associated with risk to research participants or others.
6. Report Unanticipated Problems (UPs), following the VCU IRB requirements and timelines detailed in [WPP VII-6](#)
7. Respond promptly to all inquiries by the VCU IRB and Office of Research Subjects Protection concerning the conduct of the research.

*The VCU IRB operates under the regulatory authorities as described within:*

- U.S. Department of Health and Human Services Title 45 CFR 46, Subparts A, B, C, and D and related guidance documents.
- U.S. Food and Drug Administration Chapter I of Title 21 CFR 50 and 56 (for FDA regulated research only) and related guidance documents.

APPENDIX 3

IRB Approval Letter – Experiment



**VCU**  
Office of Research and Innovation

Office of Research and Innovation  
Office of Research Subjects Protection  
BioTechnology Research Park  
800 East Leigh Street, Suite 3000  
Box 980568  
Richmond, Virginia 23298-0568  
(804) 828-0868  
Fax: (804) 827-1448

TO: Alisa Brink  
CC: Kelly Green  
FROM: VCU IRB Panel A  
RE: Alisa Brink ; IRB [HM20013040](#) Reciprocity in Behavioral Accounting: Development of a Scale to Measure Sensitivity

On 6/7/2018 the referenced research study *qualified for exemption* according to 45 CFR 46.101(b), **category 2**.

The information found in the electronic version of this study's smart form and uploaded documents now represents the currently approved study, documents, and HIPAA pathway (if applicable). You may access this information by clicking the Study Number above.

If you have any questions, please contact the Office of Research Subjects Protection (ORSP) or the IRB reviewer(s) assigned to this study.

The reviewer(s) assigned to your study will be listed in the History tab and on the study workspace. Click on their name to see their contact information.

**Attachment – Conditions of Exempt Approval**

---

**Conditions of Exempt Approval:**

In order to comply with federal regulations, industry standards, and the terms of this approval, the investigator must (as applicable):

1. Conduct the research as described in and required by the Protocol.
2. Provide non-English speaking patients with a translation of the approved Consent Form in the research participant's first language. The Panel must approve the translation.
3. The following changes to the protocol **must be** submitted to the IRB panel for review and approval before the changes are instituted. Changes that do not meet these criteria do not have to be submitted to the IRB. If there is a question about whether a change must be sent to the IRB please call the ORSP for clarification.

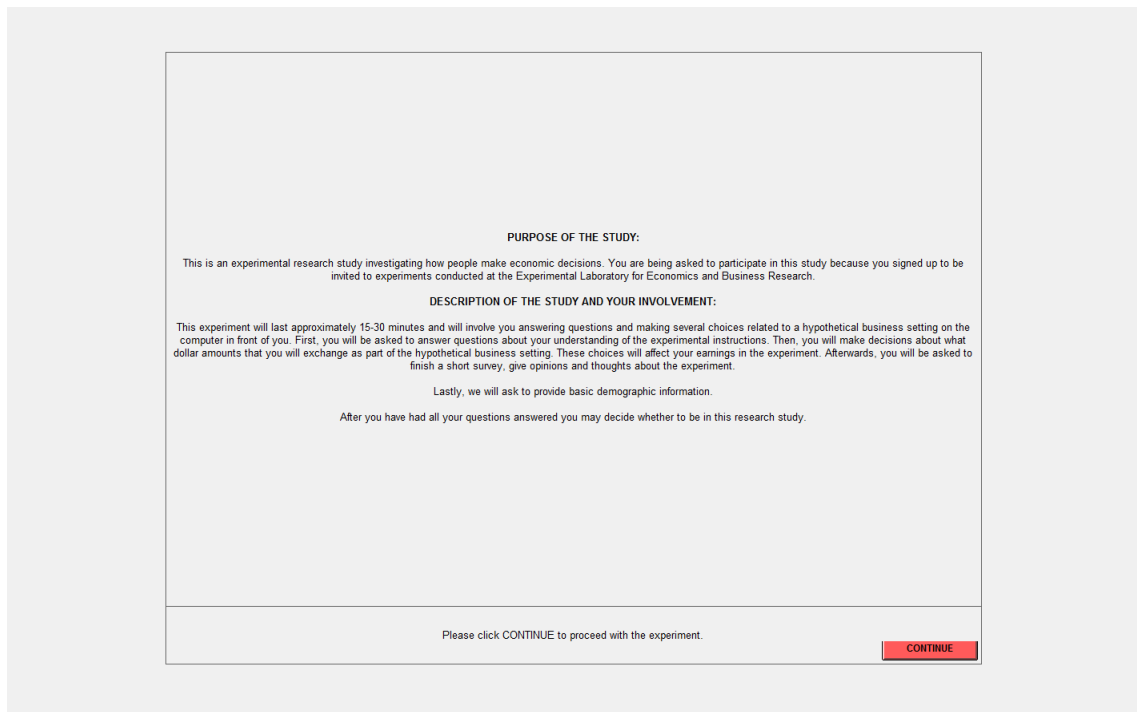
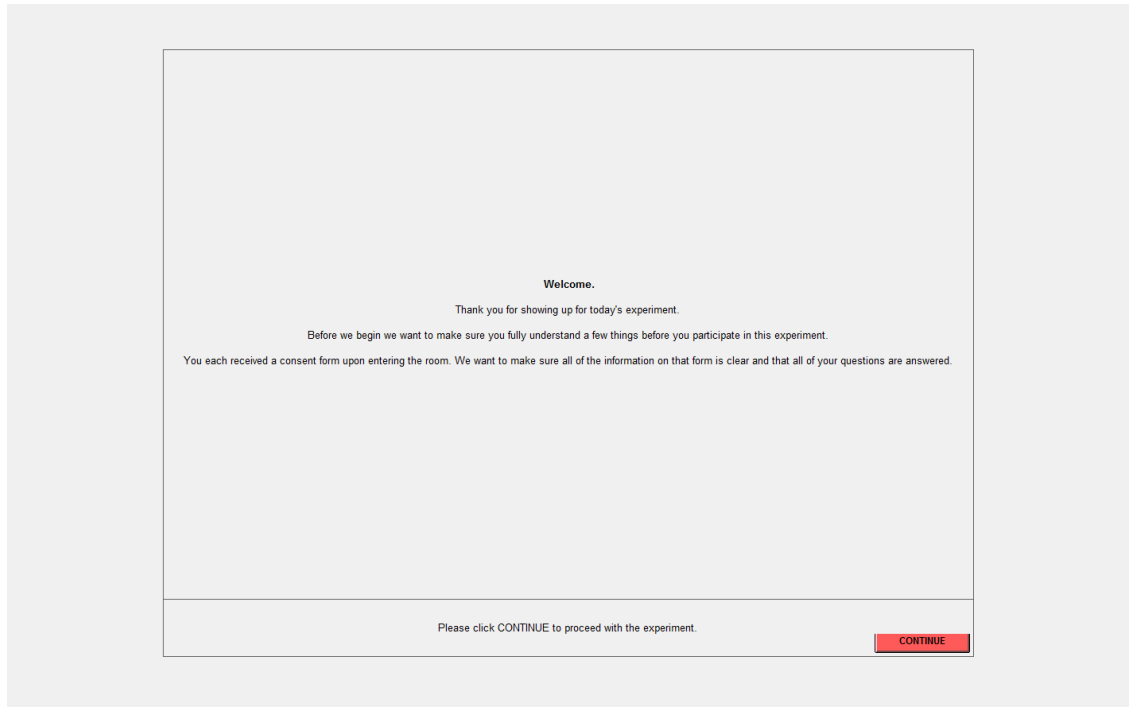
**THESE CHANGES MUST BE SUBMITTED:**

- Change in principal investigator
- Any change that increases the risk to the participant

- Addition of children, wards of the state, or prisoner participants
  - Changes in survey or interview questions (addition or deletion of questions or wording) that change the level of risk or adds questions related to sexual activity, abuse, past or present illicit drug use, illegal activities, questions reasonably expected to provoke psychological anxiety, or would make participants vulnerable, or subject them to financial, psychological or medical risk
  - Changes that change the category of exemption or add additional exemption categories
  - Changes that add procedures or activities not covered by the exempt category(ies) under which the study was originally determined to be exempt
  - Changes requiring additional participant identifiers that could impact the exempt category or determination
  - Change in inclusion dates for retrospective record reviews if the new date is after the original approval date for the exempt study. (ex: The approval date for the study is 9/24/10 and the original inclusion dates were 01/01/08-06/30/10. This could be changed to 01/01/06 to 09/24/10 but not to end on 09/25/10 or later. )
  - Addition of a new recruitment strategy
  - Increase in the planned compensation to participants
4. Monitor all problems (anticipated and unanticipated) associated with risk to research participants or others.
  5. Report Unanticipated Problems (UPs), following the VCU IRB requirements and timelines detailed in [VCU IRB WPP VII-6](#).
  6. Promptly report and/or respond to all inquiries by the VCU IRB concerning the conduct of the approved research when so requested.
  7. The VCU IRBs operate under the regulatory authorities as described within:
    - U.S. Department of Health and Human Services Title 45 CFR 46, Subparts A, B, C, and D (for all research, regardless of source of funding) and related guidance documents.
    - U.S. Food and Drug Administration Chapter I of Title 21 CFR 50 and 56 (for FDA regulated research only) and related guidance documents.
    - Commonwealth of Virginia Code of Virginia 32.1 Chapter 5.1 Human Research (for all research).



## APPENDIX 4 Screenshots of the Laboratory Experiment



## A VIEW INTO RECIPROCITY – Green 2019

**RISKS AND DISCOMFORTS:**

Participation could involve some very minor discomfort, such as making decisions and disappointment due to the outcome of those decisions.

**BENEFITS TO YOU AND OTHERS:**

You will have no direct benefits from this study. However, the information we gather in this study may help to better understand things that influence decisions in the workplace.

**COSTS:**

There are no costs for participating in this study other than the time you will spend in the experimental session.

Please click **CONTINUE** to proceed with the experiment.

**CONTINUE**

**PAYMENT FOR PARTICIPATION:**

You will be paid \$5 for showing up on time for today's experiment. You will also be able to earn additional money based on the decisions you make in the various parts of the experiment today. The money will be paid to you in cash after the experiment. You may discontinue your participation in the experiment at any time. If you do decide to leave the experiment before its conclusion, you will retain your \$5 participation fee.

Total payments within one calendar year that exceed \$600 will require the University to annually report these payments to the IRS and you. This may require you to claim the compensation you receive for participation in this study as taxable income.

You may be asked to provide your social security number in order to receive payment for your participation. Your social security number is required by federal law. It will not be included in any information collected about you for this research. Your social security number will be kept confidential and will only be used in order to process payment.

Please click **CONTINUE** to proceed with the experiment.

**CONTINUE**

## A VIEW INTO RECIPROCITY – Green 2019

### CONFIDENTIALITY:

Your anonymity will be maintained during the data collection, analysis, and any publications or presentations of the results. Access to the data collected in this survey will be limited to the VCU project team.

Data is being collected only for research purposes. Your data will be identified by ID numbers, not names, and stored separately from research data in a locked research area. The payment form that is required for tax purposes will be kept in a locked file cabinet and will be kept indefinitely. Access to all data will be limited to study personnel.

We will not tell anyone the answers you give us; however, information from the study may be looked at or copied for research or legal purposes by Virginia Commonwealth University.

What we find from this study may be presented at meetings or published in papers, but your name will not ever be used in these presentations or papers.

Please click CONTINUE to proceed with the experiment.

CONTINUE

### QUESTIONS:

If you have any questions, complaints, or concerns about your participation in this research, contact:

Aisa Brink, Ph.D.  
Associate Professor of Accounting  
Virginia Commonwealth University  
Office: B3113 Snead Hall, 301 W. Main St.  
Richmond, VA 23284  
Email: [agbrink@vcu.edu](mailto:agbrink@vcu.edu)  
Phone: (850) 559-5913

The researcher/study staff named above is the best person to call for questions about your participation in this study.

If you have any general questions about your rights as a participant in this or any other research, you may contact:

Office of Research  
Virginia Commonwealth University  
800 East Leigh Street, Suite 3000  
P.O. Box 980568  
Richmond, VA 23298  
Telephone: (804) 627-2157

Contact this number to ask general questions, to obtain information or offer input, and to express concerns or complaints about research. You may also call this number if you cannot reach the research team or if you wish to talk with someone else. General information about participation in research studies can also be found at

[http://www.research.vcu.edu/human\\_research/volunteers.htm](http://www.research.vcu.edu/human_research/volunteers.htm).

Please click CONTINUE to proceed with the experiment.

CONTINUE

## A VIEW INTO RECIPROCITY – Green 2019

This experiment will be conducted on a networked computer program except for periodic instructions that I will read out loud.

From this point on, please refrain from talking with other participants or looking at their computer screens. If you have a question, please raise your hand and one of us will come to you.

When you completed the initial survey distributed upon accepting to participate in this experiment you were given a "Participant Code."

Please enter this code now:

This code will be used to keep the decisions you make during the experiment anonymous.

Please click CONTINUE to proceed with the experiment.

CONTINUE

This experiment has three main parts.

Part 1: You will learn about your role as either an employee or manager for a company and will each be asked to make a single decision to share wealth. **The decisions you you make will affect your final payment.**

Part 2: You will complete a brief survey.

Part 3: You will answer a few demographic questions and a few questions about your perceptions of the study.

After the completion of Part 3, you will be paid your cash earnings for the experimental session.

Please click CONTINUE to proceed with the experiment.

CONTINUE

## A VIEW INTO RECIPROCITY – Green 2019

### PART 1

You will be paired with another participant in the room.

Each participant will be designated as either an employee or manager.

Employees will be endowed with \$10. Managers will be endowed with \$0.

Participants designated as the employee will first decide an amount of their endowment that they would like to transfer to their manager. This amount will then be tripled and added to the manager's endowment.

Therefore if \$5 is transferred to the manager, they will receive  $\$5 \times 3 = \$15$ .

Please click CONTINUE to proceed with the experiment.

CONTINUE

### Further Instruction

Once the employee has made their decision, those designated as the manager will then be able to transfer back any amount.

Therefore if \$5 is transferred to the manager, they will be able to transfer back any amount between \$0 and \$15.

$$(\$5 \times 3 = \$15)$$

Participants earnings will be determined by the amount of endowment retained after both participants have made their decision.

Therefore if \$5 is transferred to the manager and they return \$10, the earnings will be as follows.

$$\text{Manager} = (\text{Initial Endowment}) + (\text{Transfer from employee}) \times 3 - (\text{Transfer back to employee})$$

So

$$\text{Manager Earnings} = \$0 + (\$5 \times 3) - \$10 = \$5$$

And

$$\text{Employee Earnings} = (\text{Initial Endowment} - \text{Transfer to manager}) + (\text{Transfer back to employee})$$

$$\text{Employee Earnings} = \$10 - \$5 + \$10 = \$15.$$

Please click CONTINUE to proceed with the experiment.

CONTINUE

## A VIEW INTO RECIPROCITY – Green 2019

How much is endowed to the manager?  
Enter an amount between 0 and 10

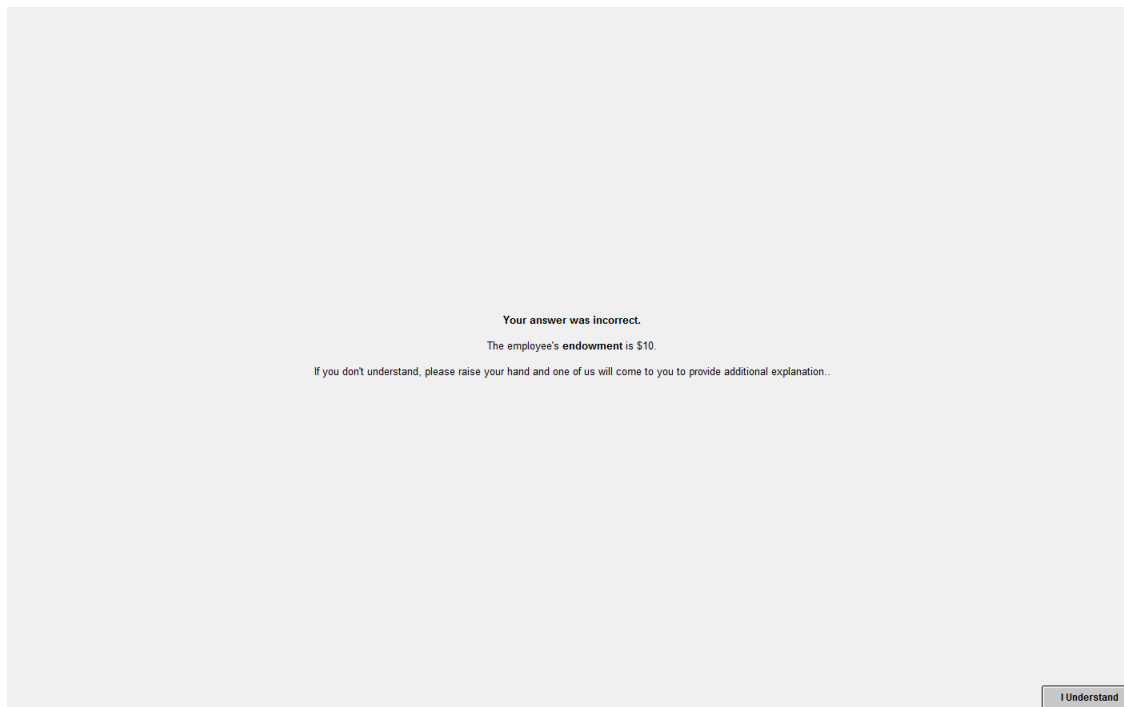
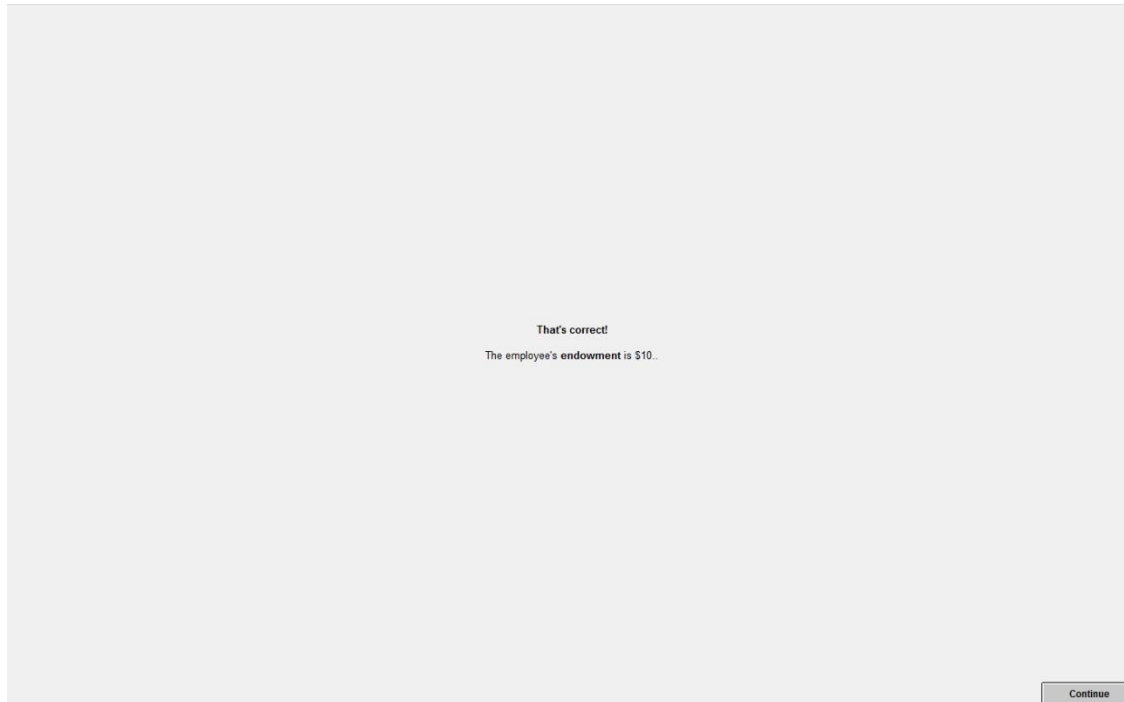
Enter amount here:

Please click CONTINUE to proceed with the experiment.

**CONTINUE**

That's correct!  
The manager's endowment is \$0.

Continue



## A VIEW INTO RECIPROCITY – Green 2019

Let's make sure you understand.

If the **employee** Transfers \$6 of their endowment to their manager, what amount would actually be received by the manager?

Keep in mind the employee's **initial transfer amount** is multiplied by 3.

\$0.00  
 \$6.00  
 \$12.00  
 \$18.00

Please click CONTINUE to proceed with the experiment.

**CONTINUE**

**That's correct!**

If the employee's **initial transfer** is \$6, the amount received by the manager is  $6 \times 3 = \$18$

Continue



## A VIEW INTO RECIPROCITY – Green 2019

Your answer was incorrect.

If the employee's **initial transfer** is \$6, the amount received by the manager is  $\$6 \times 3 = \$18$

If you don't understand, please raise your hand and one of us will come to you to provide additional explanation.

I Understand

Let's make sure you understand further.

If the **employee** transfers \$6 of their endowment to their manager, and the manager returns \$12, what would the employee's final earnings for the exchange be?

Keep in mind the **employee is initially endowed with \$10**.

- \$6.00
- \$12.00
- \$16.00
- \$18.00

Please click CONTINUE to proceed with the experiment.

CONTINUE

## A VIEW INTO RECIPROCITY – Green 2019

**That's correct!**

If the employee's **initial transfer is \$6** and the manager returns \$12, the employee's final earnings are:

(Initial Endowment) - (Transfer to Manager) + (Return from Manager)  
 $\$10 - \$6 + \$12 = \$16$ .

[Continue](#)

**Let's Begin**

Click "Ready" to begin the experiment.

[Ready](#)

## A VIEW INTO RECIPROCITY – Green 2019

Period 1

You are the **Employee**

How much do you wish to send to your manager?  
Enter an amount between 0 and 10. Amounts must be in whole dollars i.e. 1,2,3,4...

Submit

Period 1

You are the **Employee**

You sent **\$5**

The Manager received **\$15**

The Manager returned **\$5** (33% of the amount received)

Your earnings equal **\$10**

Manager's earnings equal **\$10**

Ready

## A VIEW INTO RECIPROCITY – Green 2019

Period 1

You are the manager

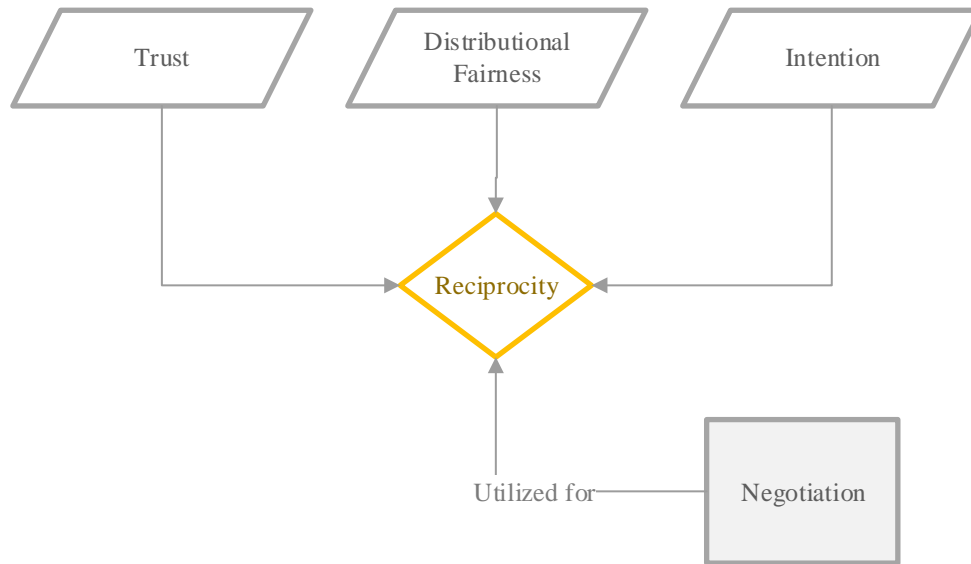
Your employee sent \$5, thus you received \$15

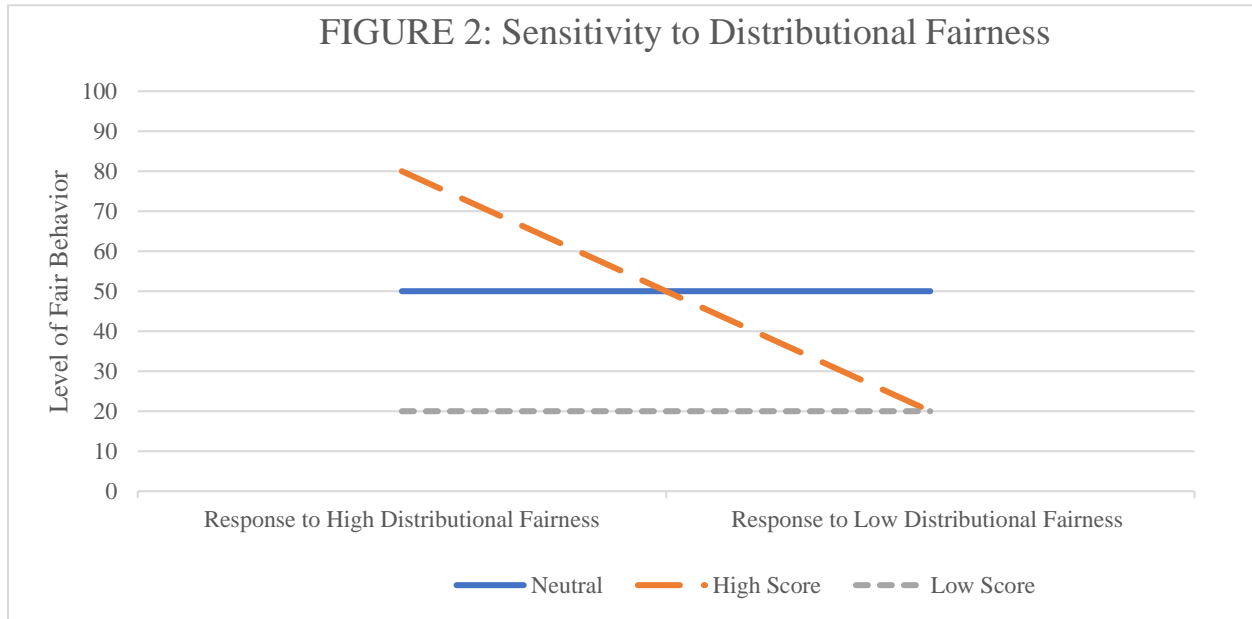
How much do you wish to return to your employee?  
Enter an amount between 0 and 15. Amounts must be in whole dollars i.e. 1,2,3,4.

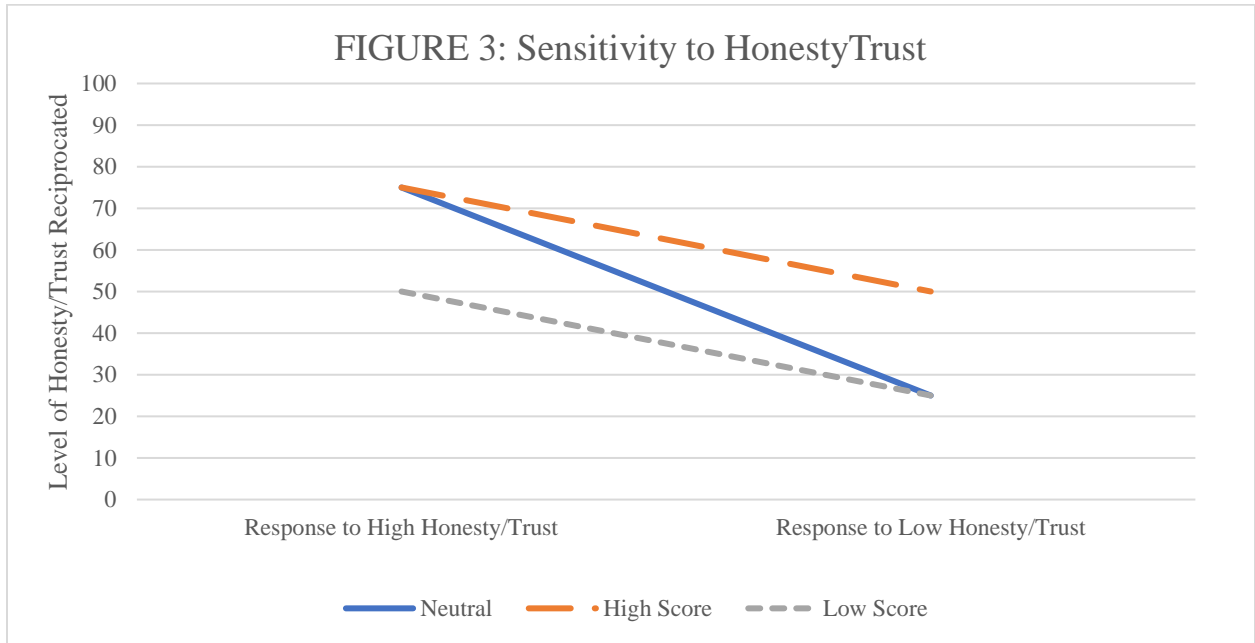
  

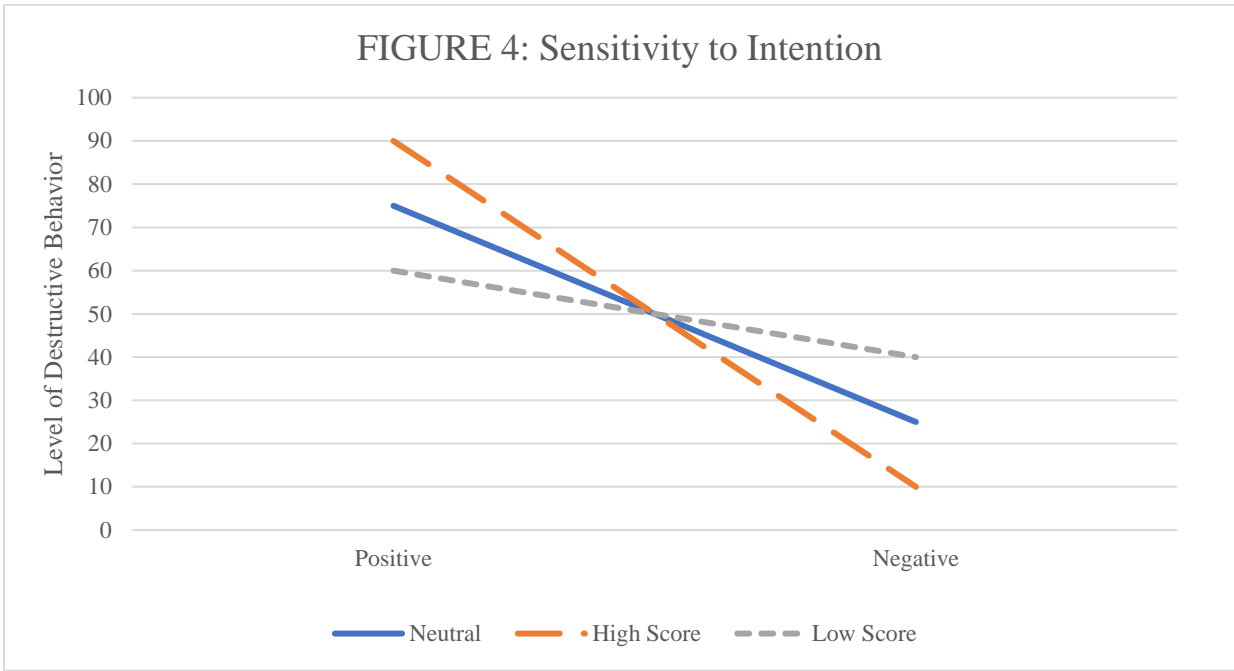
Please wait while other participants to confirm their payment information

**FIGURE 1: Predicted Relations between Dimensions of Reciprocity**











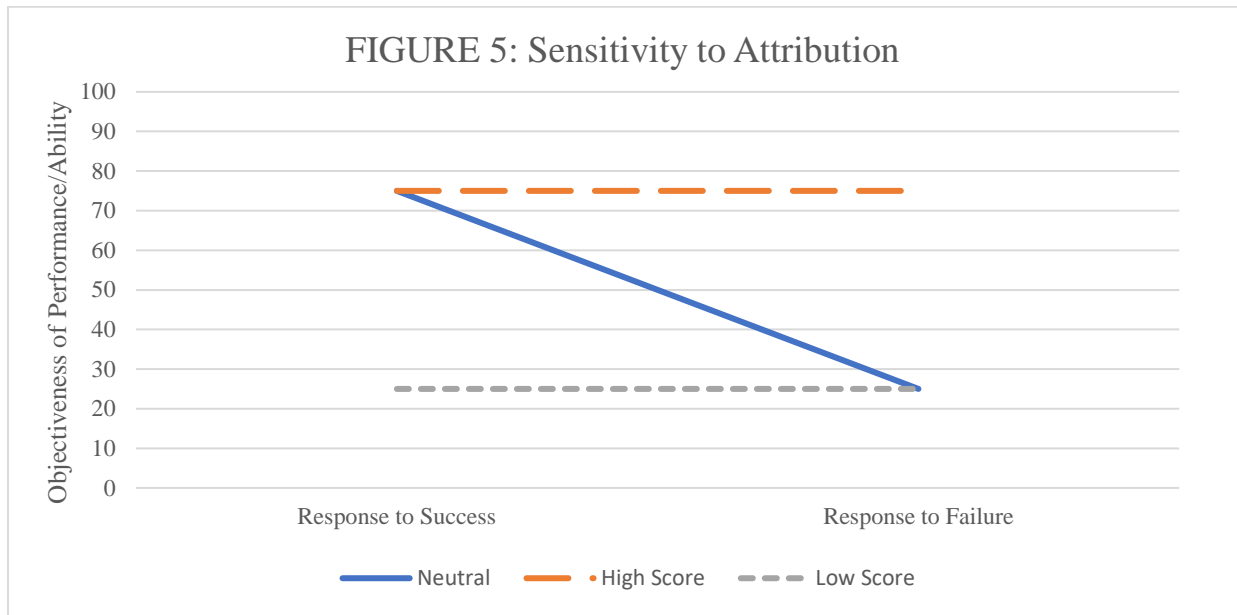
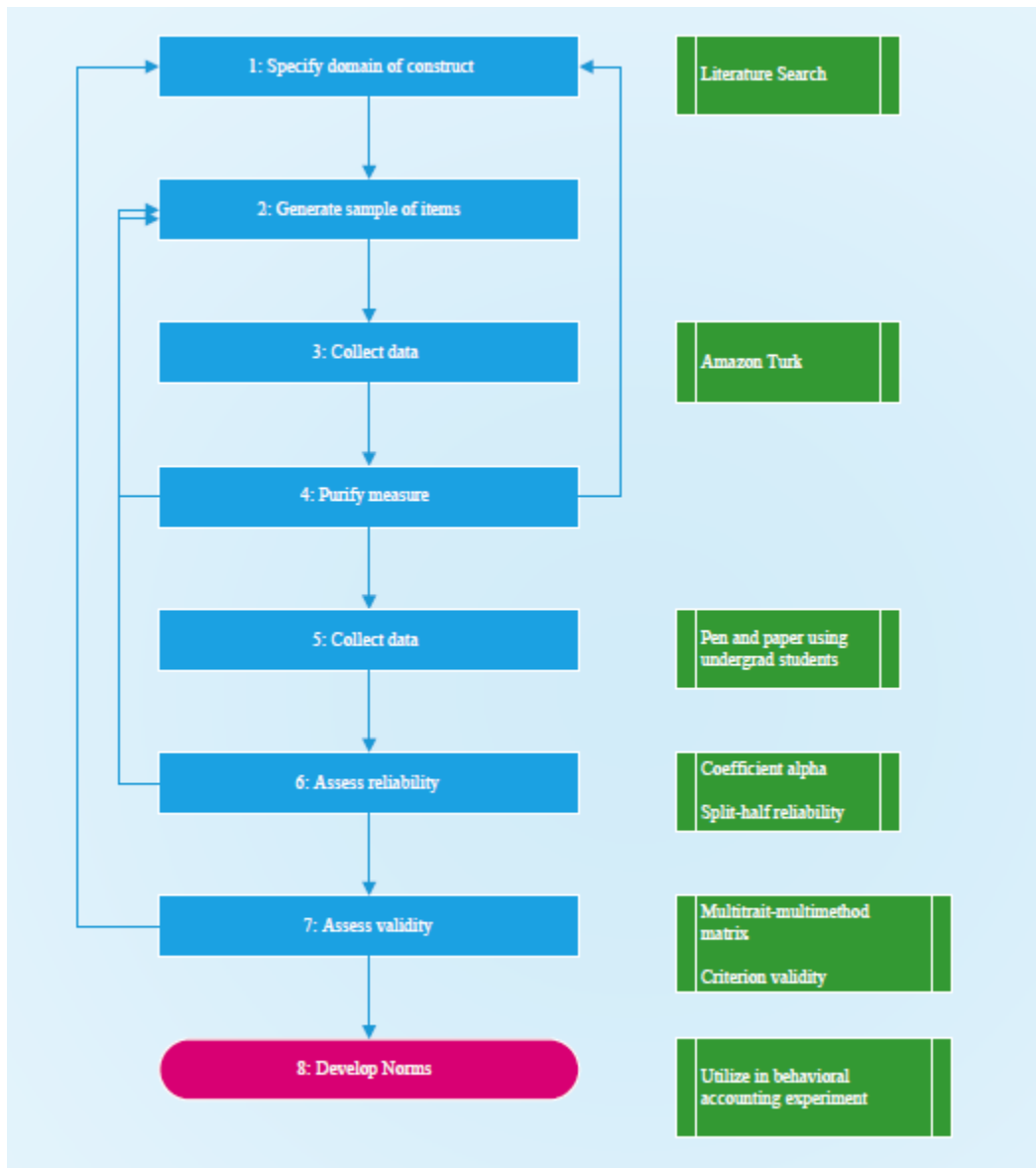


FIGURE 6: Churchill Methodology for Scale Development



**FIGURE 7: Predictions for H2**

Endowment sent by employee

	<b>High</b>	<b>Low</b>
<b>Manager with high sensitivity</b>	Highest return	Lowest return
<b>Manager with low sensitivity</b>	Moderate return	Moderate return

FIGURE 8: Average % Returned by Managers



**TABLE 1.1  
RECIPROCITY**

CITATION	JOURNAL	RESEARCH METHOD	SAMPLE	INDEPENDENT VARIABLES	DEPENDENT VARIABLES	KEY RESULTS
Fisher et al. (2015) (1)	Journal of Management Accounting Research	1 by 3 Between Subject	60 Undergraduate Students	Interaction Conditions (Repeated/Reassigned/Single)	Effort	In a repeated-interaction setting where reciprocal behavior can emerge for strategic reasons, we find that superiors set lower targets and that employees generally respond to low targets with high effort and to high targets with low effort
Fisher et al. (2015) (2)	Journal of Management Accounting Research	1 by 3 Between Subject	32 Undergraduate Business Students	Interaction Conditions (Repeated/Reassigned/Single)	Effort	In a "cheap-talk" economic scenario an individual's preference for reciprocity does not play a stronger role in a single-interaction target-setting scenario when supervisors assign lower targets with greater frequency.
Ho et al.	Accounting and Business Research	Empirical	Price earnings forecasts from UK-Listed firms. (I/B/E/S database)	Price revisions, Stock Returns, Earnings forecasts revisions, Recommendations, Revisions	Target Price Revisions	Revisions are significantly more sensitive to negative than positive excess stock returns.
Brochet et al. (2014)	The Accounting Review	Survey	829 CEO/CFO Turnover Observations	CEO/CFO Turnover	Analyst Migration	CEO Turnover is associated with analyst migration. While this shows no significant comparative advantage for coverage for analysts migrating, it does show increased access to communication with managers.

## A VIEW INTO RECIPROCITY – Green 2019

Coletti et al. (2005) (1)	The Accounting Review	Two-way Between Subject	82 Undergraduate Students	Control System (present or absent)	Cooperative Activity	Control systems can induce cooperative behavior between employees, which builds a trusting relationship for continued positive collaborative behavior.
Coletti et al. (2005) (2)	The Accounting Review	Two-way Between Subject	62 Undergraduate and Graduate Students	Control System	Cooperative Activity	Upon removing a control system employees are more likely to collaborate in subsequent rounds in those groups which have previously established trust.
Ke and Yong	Journal of Accounting Research	Regression of Annual Earnings Forecasts	228,904 firm-analyst-year observations over the period January 1, 1983 to June 30, 2000	Analyst Bias	Earnings Forecast Accuracy	Analysts cater to management to keep job longevity.
Matsumoto (2012)	The Accounting Review	Archival	29,460 firm-quarters from nonregulated industries	Industry, Size, Growth, R%D expenses,	Meet or Exceed analyst expectation	forecast guidance
Mayew (2008)	Journal of Accounting Research	Archival	27,642 quarterly earnings conference call transcripts between Jan 2002- Dec 2004	Decision to buy or sell.	Participative (analyst questions)	Downgrades are associated with managers giving less private information

## A VIEW INTO RECIPROCITY – Green 2019

Youngtae et al. (2012)	The Accounting Review	Archival	28,741 firm year observations from 1991 to 2009	Corporate Social Responsibility activity	Earnings management, real operating activity management, SEC Investigation	Firms that engage in CSR are less likely to Manage earnings, manipulate real operating activities and be subject of SEC investigations.
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**TABLE 1.2**  
**LITERATURE REVIEW - TRUST/HONESTY**

CITATION	JOURNAL	RESEARCH METHOD	SAMPLE	INDEPENDENT VARIABLES	DEPENDENT VARIABLES	KEY RESULTS
Douthit and Stevens (2014) (1)	The Accounting Review	Two by Two Between Subject	120 College Students	Superior Pay and Factual Assertion	Budgetary Slack	Honesty plays a strong role in effecting budgetary slack. In experiment one it is shown to have a significant strength when distributional fairness is not salient when withholding relative superior pay information from a subordinate.
Hannan (2005)	The Accounting Review	2 by 1 Between Subject	64 M.B.A. Students	Profit Shock (Positive or Negative)	Effort/ Firm profit	Firms that provide their employees with higher wages receive higher levels of effort. However, employees have asymmetric views on firm loss in that feel that they are entitled to share profits but not losses.
Kuang and Moser (2009) (1)	The Accounting Review	1 x 2 Between-subject	80 MBA. Students	Contract Setting (Gift Exchange or Optimal available)	Effort/Firm profit	Although optimal contracts yield higher overall profit than gift exchange contracts, it is shown that employees may react negatively by punishing the firm even at their own costs due to the nonreciprocal aspects of the contracts.
Kuang and Moser (2009) (2)	The Accounting Review	1 x 2 Between-subject	40 MBA. Students	Contract Setting (Gift Exchange and Optimal available)	Effort/Firm profit	When both gift exchange and optimal contracts are available employees are more likely to reject the optimal contracts. This leads to lower firm profit. Further there is some support showing that firms will begin to offer gift exchange contracts more often as experience is gained.



Kuang and Moser (2009) (3)	The Accounting Review	1 x 3 Between-subject	40 MBA. Students	Contract Setting (Gift Exchange, Optimal and Hybrid available)	Effort/Firm profit	When all three contract settings are available (Gift Exchange, Optimal and Hybrid) a market scenario takes place in which hybrid contracts become offer the best balance of welfare for the employees and firm profits.
Kuang and Moser (2011)	Contemporary Accounting Research	2 x 2 Between-subject	80 MBA Students	Contract Type (output-based or fixed) and Negotiation (present or not)	Effort/Firm profit	Firms are less likely to allow negotiation under output-based contract scenarios. They are also more likely to accept counter-offers under fixed wage scenarios.  Further, employees show higher efforts for those firms that match their wage counter-offers (engage in negotiation)  Overall output-based contracts are less optimal than fixed.
Bohner et al. (2001)	Journal of Management Accounting Research	Cross-Classification Analysis	131 Laboratory Studies	Task Type, Incentive Scheme, Task Complexity	Performance	Organizations must consider both financial and nonfinancial attributes of incentive schemes as financial initiatives do not always properly motivate individuals.
Maxwell et al. (2003)	Journal of Business Research	2 x 2 Between-subject	70 Undergraduates	Fairness Primer and Reciprocity	Buyer offer and level of concession	Individuals who were primed with fairness condition caused them to become more cooperative.

## A VIEW INTO RECIPROCITY – Green 2019

Maas (2012)	The Accounting Review	Quasi-experiment	167	Aggregate performance	Willingness to obtain additional costly information (Effort)	Managers are willing to incur costs to their own wealth in order to attain information that allows them to allocate bonuses to their employees fairly.
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**TABLE 1.3**  
**LITERATURE REVIEW – DISTRIBUTIONAL FAIRNESS**

CITATION	JOURNAL	RESEARCH METHOD	SAMPLE	INDEPENDENT VARIABLES	DEPENDENT VARIABLES	KEY RESULTS
Douthit and Stevens (2014) (1)	The Accounting Review	Two by Two Between Subject	120 College Students	Superior Pay and Factual Assertion	Budgetary Slack	Honesty plays a strong role in effecting budgetary slack. In experiment one it is shown to have a significant strength when distributional fairness is not salient when withholding relative superior pay information from a subordinate.
Hannan (2005)	The Accounting Review	2 by 1 Between Subject	64 M.B.A. Students	Profit Shock (Positive or Negative)	Effort/ Firm profit	Firms that provide their employees with higher wages receive higher levels of effort. However, employees have asymmetric views on firm loss in that they feel that they are entitled to share profits but not losses.
Kuang and Moser (2009) (1)	The Accounting Review	1 x 2 Between-subject	80 MBA. Students	Contract Setting (Gift Exchange or Optimal available)	Effort/Firm profit	Although optimal contracts yield higher overall profit than gift exchange contracts, it is shown that employees may react negatively by punishing the firm even at their own costs due to the nonreciprocal aspects of the contracts.

Kuang and Moser (2009) (2)	The Accounting Review	1 x 2 Between-subject	40 MBA. Students	Contract Setting (Gift Exchange and Optimal available)	Effort/Firm profit	When both gift exchange and optimal contracts are available employees are more likely to reject the optimal contracts. This leads to lower firm profit. Further there is some support showing that firms will begin to offer gift exchange contracts more often as experience is gained.
Kuang and Moser (2009) (3)	The Accounting Review	1 x 3 Between-subject	40 MBA. Students	Contract Setting (Gift Exchange, Optimal and Hybrid available)	Effort/Firm profit	When all three contract settings are available (Gift Exchange, Optimal and Hybrid) a market scenario takes place in which hybrid contracts become offer the best balance of welfare for the employees and firm profits.
Kuang and Moser (2011)	Contemporary Accounting Research	2 x 2 Between-subject	80 MBA Students	Contract Type (output-based or fixed) and Negotiation (present or not)	Effort/Firm profit	Firms are less likely to allow negotiation under output-based contract scenarios. They are also more likely to accept counter-offers under fixed wage scenarios.  Further, employees show higher efforts for those firms that match their wage counter-offers (engage in negotiation)

						Overall output-based contracts are less optimal than fixed.
Bohner et al. (2001)	Journal of Management Accounting Research	Cross-Classification Analysis	131 Laboratory Studies	Task Type, Incentive Scheme, Task Complexity	Performance	Organizations must consider both financial and nonfinancial attributes of incentive schemes as financial initiatives do not always properly motivate individuals.
Maxwell et al. (2003)	Journal of Business Research	2 x 2 Between-subject	70 Undergraduates	Fairness Primer and Reciprocity	Buyer offer and level of concession	Individuals who were primed with fairness condition caused them to become more cooperative.
Maas (2012)	The Accounting Review	Quasi-experiment	167	Aggregate performance	Willingness to obtain additional costly information (Effort)	Managers are willing to incur costs to their own wealth in order to attain information that allows them to allocate bonuses to their employees fairly.

**TABLE 1.4**  
**LITERATURE REVIEW - INTENTION**

CITATION	JOURNAL	RESEARCH METHOD	SAMPLE	INDEPENDENT VARIABLES	DEPENDENT VARIABLES	KEY RESULTS
Fisher et al. (2015) (1)	Journal of Management Accounting Research	1 by 3 Between Subject	60 Undergraduate Students	Interaction Conditions (Repeated/Reassigned/Single)	Effort	In a repeated-interaction setting where reciprocal behavior can emerge for strategic reasons, we find that superiors set lower targets and that employees generally respond to low targets with high effort and to high targets with low effort
Fisher et al. (2015) (2)	Journal of Management Accounting Research	1 by 3 Between Subject	32 Undergraduate Business Students	Interaction Conditions (Repeated/Reassigned/Single)	Effort	In a "cheap-talk" economic scenario an individual's preference for reciprocity does not play a stronger role in a single-interaction target-setting scenario when supervisors assign lower targets with greater frequency.

Ho et al.	Accounting and Business Research	Empirical	Price earnings forecasts from UK-Listed firms. (I/B/E/S database)	Price revisions, Stock Returns, Earnings forecasts revisions, Recommendations, Revisions	Target Price Revisions	Revisions are significantly more sensitive to negative than positive excess stock returns.
Brochet et al. (2014)	The Accounting Review	Survey	829 CEO/CFO Turnover Observations	CEO/CFO Turnover	Analyst Migration	CEO Turnover is associated with analyst migration. While this shows no significant comparative advantage for coverage for analysts migrating, it does show increased access to communication with managers.
Coletti et al. (2005) (1)	The Accounting Review	Two-way Between Subject	82 Undergraduate Students	Control System (present or absent)	Cooperative Activity	Control systems can induce cooperative behavior between employees, which builds a trusting relationship for continued positive collaborative behavior.
Coletti et al. (2005) (2)	The Accounting Review	Two-way Between Subject	62 Undergraduate and Graduate Students	Control System	Cooperative Activity	Upon removing a control system employees are more likely to collaborate in subsequent rounds

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						in those groups which have previously established trust.
Ke and Yong	Journal of Accounting Research	Regression of Annual Earnings Forecasts	228,904 firm-analyst-year observations over the period January 1, 1983 to June 30, 2000	Analyst Bias	Earnings Forecast Accuracy	Analysts cater to management to keep job longevity.
Matsumoto (2012)	The Accounting Review	Archival	29,460 firm-quarters from nonregulated industries	Industry, Size, Growth, R%D expenses,	Meet or Exceed analyst expectation	forecast guidance
Mayew (2008)	Journal of Accounting Research	Archival	27,642 quarterly earnings conference call transcripts between Jan 2002- Dec 2004	Decision to buy or sell.	Participative (analyst questions)	Downgrades are associated with managers giving less private information
Youngtae et al. (2012)	The Accounting Review	Archival	28,741 firm year observations from 1991 to 2009	Corporate Social Responsibility activity	Earnings management, real operating activity management, SEC Investigation	Firms that engage in CSR are less likely to Manage earnings, manipulate real operating activities and be subject of SEC investigations.



**TABLE 1.5**  
**LITERATURE REVIEW - ATTRIBUTION**

CITATION	JOURNAL	RESEARCH METHOD	SAMPLE	INDEPENDENT VARIABLES	DEPENDENT VARIABLES	KEY RESULTS
Douthit and Stevens (2014) (2)	The Accounting Review	Two by Two Between Subject	120 College Students	Salary Authority and Factual Assertion	Budgetary Slack	In experiment two, honesty is shown to have a significant effect on budgetary slack when reciprocity is made salient in the form of a superiors' ability to reject a subordinates' budgetary proposal.
Christ (2013) (1)	Journal of Management Accounting Research	3 by 2 by 2 Experimental	108 Graduate Accounting Students	Source of Control, Control Existence, Feedback	Effort	Source of control affects reciprocity in the form of an employee's effort levels. Higher saliency of the source of control is met with more intense reactions from employees whom the control is imposed.
Christ (2013) (2)	Journal of Management Accounting Research	3 by 2 by 2 Experimental	106 Graduate Accounting Students	Source of Control, Control Existence, Feedback	Effort	Managers who entrust their employees with more resources are met with positive reciprocity in the form of employees returning more points (measured as effort)
Choi (2014)	The Accounting Review	2 by 2 Fully Crossed	201 Undergraduate Students	Labor Market & Signing Bonus Option	Effort	Employees offered a signing bonus in the presence of an excess workforce environment

						perceive higher trust and thereby increase effort.
Christ, et al. (2012)	The Accounting Review	2 by 2 plus 1 Between-subjects	220 Graduate and Undergraduate Students	Contract Frame & Contract Implementation	Effort	Trust is reciprocal, specifically it is found that penalty contract structures engender greater distrust between principals and agents than do bonus contracts.
Christ and Vance (2018)	Accounting, Organizations and Society	2 by 2 Between-subjects	323 U.S. Participants From Amazon's Mechanical Turk	Management Orientation (trust/control) & Manager's Incentive Frame	Effort to Help or Harm Manager	In addition to showing that penalty contracts can elicit lower levels of effort from employees, penalty contracts coupled with a poor manager/employee relationship can cause employees to actively harm their managers, even at their own detriment.
Schatzberg and Stevens (2008)	Journal of Accounting Research	Two-treatment split-plot factorial design	96 MBA Students	Rejection Power, Pair Rotation, and Experience level of producer	Budgetary Slack & Effort	Manager power to reject budgetary requests reduces budgetary slack by 50%, and also establishes an expectation of reciprocity in which allowing more budgetary slack in turn increases effort of employees.

**TABLE 1.6  
NEGOTIATION**

CITATION	JOURNAL	RESEARCH METHOD	SAMPLE	INDEPENDENT VARIABLES	DEPENDENT VARIABLES	KEY RESULTS
Hatfield, Agolgia and Sanchez (2008) (1)	Journal of Accounting Research	2 by 2 Between-subjects	60 Audit Managers and Partners	Client Negotiation Strategy and Client Retentions	Decision to waive or post adjustment, determining reciprocity-based strategy.	In situations in which management's negotiation strategy is competitive and client retention risk is high, auditors are more likely to utilize a reciprocity-based strategy.
Hatfield, Agolgia and Sanchez (2008) (2)	Journal of Accounting Research	2 by 1 Between-subjects	44 Audit Managers	Auditor Negotiation Strategy	Negotiation goals, limits, and counteroffers	Use of a reciprocity-based strategy can result in more conservative statements, by reducing perceived client pressures to waive or reduce proposed adjustments therefore increasing financial statement quality.
Hatfield and Mullis. (2010)	The Accounting Review	2x2 Between subject Case Study - Delivered by Cover Letter and USB Drive	40 Partners, 60 Managers, and 2 Senior auditors	Magnitude of audit difference, client concession	Negotiation limits	Auditors propose smaller adjustments when the magnitude of the audit difference is high and when the client conceded on an audit issue prior to resolving the difference in estimates.
Hatfield and Mullis. (2015)	Accounting Matters	Empirical	Prior research in psychology and social psychology	n/a	n/a	Designed model illustrating that audit quality and financial statement quality is mediated by Auditor-Client Management Negotiations (ACM)

Sanchez et al. (2007) (1)	The Accounting Review	1 x3 Between-subject	124 Controllers and CFOs	Concession approach	Client's Willingness to post accounting adjustments. Client satisfaction & retention	Clients are more willing to post sales adjustments when concession approaches are utilized. Clients show higher levels of satisfaction and retention rates when concession approaches are utilized.
Sanchez et al. (2007) (2)	The Accounting Review	1 x3 Between-subject	36 Audit Managers	Concession approach	Auditor perceptions	Auditors believe that it is appropriate to adjust their negotiation tactics in order to increase customer satisfaction and facilitation of posting significant adjustments.
Fu et al. (2011)	Auditing: A Journal of Practice and Theory	2 by 2 Between-subjects	99 Managers and Partners from China	Negotiation style (collaborative vs. contentious) & Negotiation Experience	Amount of a proposed audit adjustment relating to an impairment loss believed to ultimately be recorded.	Negotiation experience leads to higher perceived write-downs; this is consistent whether a collaborative or a contentious client negotiation style is employed. Negotiation style does however have an effect when the auditor is less experienced.
Kerler and Killough	Journal of Business Ethics	Experimental Case	89 Professional auditors	Auditors satisfaction with prior client engagement.	Auditors trust and subsequent perceived risk.	An auditors' satisfaction with their client affects trust in the client. i.e. higher levels of satisfaction are associated with higher levels of trust, and vice versa.
Gibbins et al. (2001)	Journal of Accounting Research	Survey	132 Public Audit Firms	Negotiation Issue/Context/Constraint	Outcome Context	Negotiation process affects financial statements materially, and this is a normal part of auditing practice where two parties must reach an agreement. Auditor-client relationship affects potential changes to financial statements.

Shaub (1996)	Behavioral Research in Accounting	Questionnaire	119 Senior and Managers from KPMG	Experience, Incentive, Communication	Trustworthiness, Independence	Experience and situational factors dominate measure of perceived trustworthiness and auditor independence.
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TABLE 2

Dimensions of Reciprocity

Dimension of Reciprocity	Quotes from Previous Literature Defining Sub-Dimension	Previous Behavioral Experiments Used for Item Development
<b>Distributional Fairness</b>	"Fairness equilibrium"	Douthit and Stevens (2015)
<b>Trust</b>	"Trust is a type of expectation that alleviates the fear that one's exchange partner will act opportunistically" -Bradach and Eccles (1989)	Antle and Eppens (1985)
	"The cognitive element in trust is characterized by a cognitive "leap" beyond the expectations that reason and experience alone would warrant" - Lewis and Weigert (1985)	Evans et al. (2001)
		Ke and Yu (2006)
		Ho et al. (2018)
		Schatzberg and Stevens (2008)
	"The extent to which negotiations are fair and commitments are upheld" - Anderson and Narus (1990)	
	"An innate personal characteristic reflecting one's preference for upholding some social norm of behavior, regardless of economic incentives." - Coletti et. al (2005)	
<b>Opposite of Honesty (Agency Theory)</b>	"The excess of resources allocated over the minimum necessary to accomplish the tasks assigned"	

**Intention**

"How the agent perceives the principal's decision to control and how this affects the agent's behavior"

Christ (2013)

Douthit (2017)

Douthit and Stevens  
(2015)

Fisher (2015)

Linderbaum and Levy  
(2010)

Schatzberg and Stevens  
(2008)

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TABLE 3

RECIPROCITY SCALE AND INSTRUCTIONS FOR ADMINISTRATION

Statements below are ones that participants would potentially use to describe behavior they are either likely or unlikely to engage in. Please circle responses that would indicate if you agree or disagree with level of agreement you relate to each statement. It is requested that you do not spend too much on any particular item. Please keep in mind that there are no correct or incorrect answers merely your feelings on each statement.<sup>31</sup>

#	Source	Citation	Primary Construct	
1= Disagree Very Strongly, 2 = Disagree Strongly, 3 = Neither Agree Nor Disagree, 4 = Agree Strongly, 5 = Agree Very Strongly				
1	HEXACO		Trust -	If I want something from a person I dislike, I will act very nicely toward that person in order to get it. 1      2      3      4      5
2	HEXACO		Trust -	I don't see anything wrong with using flattery to get ahead in life. 1      2      3      4      5
3	HEXACO		Trust -	I sometimes try to make people feel guilty so that they will do what I want. 1      2      3      4      5
4	HEXACO		Trust +	I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed. 1      2      3      4      5
5	HEXACO		Trust -	If I want something from someone, I will laugh at that person's worst jokes. 1      2      3      4      5
6	HEXACO		Trust +	I wouldn't pretend to like someone just to get that person to do favors for me. 1      2      3      4      5
7	HEXACO		Trust +	If I want something from someone, I ask for it directly, instead of manipulating them into giving it. 1      2      3      4      5

<sup>31</sup> Initially this was formatted in a way that could be distributed to accounting students within the Intermediate Accounting courses, but I was unable to fit within the course scheduling



## A VIEW INTO RECIPROCITY – Green 2019

8	HEXACO	Trust -	If I want something from someone, I ask for it directly, instead of manipulating them into giving it. 1      2      3      4      5
9	HEXACO	Trust -	If I knew that I could never get caught, I would be willing to steal a million dollars. 1      2      3      4      5
10	HEXACO	Trust +	I wouldn't cheat a person even if he or she was a real "sucker". 1      2      3      4      5
11	HEXACO	Trust -	I wouldn't feel bad about deceiving people who allow themselves to be deceived. 1      2      3      4      5
12	HEXACO	Trust -	I would be tempted to buy stolen property if I were financially tight. 1      2      3      4      5
13	HEXACO	Trust +	I would still pay my taxes even if I would not get caught for avoiding them. 1      2      3      4      5
14	HEXACO	Trust +	I would never accept a bribe, even if it were very large. 1      2      3      4      5
15	HEXACO	Trust -	I would like to know how to smuggle things across the border. 1      2      3      4      5
16	HEXACO	Trust	I'd be tempted to use counterfeit money, if I were sure I could get away with it. 1      2      3      4      5
17	HEXACO	Distributional Fairness +	Having a high level of social status is not very important to me. 1      2      3      4      5
18	HEXACO	Distributional Fairness +	Having a lot of money is not especially important to me. 1      2      3      4      5
19	HEXACO	Distributional Fairness -	I prefer to have high-status, successful people as my friends. 1      2      3      4      5
20	HEXACO	Distributional Fairness -	I would like to live in a very expensive, high-class neighborhood. 1      2      3      4      5

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21	HEXACO	Distributional Fairness	-	I would like to be seen driving around in a very expensive car. 1      2      3      4      5
22	HEXACO	Distributional Fairness	-	I would enjoy being a member of a fancy, high-class casino. 1      2      3      4      5
23	HEXACO	Distributional Fairness	-	I would get a lot of pleasure from owning expensive luxury goods. 1      2      3      4      5
24	HEXACO	Distributional Fairness	-	If there is some chance of improving my social status, I take big risks. 1      2      3      4      5
25	HEXACO	Attribution	-	I deserve more influence and authority than most other people do. 1      2      3      4      5
26	HEXACO	Attribution	+	I am an ordinary person who is no better than others. 1      2      3      4      5
27	HEXACO	Attribution	+	I wouldn't want people to treat me as though I were superior to them. 1      2      3      4      5
28	HEXACO	Attribution	-	I am special and superior in many ways. 1      2      3      4      5
29	HEXACO	Attribution	-	Sometimes I feel that laws should not apply to someone like me. 1      2      3      4      5
30	HEXACO	Attribution	-	I think that I am entitled to more respect than the average person is. 1      2      3      4      5
31	HEXACO	Attribution	-	Some people would say that I have an over-inflated ego. 1      2      3      4      5
32	HEXACO	Attribution	-	I want people to know that I am an important person of high status. 1      2      3      4      5
33	HEXACO	Intention	-	It doesn't take much to make me angry. 1      2      3      4      5

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34	HEXACO	Intention	-	People think of me as someone who has a quick temper. 1      2      3      4      5
35	HEXACO	Intention	+	I rarely feel anger, even when people treat me quite badly. 1      2      3      4      5
36	HEXACO	Intention	+	Most people tend to get angry more quickly than I do. 1      2      3      4      5
37	HEXACO	Intention	+	Some people say that they have never seen me angry. 1      2      3      4      5
38	HEXACO	Intention	-	I find it hard to keep my temper when people insult me. 1      2      3      4      5
39	HEXACO	Intention	-	I react very angrily if I find that someone is trying to cheat me. 1      2      3      4      5
40	HEXACO	Intention	+	People can approach me without having to worry about the mood I'm in. 1      2      3      4      5
41	HEXACO	Intention	+	People say that I am good at controlling my impulses. 1      2      3      4      5
42	HEXACO	Intention	-	I make decisions based on the feeling of the moment rather than on careful thought. 1      2      3      4      5
43	HEXACO	Intention	-	I make a lot of mistakes because I don't think before I act. 1      2      3      4      5
44	HEXACO	Intention	+	I don't allow my impulses to govern my behavior. 1      2      3      4      5
45	HEXACO	Intention	+	I think carefully before doing anything that might be unsafe or unhealthy. 1      2      3      4      5
46	HEXACO	Intention	+	I usually stop myself before doing anything that I might later regret. 1      2      3      4      5

## A VIEW INTO RECIPROCITY – Green 2019

47	HEXACO		Intention	-	Sometimes I do things on impulse that turn out later to be unwise.	1	2	3	4	5
48	HEXACO		Intention	-	I prefer to do whatever comes to mind, rather than stick to a plan.	1	2	3	4	5
49	Christ 2013	JMAR	Intention	(-/+)	I am likely to exert less(more) effort under circumstances in which process controls are(are not) explicitly outlined by my direct superior	1	2	3	4	5
50	Christ 2013	JMAR	Intention	(-/+)	I am likely to exert less(more) effort under circumstances in which I have more direction(freedom) provided in completing tasks.	1	2	3	4	5
51	Christ 2013	JMAR	Intention	-	I feel that my organization perceives me as untrustworthy when controls are explicitly outlined by my superior.	1	2	3	4	5
52	Christ 2013	JMAR	Intention	(+/-)	I believe that controls outlined by my organization(supervisor) are intended to improve the overall success of the organization and employees alike.	1	2	3	4	5
53	Christ 2013	JMAR	Intention	+	I believe that freedom provided by my organization that are consistent over time are intended to improve the overall success of the organization and employees alike	1	2	3	4	5
54	Christ 2013	JMAR	Intention	-	I believe that controls outlined by my organization that are consistent over time are intended to improve the overall success of the organization and employees alike	1	2	3	4	5
55	Christ 2013	JMAR	Intention	+	I believe that freedoms outlined by my direct superior that are consistent over time are intended to improve the overall success of the organization and employees alike	1	2	3	4	5

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56	Christ 2013	JMAR	Intention	-	I believe that controls outlined by my direct superior that are consistent over time are intended to improve the overall success of the organization and employees alike	1	2	3	4	5
57	Christ 2013	JMAR	Intention	+	I believe that as a superior, I take into consideration potential negative feedback from subordinates when imposing controls	1	2	3	4	5
58	Christ 2013	JMAR	Trust	+	I believe that as a superior, I generally expect subordinates to act in the best interest of the organization	1	2	3	4	5
59	Christ 2013	JMAR	Trust	-	I believe that as a superior, I generally expect subordinates to act in their own best interests	1	2	3	4	5
60	Choi 2014	TAR	Attribution	+	I feel that a bonus is a sign of trust from my organization regardless of my individual performance	1	2	3	4	5
61	Choi 2014	TAR	Attribution	+	I feel that a bonus is a sign of trust when my organization is doing well financially	1	2	3	4	5
62	Choi 2014	TAR	Attribution	-	I feel that I am entitled to a bonus for periods in which my organization performs well	1	2	3	4	5
63	Choi 2014	TAR	Attribution	-	I feel that I am entitled to a bonus for periods in which I perform well.	1	2	3	4	5

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64	Choi 2014	TAR	Attribution	-	I feel that I am entitled to a bonus for periods in which I perform well, despite the organizations overall performance.	1	2	3	4	5
65	Choi 2014	TAR	Attribution	+	I feel that a bonus received during periods in which my organization does not perform well is an indication of trust.	1	2	3	4	5
66	Choi 2014	TAR	Attribution	+	I feel that I should not receive a raise for periods in which the organization performs poorly	1	2	3	4	5
67	Choi 2014	TAR	Attribution	+	I feel that bonuses are given solely as a measure of my personal performance	1	2	3	4	5
68	Choi 2014	TAR	Attribution	-	I feel that bonuses are given as a measure of my effect on the organizations' performance as a whole	1	2	3	4	5
69	Douthit and Stevens 2015	TAR	Distributional Fairness	+	If my direct superior endows me with a portion of the profits gained by a project I am likely to exert more effort	1	2	3	4	5
70	Douthit and Stevens 2015	TAR	Intention	-/+	I am(not) often suspicious that exchanges offered to me are actually in my best interest.	1	2	3	4	5
71	Douthit and Stevens 2015	TAR	Intention	-	I believe that there is no such thing as a free meal	1	2	3	4	5

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72	Douthit and Stevens 2015 even if I am benefiting	TAR	Distributional Fairness	-/+	I am likely to reject(accept) an offer that I feel is unfairly distributed	1	2	3	4	5
73	Douthit and Stevens 2015 receiving a greater share, even if I am benefiting.	TAR	Distributional Fairness	-/+	I am likely to reject(accept) an offer that I feel the other party is	1	2	3	4	5
74	Douthit and Stevens 2015 distributed as long as I benefit marginally	TAR	Distributional Fairness	+	I am likely to accept an offer knowing that it may be unfairly	1	2	3	4	5
75	Douthit and Stevens 2015 was unfair and knew would not be caught.	TAR	Distributional Fairness	-	I would be more likely to steal office supplies if I believed my salary	1	2	3	4	5
76	Douthit and Stevens 2015 and knew would not be caught.	TAR	Distributional Fairness	-	I would be more likely to embezzle if I believed my salary was unfair	1	2	3	4	5
77	Schatzberg & Stevens 2008 freedom to complete my task		Trust	+/-	I am likely to exert more(less) effort on a task if my superior has given me more(less)	1	2	3	4	5
78	Schatzberg & Stevens 2008 shared with me a higher(lower) share of profits from activity		Distributional Fairness	+/-	I am likely to exert more(less) effort on a task if my superior has	1	2	3	4	5
79	Schatzberg & Stevens 2008 ability to punish me directly.		Intention		I am likely to exert more(less) effort on a task if my superior has(does not have) the	1	2	3	4	5

## A VIEW INTO RECIPROCITY – Green 2019

80	Schatzberg & Stevens 2008 to punish me directly.	Trust	+/-	I am likely to exert equal levels of effort on a task regardless of my superiors the ability					
					1	2	3	4	5
81	Schatzberg & Stevens 2008 full effort on a task	Trust	?	I am likely to reward(punish) an employee if I feel that they are (are not) exerting their					
					1	2	3	4	5
82	Fisher et al. (2015)	JMAR	Time?	+	I am likely to trust individuals that I have repeated positive interactions with				
					1	2	3	4	5
83	Fisher et al. (2015)	JMAR	Time?	-	I am likely to distrust individuals that I have repeated negative interactions with				
					1	2	3	4	5
84	Fisher et al. (2015)	JMAR	Time?	+	I am likely to entrust subordinates who I have had extended periods of interaction with				
					1	2	3	4	5
85	Fisher et al. (2015) with regardless of positive or negative interaction	JMAR	Time?	+	I am likely to be more honest with superiors who I have had extended periods of interaction				
					1	2	3	4	5
86	Fisher et al. (2015)	JMAR	Time?	+	I am more likely to show leniency to subordinates whom I expect repeated interactions with				
					1	2	3	4	5
87	Fisher et al. (2015) interactions with	JMAR	Time?	+	I am more likely to give higher levels of efforts for superiors whom I expect repeated				
					1	2	3	4	5



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88	Linderbaum and Levy (2010)	JOM	Intention	+	Feedback contributes to my success at work.
			1	2	3 4 5
89	Linderbaum and Levy (2010)	JOM	Intention	+	To develop my skills at work, I rely on feedback.
			1	2	3 4 5
90	Linderbaum and Levy (2010)	JOM	Intention	+	Feedback is critical for improving performance.
			1	2	3 4 5
91	Linderbaum and Levy (2010)	JOM	Intention	+	Feedback from supervisors can help me advance in a company.
			1	2	3 4 5
92	Linderbaum and Levy (2010)	JOM	Intention	+	I find that feedback is critical for reaching my goals.
			1	2	3 4 5
93	Linderbaum and Levy (2010)	JOM	Attribution	+	It is my responsibility to apply feedback to improve my performance.
			1	2	3 4 5
94	Linderbaum and Levy (2010)	JOM	Attribution	+	I hold myself accountable to respond to feedback appropriately.
			1	2	3 4 5
95	Linderbaum and Levy (2010)	JOM	Attribution	+	I don't feel a sense of closure until I respond to feedback.
			1	2	3 4 5
96	Linderbaum and Levy (2010)	JOM	Attribution	+	If my supervisor gives me feedback, it is my responsibility to respond to it.
			1	2	3 4 5

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97	Linderbaum and Levy (2010)	JOM	Attribution	+	I feel obligated to make changes based on feedback.	1	2	3	4	5
98	Linderbaum and Levy (2010)	JOM	Attribution	+	I feel self-assured when dealing with negative feedback.	1	2	3	4	5
99	Linderbaum and Levy (2010)	JOM	Attribution	+	Compared to others, I am more competent at handling negative feedback.	1	2	3	4	5
100	Linderbaum and Levy (2010)	JOM	Attribution	+	I believe that I have the ability to deal with negative feedback effectively.	1	2	3	4	5
101	Linderbaum and Levy (2010)	JOM	Attribution	+	I feel confident when responding objectively to both positive and negative feedback.	1	2	3	4	5
102	Linderbaum and Levy (2010)	JOM	Attribution	+	I know that I can handle positive or negative feedback that I receive objectively.	1	2	3	4	5
103	Ke and Yu (2006)	JAR	Trust	-	I would be likely to bias my decisions in order to increase my ability to obtain superior information	1	2	3	4	5
104	Ke and Yu (2006)	JAR	Trust	-	I would not bias my decision if doing so protected my employment	1	2	3	4	5

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105	Ke and Yu (2006)	JAR	Trust	+	It is never okay to bias a decision if I know that it is misleading	1	2	3	4	5
106	Ho et al. (2018)	Trust	-		I would be likely to revise a decision if my original stance affected my employment security.	1	2	3	4	5
107	Ho et al. (2018)	Trust	-		It is ethical to give misleading information so long as it provides job security.	1	2	3	4	5
108	Ho et al. (2018)	Trust	-		It is okay to revise my decision to one that is dishonest so long as others do as well.	1	2	3	4	5
109	Ho et al. (2018)	Trust	-		It is ethical to give misleading information so long as my employer benefits.	1	2	3	4	5
110	Ho et al. (2018)	Trust	-		It is okay to give misleading information so long as there is a consensus with other decision makers.	1	2	3	4	5
111	Evans (2001)	Trust	-/+		It is (never)okay to keep excess resources when making budgetary decisions even without potential of being punished by my superior.	1	2	3	4	5
112	Evans (2001)	Trust	-		Requesting additional funding is fine as long as there is no potential for disciplinary action	1	2	3	4	5

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113	Evans (2001)	Trust +	Keeping excess budget is not ethical even if doing so would go unnoticed by my supervisor.	1	2	3	4	5
114	Evans (2001)	Trust -	Keeping excess budget is ethical if I feel that my supervisor does not trust me.	1	2	3	4	5
115	Evans (2001)	Trust -	Keeping excess funds from my organization is fine as long as supervisor review allows.	1	2	3	4	5
116	Evans (2001)	Trust +	Keeping excess funds from my organization is not ethical even if supervisor review allows.	1	2	3	4	5
117	Douthit (2017) oversight	Intention	I am likely to act more honestly if I know that my superior is able to increase his level of oversight	1	2	3	4	5
118	Lowe and Recker (1994)	Attribution	I am(am not) likely to assign blame to others if I am aware that an outcome was negative.	1	2	3	4	5
119	Lowe and Recker (1994)	Attribution	Outcomes outweigh the means	1	2	3	4	5
120	Lowe and Recker (1994)	Attribution	I agree with the statement "no harm, no foul"	1	2	3	4	5

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- 121 Fehr and Gächter (1993)  
Distributational Fairness I am willing to punish unfair acts even if it is at a personal loss  
1 2 3 4 5
- 122 Fehr and Gächter (1993)  
Distributational Fairness I am willing to reward acts of kindness even if it is at a personal loss  
1 2 3 4 5
- 123 Fehr and Gächter (1993)  
Distributational Fairness I believe that sharing my resources is important if it improves common welfare  
1 2 3 4 5
- 124 Fehr and Gächter (1993)  
Distributational Fairness My own needs outweigh those of common welfare  
1 2 3 4 5
- 125 Fehr and Gächter (1993)  
Distributational Fairness Altruism is necessary for general well-being of society.  
1 2 3 4 5
- 126 Fehr and Gächter (1993)  
Distributational Fairness Pure altruism does not exist in real practice.  
1 2 3 4 5

TABLE 4

List of 45 Items for the Initial Q-Sort Task

<u>Dimension</u>	<u>Question</u>
Trust	If I want something from a person I dislike, I will act very nicely toward that person to get it.
Trust	I sometimes try to make people feel guilty so that they will do what I want.
Trust	If I want something from someone, I ask for it directly, instead of manipulating them into giving it.
Trust	If I knew that I could never get caught, I would be willing to steal a million dollars.
Trust	I wouldn't cheat a person even if he or she was a real "sucker".
Trust	I would still pay my taxes even if I would not get caught for avoiding them.
Trust	I'd be tempted to use counterfeit money, if I were sure I could get away with it.
Trust	It is okay to use deception to obtain information superior to that of my peers.
Trust	Keeping excess funds is okay so long as if would go unnoticed by my manager.
Trust	Use of deception is fine so long as it provides a complete advantage.
Trust	I am likely to distrust individuals that I have repeated negative interaction with.
Trust	I am likely to trust individuals whom I have had extended periods of interaction with.
Trust	I am likely to be more honest with managers who I have had extended periods of interaction with, regardless of positive or negative interaction.
Trust	I am more likely to show leniency to employees whom I expect repeated interactions with.
Distributional Fairness	Having a high level of social status is not very important to me.
Distributional Fairness	Having a lot of money is not especially important to me.

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Distributional Fairness	I am likely to reject an offer that I feel is unfair even if I benefit.
Distributional Fairness	Stealing office supplies is justified if my salary is unfair and knew I would not be caught.
Distributional Fairness	I would be more likely to embezzle if I believed my salary was unfair and knew I would not be caught.
Distributional Fairness	I am likely to exert more effort on task if my manager has shared with me a portion of the profits.
Distributional Fairness	I am willing to punish unfair acts even if it is at a personal loss.
Distributional Fairness	I am willing to reward acts of kindness even if it is at a personal loss.
Distributional Fairness	I believe that sharing my resources is important if it improves common welfare.
Distributional Fairness	My own needs outweigh those of the common welfare.
Intention	It doesn't take much to make me angry.
Intention	I rarely feel anger even when people treat me quite badly.
Intention	Most people tend to angry more quickly than I do.
Intention	I make decisions based on the feeling of the moment rather than on careful thought.
Intention	I make a lot of mistakes because I don't think before I act.
Intention	I usually stop myself before doing anything that I might later regret.
Intention	Sometimes I do things on impulse that turn out later to be unwise.
Intention	I feel that my organization perceives me as untrustworthy when controls are explicitly outlined by my manager.
Intention	I believe that direction outlined by my manager is intended to improve the overall success of the organization and employees alike.

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Intention	I am likely to exert more effort under circumstances in which directions are explicitly outlined by my manager.
Attribution	I hold myself accountable to respond too feedback appropriately.
Attribution	I feel obligated to make change based on feedback.
Attribution	I believe that I can deal with negative feedback objectively.
Attribution	I feel self-assured when dealing with negative feedback.
Attribution	I think that I am entitled to more respect than the average person is.
Attribution	I feel that I am entitled to a bonus for periods in which I perform well.
Attribution	I feel that bonuses are given solely as a measure of my personal performance.
Attribution	I feel that bonuses are given as a measure of my contribution towards my organizations overall success.
Attribution	I am special and superior in many ways.
Attribution	Sometimes I feel that laws should not apply to someone like me.
Attribution	I am likely to assign blame to others if I am aware that an outcome that is negative.

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**TABLE 5**

**Factor Loadings from EFA Principal Components Analysis with oblique Rotation**

MTurk Survey EFA results: Round 1				
Item	Factor Loadings:			
Each item indicated with a '*' was utilized in the final 2 factor measure.				
N = 166		Factor1	Factor2	Factor3
<b>Trust/Honesty</b>	Q#			
If I want something from a person I dislike I will act very nicely toward that person in order to get it.	Q1*	0.59		0.184
I sometimes try to make people feel guilty so that they will do what I want.	Q2*	0.807	-0.138	
If I knew that I could never get caught I would be willing to steal a million dollars.	Q3*	0.621	-0.383	0.317
If I want something from someone I ask for it directly instead of manipulating them into giving it.	Q4	0.304	0.396	
I would not cheat a person even if he or she was a real "sucker".	Q5	-0.173	0.551	0.238
I would still pay my taxes even if I would not get caught for avoiding them.	Q6	0.597		
I would be tempted to use counterfeit money if I knew I could get away with it.	Q7*	0.715	-0.29	0.156
It is okay to use deception to obtain information superior to that of my peers.	Q8*	0.79		
Keeping excess funds from my organization is okay if my manager does not notice.	Q9*	0.826	0.16	-0.106
Use of deception is fine if it provides me with a competitive advantage.	Q10*	0.798	-0.121	
<b>Distributional Fairness</b>				
Having a high level of social status is not very important to me.	Q11*		0.467	0.159
Having a lot of money is not especially important to me.	Q12	0.348	0.467	-0.148
I am likely to reject an offer that I feel is unfair even if I benefit.	Q13*	0.161	0.453	0.176
Stealing office supplies is justified if my salary is unfair and I know I will not be caught.	Q14	0.817		

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I would be more likely to embezzle if I believed my salary was unfair and know I would not be caught.	Q15*	0.795	-0.133	
I am likely to exert more effort on task if my manager has shared a portion of the profits with me.	Q16	0.108	-0.176	0.596
I am willing to punish unfair acts even if it is at a personal loss.	Q17	0.386	0.333	
I am willing to reward acts of kindness even if it is at a personal loss.	Q18*		0.642	0.216
I believe that sharing my resources is important if it improves common welfare.	Q19*		0.553	0.213
My own needs outweigh those of the common welfare.	Q20	0.623		
<b>Intention</b>				
It does not take much to make me anger.	Q21	0.683		
I rarely feel anger even when people treat me quite badly.	Q22	0.426	0.304	-0.126
Most people tend to anger more quickly than I do.	Q23	0.102	0.266	
I make decisions based on the feeling of the moment rather than on careful thought.	Q24	0.79	0.186	-0.138
I make a lot of mistakes because I do not think before I act.	Q25	0.808	0.177	
I usually stop myself before doing anything that I might later regret.	Q26		0.17	0.336
Sometimes I do things on impulse that turn out later to be unwise.	Q27	0.648		
I feel that my organization perceives me as untrustworthy when controls are explicitly outlined by my manager.	Q28	0.819		-0.202
I believe that direction outlined by my manager is intended to improve the overall success of the organization and employees alike.	Q29			0.334
I am likely to exert more effort under circumstances where directions are explicitly outlined by my manager.	Q30	0.273	0.18	0.34
<b>Conditional</b>				
I am likely to reward a coworker if I feel that they are exerting their full effort on a task.	Q31		0.198	0.469
I am likely to punish a coworker if I feel that they are not exerting their full effort on a task.	Q32	0.597		
I would never accept a bribe even if it were very large.	Q33*		0.558	-0.162
I would get a lot of pleasure from owning expensive luxury goods	Q34	0.418	-0.137	0.226

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If I were in the role of a superior I would take into consideration potential negative feedback from subordinates when imposing controls.	Q35*		0.244	0.473
If I were in the role of a superior I would take into consideration potential positive feedback from subordinates when allowing greater freedom.	Q36		0.175	0.497
I am likely to trust individuals that I have had repeated positive interactions with.	Q37	-0.217		0.607
I am likely to distrust individuals that I have had repeated positive interactions with.	Q38		0.184	0.528
I am more likely to show leniency to individuals whom I expect repeated interactions with.	Q39			0.524
I am more likely to give higher levels of effort towards individuals whom I expect repeated interaction with.	Q40	0.164		0.516
I am likely to be more honest with individuals who I have had extended periods of interaction with, regardless of positive or negative experience.	Q41	0.162	0.295	0.324

\* Items marked with an asterisk (\*) were retained for the final 14-item, 2-factor model presented in Table 7.

<sup>a</sup> Conditional questions were items that did not immediately seem to fit directly to one specific dimension, but were deemed to be useful for further research for factor loadings.

**TABLE 6**

<b>CFA Results Using Reduced Scale with Three Factors</b>			
MTurk Survey EFA results: Round 3	Trust	Distributional Fairness	Intention
Alpha	0.909	0.582	0.584
N=168			
Items	7	7	5
$X^2 = 413.886, p < 0.001, CFI = 0.757, TLI = 0.719, RMSEA = 0.113, SRMR = 0.095$			

TABLE 7

## CFA Results Using Reduced Scale with Two Factors

	Trust	Distributional Fairness
Alpha	0.923	0.652
N=168		
Items <sup>a</sup>	8	6
Q1	0.654	0.000
Q2	0.829	0.000
Q3	0.743	0.000
Q7	0.810	0.000
Q8	0.789	0.000
Q9	0.748	0.000
Q10	0.809	0.000
Q15	0.829	0.000
Q11	0.000	0.379
Q13	0.000	0.413
Q18	0.000	0.802
Q19	0.000	0.659
Q33	0.000	0.397
Q35	0.000	0.383

$X^2 = 305.528$ ,  $p < 0.001$ , CFI = 0.807, TLI = 0.768, RMSEA = 0.134 SRMR = 0.087

<sup>a</sup> See Table 5 for the detailed wording of each item.

TABLE 8

## Fit Measurements for Single Dimension Scales

Measure	X <sup>2</sup>	p	CFI	TLI	RMSEA	SRMR
Sensitivity to Trust	151.37	<0.001	0.863	0.808	0.198	0.060
Sensitivity to Distributional Fairness	149.11	<0.001	0.975	0.959	0.047	0.044

## Variable Definitions:

## Sensitivity to Trust:

The participants' average overall sensitivity to reciprocity score average between both the pre-survey and post-survey deployed for all Items within the 'Trust' dimension. Scale ranges from 1-5, 1 being very low, 5 being very high.

## Sensitivity to Distributional Fairness:

Fairness Sensitivity: The participants' average overall sensitivity to reciprocity score average between both the pre-survey and post-survey deployed for all Items within the 'Distributional Fairness' dimension. Scale ranges from 1-5, 1 being very low, 5 being very high.

TABLE 9

## Send and Return Statistics

Participants		Send %	Return %
N	Valid	51	51
	Missing	0	0
Mean		55.29%	24.64%
Median		50.00%	25.00%
Std. Deviation		27.74%	20.76%

## Variable Definitions:

Send %: The percentage of the employee's initial endowment sent to their manager.

Employees are initially endowed with \$10

Return %: The percentage of the wealth the manager returns to their employee. This is calculated as (manager's return amount) / (employee transfer \* 3). Managers can only return an amount between zero and the amount they received from the employee's initial transfer multiplied by 3.

TABLE 10				
Average Profit				
Participants		All	<i>Employee</i>	<i>Manager</i>
N	Valid	101	51	50
	Missing	0	0	0
Mean		\$10.66	\$9.78	\$11.56
Median		10.00	9.00	11.00
Std. Deviation		4.43	3.961	4.734

\*All participants' decisions were made in whole dollar amounts.

\*\*These amounts do not reflect the additional \$5.00 show up fee paid at the end of the experiment.

Variable Definitions:

All: The wealth retained by the participants designated as the employees at the end of both the employee and manager decision rounds.

Employee: The wealth retained by the participants designated as the employees at the end of both the employee and manager decision rounds.

Manager: The wealth retained by the participants designated as the managers at the end of both the employee and manager decision rounds.



**TABLE 11**

**Sensitivity to Reciprocity Scores**

Participants		All	Employee	Manager
N	Valid	101	51	50
	Missing	0	0	0
Mean		2.91	2.92	2.92
Median		2.89	2.86	2.89
Std. Deviation		0.365	0.339	0.393

Variable Definitions:

All: The average of all sensitivity to reciprocity measurement questions answered by all participants during both the pre-survey, and post survey.

Employee: The average of all sensitivity to reciprocity measurement questions answered by employees during both the pre-survey, and post survey.

Manager: The average of all sensitivity to reciprocity measurement questions answered by managers during both the pre-survey, and post survey.

**TABLE 12**

**Employee Sensitivity and Reciprocal Consideration**

		Sensitivity to Reciprocity	Level of Consideration
Sensitivity to Reciprocity	Pearson Correlation	1	0.073
	Sig. (2-tailed)		0.613
	N	51	51
Level of Consideration	Pearson Correlation	.073	1
	Sig. (2-tailed)	.613	
	N	51	51

**Variable Definitions:**

**Sensitivity to Reciprocity:** The participants' average overall sensitivity to reciprocity score average between both the pre-survey and post-survey deployed. Scale ranges from 1-5, 1 being very low, 5 being very high.

**Level of consideration:** Participants answered a post experimental question gauging how much consideration of their paired participants' actions weighted on their exchange decision.

**TABLE 13**

**Employee Sensitivity and Reciprocal Consideration - Mean T-Test**

<b>Level of Consideration</b>			
Sensitivity to Reciprocity	Mean	N	Std. Deviation
Low Sensitivity	4.11538	26	1.03255
High Sensitivity	4.2	25	1.22474
Total	4.15686	51	1.12022

**Variable Definitions:**

Low/High Sensitivity: Employee's reciprocity was classified as either high or low by a median split based on aggregate averages of their Sensitivity to Reciprocity scores.

Level of consideration: Participants answered a post experimental question gauging how much consideration of their paired participants' actions weighted on their exchange decision.

**TABLE 14**

**Employee Sensitivity and Endowment Sent**

		Sensitivity to Reciprocity	Send %
Sensitivity to Reciprocity	Pearson Correlation	1	0.083
	Sig. (2-tailed)		0.565
	N	51	51
Endowment Sent	Pearson Correlation	0.083	1
	Sig. (2-tailed)	0.565	
	N	51	51

**Variable Definitions:**

**Sensitivity to Reciprocity:** The participants' average overall sensitivity to reciprocity score average between both the pre-survey and post-survey deployed. Scale ranges from 1-5, 1 being very low, 5 being very high.

**Send %:** The percentage of the employee's initial endowment sent to their manager. Employees are initially endowed with \$10.

TABLE 15

## Employee Sensitivity and Endowment Sent - Mean T-Test

Level of Consideration			
Sensitivity to Reciprocity	Mean	N	Std. Deviation
Low Sensitivity	4.11538	26	0.24536
High Sensitivity	4.2	25	0.31236
Total	4.15686	51	0.27738

## Variable Definitions:

Low/High Sensitivity: Employee's reciprocity was classified as either high or low by a median split based on aggregate averages of their Sensitivity to Reciprocity scores.

Send %: The percentage of the employee's initial endowment sent to their manager. Employees are initially endowed with \$10.

**TABLE 16**

<b>Employee Transfer and Manager Return</b>			
		% Sent by Employee	% Returned by Manager
% Sent by Employee	Pearson Correlation	1	0.724**
	Sig. (2-tailed)		0.000
	N	51	51
% Returned by Manager	Pearson Correlation	0.724**	1
	Sig. (2-tailed)	0.000	
	N	51	51

**Variable Definitions:**

**Employee %:** The percentage of the employee's initial endowment of \$10 transferred to their manager. Employee % was classified as either high or low by a median split based on all participant's percentages.

**% Returned by Manager:** The percentage of endowment returned divided by the amount received from the employee's initial transfer. Employee's initial endowment was \$10, any amount transferred to the manager was multiplied by 3.

**TABLE 17**  
**Descriptive Statistics**

		<b>All Manager</b>	
	n	50	
	Average % Returned	26.13%	
	Median % Returned	26.67%	
	Average Returned (Std. Dev)	0.2063	
		<b>Employee % Low</b>	<b>Employee % High</b>
		Cell 1	Cell 2
<b>Manager Low Reciprocity</b>	n	9	14
	Average % Returned (Std. Dev)	18.09% (.1290)	41.07% (.2085)
		Cell 3	Cell 4
<b>Manager High Reciprocity</b>	n	14	14
	Average % Returned (Std. Dev)	7.22% (.1081)	35.99% (.1402)

Participants assumed the role of either an employee or manager for a hypothetical firm, both of whom made a decision to share a portion of their wealth with one another. Each participant made one transfer decision.

**Variable Definitions:**

**Average % Returned (Std. Dev):** The percentage of endowment returned divided by the amount received from the employee's initial transfer. Employee's initial endowment was \$10, any amount transferred to the manager was multiplied by 3.

**Employee %:** The percentage of the employee's initial endowment of \$10 transferred to their manager. Employee % was classified as either high or low by a median split based on all participant's percentages.

**Manager Reciprocity:** Manager's reciprocity was classified as either high or low by a median split based on aggregate averages of their Sensitivity to Reciprocity scores.

TABLE 18

**Test of Between-Subject Effects of Employee % Transferred and Manager's Reciprocity on Manager's Average % Returned (n=50)**

Source of variance	df	<i>F</i>	<i>p</i> -value, two-tailed
Intercept	1	133.787	<0.001
Employee %	1	34.190	<0.001
Manager Reciprocity	1	3.243	0.078
Employee % * Manager Reciprocity	1	0.428	0.516
Error	46		

Variable Definitions:

Employee %: The percentage of the employee's initial endowment of \$10 transferred to their manager. Employee % was classified as either high or low by a median split based on all participant's percentages

Manager Reciprocity: Manager's reciprocity was classified as either high or low by a median split based on aggregate averages of their Sensitivity to Reciprocity scores.



**TABLE 19**

**Final Scale Correlation Table**

	Q1	Q2	Q3	Q7	Q8	Q9	Q10	Q11	Q13	Q15	Q18	Q19	Q33	Q35	avg
Q1	1	.621**	.473**	.461**	.475**	.475**	.589**	-.063	.005	.519**	-.084	-.164*	-.138	.150	.638**
Q2	.621**	1	.583**	.621**	.667**	.576**	.746**	-.135	.104	.672**	-.070	-.044	-.029	-.014	.782**
Q3	.473**	.583**	1	.782**	.561**	.458**	.534**	-.144	.071	.634**	-.143	-.050	-.416**	.050	.670**
Q7	.461**	.621**	.782**	1	.577**	.618**	.565**	-.154*	.082	.761**	-.089	-.069	-.309**	.014	.736**
Q8	.475**	.667**	.561**	.577**	1	.651**	.763**	-.017	.216**	.582**	-.001	.018	-.053	-.010	.785**
Q9	.475**	.576**	.458**	.618**	.651**	1	.586**	-.008	.200**	.694**	.081	.092	.123	.004	.796**
Q10	.589**	.746**	.534**	.565**	.763**	.586**	1	-.076	.035	.607**	-.019	-.057	-.037	.075	.776**
Q11	-.063	-.135	-.144	-.154*	-.017	-.008	-.076	1	.130	-.070	.259**	.272**	.272**	.205**	.132
Q13	.005	.104	.071	.082	.216**	.ks200**	.035	.130	1	.090	.394**	.209**	.122	.101	.316**
Q15	.519**	.672**	.634**	.761**	.582**	.694**	.607**	-.070	.090	1	-.068	-.070	-.080	.062	.790**
Q18	-.084	-.070	-.143	-.089	-.001	.081	-.019	.259**	.394**	-.068	1	.527**	.302**	.305**	.221**
Q19	-.164*	-.044	-.050	-.069	.018	.092	-.057	.272**	.209**	-.070	.527**	1	.284**	.289**	.211**
Q33	-.138	-.029	-.416**	-.309**	-.053	.123	-.037	.272**	.122	-.080	.302**	.284**	1	.087	.092
Q35	.150	-.014	.050	.014	-.010	.004	.075	.205**	.101	.062	.305**	.289**	.087	1	.247**
Average	.638**	.782**	.670**	.736**	.785**	.796**	.776**	.132	.316**	.790**	.221**	.211**	.092	.247**	1

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

**TABLE 19 (continued)**  
**Item Reference**

Q1	If I want something from a person I dislike I will act very nicely toward that person in order to get it.
Q2	I sometimes try to make people feel guilty so that they will do what I want.
Q3	If I knew that I could never get caught I would be willing to steal a million dollars.
Q7	I would be tempted to use counterfeit money if I knew I could get away with it.
Q8	It is okay to use deception to obtain information superior to that of my peers.
Q9	Keeping excess funds from my organization is okay if my manager does not notice.
Q10	Use of deception is fine if it provides me with a competitive advantage.
Q11	Having a high level of social status is not very important to me.
Q13	I am likely to reject an offer that I feel is unfair even if I benefit.
Q15	I would be more likely to embezzle if I believed my salary was unfair and know I would not be caught.
Q18	I am willing to reward acts of kindness even if it is at a personal loss.
Q19	I believe that sharing my resources is important if it improves common welfare.
Q33	I would never accept a bribe even if it were very large.
Q35	If I were in the role of a superior I would take into consideration potential negative feedback from subordinates when imposing controls.

**TABLE 20**

**Employee Trust Sensitivity and Reciprocal Consideration**

		Trust Sensitivity	Level of Consideration
Trust Sensitivity	Pearson Correlation	1	0.201
	Sig. (2-tailed)		0.158
	N	51	51
Level of Consideration	Pearson Correlation	0.201	1
	Sig. (2-tailed)	0.158	
	N	51	51

Variable Definitions:

Trust Sensitivity: The participants' average overall sensitivity to reciprocity score average between both the pre-survey and post-survey deployed for all Items within the 'Trust' dimension. Scale ranges from 1-5, 1 being very low, 5 being very high.

Level of consideration: Participants answered a post experimental question gauging how much consideration of their paired participants' actions weighted on their exchange decision.

TABLE 21

**Employee Distributional Fairness Sensitivity and Reciprocal Consideration**

		Distributional Fairness Sensitivity	Level of Consideration
Distributional Fairness Sensitivity	Pearson Correlation	1	-0.208
	Sig. (2-tailed)		0.143
	N	51	51
Level of Consideration	Pearson Correlation	-0.208	1
	Sig. (2-tailed)	0.143	
	N	51	51

## Variable Definitions:

**Distributional Fairness Sensitivity:** The participants' average overall sensitivity to reciprocity score average between both the pre-survey and post-survey deployed for all Items within the 'Distributional Fairness' dimension. Scale ranges from 1-5, 1 being very low, 5 being very high.

**Level of consideration:** Participants answered a post experimental question gauging how much consideration of their paired participants' actions weighted on their exchange decision.

**TABLE 22**

**Employee Trust Sensitivity and Endowment Sent**

		Trust Sensitivity	Send %
Trust Sensitivity	Pearson Correlation	1	-0.013
	Sig. (2-tailed)		0.926
	N	51	51
Endowment Sent	Pearson Correlation	-0.013	1
	Sig. (2-tailed)	0.926	
	N	51	51

Variable Definitions:

Trust Sensitivity: The participants' average overall sensitivity to reciprocity score average between both the pre-survey and post-survey deployed for all Items within the 'Trust' dimension. Scale ranges from 1-5, 1 being very low, 5 being very high.

Endowment Sent: The percentage of the employee's initial endowment sent to their manager. Employees are initially endowed with \$10.

TABLE 23

## Employee Distributional Fairness Sensitivity and Endowment Sent

		Distributional Fairness Sensitivity	Send %
Distributional Fairness Sensitivity	Pearson Correlation	1	0.155
	Sig. (2-tailed)		0.276
	N	51	51
Endowment Sent	Pearson Correlation	0.155	1
	Sig. (2-tailed)	0.276	
	N	51	51

## Variable Definitions:

**Distributional Fairness Sensitivity:** The participants' average overall sensitivity to reciprocity score average between both the pre-survey and post-survey deployed for all Items within the 'Distributional Fairness' dimension. Scale ranges from 1-5, 1 being very low, 5 being very high.

**Endowment Sent:** The percentage of the employee's initial endowment sent to their manager. Employees are initially endowed with \$10.

TABLE 24

**Test of Between-Subject Effects of Employee % Transferred and Manager's Trust Sensitivity on Manager's Average % Returned (n=50)**

Source of variance	df	<i>F</i>	<i>p</i> -value, two-tailed
Intercept	1	69.086	<0.001
Employee %	1	35.430	<0.001
Trust Sensitivity	1	0.048	0.827
Employee % * Trust Sensitivity	1	0.389	0.536
Error	46		

**Variable Definitions:**

**Employee %:** The percentage of the employee's initial endowment of \$10 transferred to their manager. Employee % was classified as either high or low by a median split based on all participant's percentages

**Trust Sensitivity:** Manager's trust sensitivity was classified as either high or low by a median split based on aggregate averages of their Sensitivity to Trust scores.

TABLE 25

**Test of Between-Subject Effects of Employee % Transferred and Manager's Distributional Fairness Sensitivity on Manager's Average % Returned (n=50)**

Source of variance	df	<i>F</i>	<i>p</i> -value, two-tailed
Intercept	1	67.802	<0.001
Employee %	1	35.585	<0.001
Distributional Fairness Sensitivity	1	0.138	0.712
Employee % * Trust Sensitivity	1	0.003	0.956
Error	46		

Variable Definitions:

Employee %: The percentage of the employee's initial endowment of \$10 transferred to their manager. Employee % was classified as either high or low by a median split based on all participant's percentages

Distributional Fairness Sensitivity: Manager's trust sensitivity was classified as either high or low by a median split based on aggregate averages of their Sensitivity to Distributional Fairness scores.