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Framing Perceptions of Justice in a Public Goods Dilemma

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FRAMING PERCEPTIONS OF JUSTICE IN A PUBLIC GOODS DILEMMA

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DEDICATION

To my grandfather, Ismail Eryigit

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ABSTRACT

Provision of public goods often requires sufficient contributions from group members, and improper contributions are likely to produce feelings of injustice. Building on previous research, I develop a justice theory that explains how framing social comparisons in particular ways will make actors more or less sensitive and reactive to departures from fair contributions. In turn, this is predicted to impact justice-restoring behaviors such as reducing subsequent contributions to a public good, punishing group members, or exiting the group. This integrated theory shows how varying the way key pieces of information are framed affects fairness perceptions and subsequent behaviors in social dilemma settings as well as a broader contribution and/or reward settings. By integrating theories of distributive justice and literature on framing the following dissertation aims to better understand the perceptual, emotional, and behavioral effects of socially constructed frames on behavior public goods dilemma situations.

The proposed theory is mathematically formalized and utilized to generate logically connected assumptions and derivations. The key terms, assumptions, and derivations are operationalized through the testable hypotheses aiming to measure variations in justice evaluations and justice restoring behaviors across different theoretical conditions. The hypotheses are tested in a hypothetical vignette and a standard laboratory-based public goods setting.

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CHAPTER 1

INTRODUCTION

In a public goods dilemma, people have to decide to follow either their selfish or collective interest (Dawes 1980; Kollock 1998). The big question is what factors affect people's decisions. I assume that one of those factors is surely how fair people feel the contributions are that they make and other people make relative to one another and/or some other standards for a given situation. This dissertation proposes an integrated distributive justice theory regarding socially constructed frames in order to expand our understanding of the perception of contribution and reward behaviors as just or unjust in small groups. This theory explains how individuals' justice evaluations are shaped by their surrounding social contexts which may have been shaped by the way key pieces of information on contribution and/or reward are introduced (i.e. *social frame*). This dissertation also extends distributive justice theory to the realm of social dilemmas, more specifically public goods settings.

Public goods (or *collective goods*) can be defined as goods that are supported by public contributions, but are available to any group member regardless of his/her personal contributions (Dawes 1980; Kollock 1998; Komorita and Parks 1996; Yamagishi 1995). Many public services (e.g. public parks, street lights, public radio, light houses, etc.) are examples of public goods and rely on taxes and donations from the general public. Decisions on whether to contribute to a public good are complex. Individuals can maximize their personal benefits by using a public good while not contributing to its maintenance

(i.e. *free-riding*), but if too many people choose to maximize personal benefits, then the public good will collapse and no one will benefit.

Public goods involve contribution and reward behaviors and thus will involve justice evaluations and subsequent behaviors. When looking at what others are contributing to a public good relative to oneself, each other, and/or a reference points, it is very likely that fairness perceptions come into play. In turn, it is very likely that people adjust their contributions accordingly—responding more generously when observing the cooperative actions of others or less generously when observing fewer contributions from others or free-riding behaviors. Consequently, how people decide whether to contribute public goods is one the most critical questions in the social sciences. How fair one perceives contribution behaviors has been well-documented as an important factor influencing contributive behavior (e.g., Diekmann et al. 1997; van Dijk, De Cremer, and Handgraaf 2004; Kahneman, Knetsch, and Thaler 1986; Van Lange and Messick 1996; Stouten, De Cremer, and Van Dijk 2005). This dissertation wishes to provide a theoretical framework regarding justice consideration in order to better understand public goods dilemma situations.

When individuals encounter situations that require contribution and produce rewards to share, they make interpersonal comparisons of those contributions and/or rewards. When making these comparisons, it is likely that people adjust their contributions accordingly. Distributive justice theories (DJTs) commonly model these social comparisons as ratios, and they can accommodate comparisons of self-to-other, self-to-standard, self-to-past, self-to-group, other-to-other, other-to-group, etc. If a comparison ratio deviates from precise proportionality (i.e., greater or less than one), individuals evaluate the situation as *unfair* (Jasso 1978, 1980; Markovsky 1985b).

While many interpersonal comparisons are available, which comparison is most salient at a given time depends on contextual information that, in turn, may be determined through socially constructed frames. The *framing effect* in cognitive psychology refers to judgment biases induced by the way information about a situation is presented, rather than by changing the substantive content of that situation (Kahneman and Tversky 1979; Tversky and Kahneman 1981, 1986). For instance, a public goods setting can be characterized by emphasizing either negative or positive aspects, such as the risks and costs of participation or the potential for individual and collective benefits. The way contributions or rewards are framed may play a critical role in the formation of justice perceptions because the value of contribution and the desirability of reward can shift with changes in the social context.

Theories of justice and judgment heuristics lead us to predict that different frames will have predictable effects on a participant's perceived fairness of outcomes, and his or her subsequent behavioral responses toward injustice. I propose that if contextual information emphasizes and activates particular social comparisons, those comparisons will become more salient and impactful, and color the actor's overall justice evaluation.

In addition to the contextual information, an individual's characteristics may have an important role in making justice judgments. Therefore, I examine the relationship between justice evaluations and *social value orientation* (SVO), which indicates individual's general tendency in distributing a resource between self and others (Balliet, Parks, and Joireman 2009; Van Lange 1999; Simpson 2004). If these theoretical claims are applied to the realm of public goods dilemma, contribution behaviors can be better predicted and thus controlled.

The proposed theoretical arguments are tested through a standardized laboratory setting and a hypothetical vignette study. The vignette study is a three-condition study including three levels of different frames (own to a high-standard, own to a low-standard, own to a neutral-standard). Standardized laboratory settings provide controlled situations to test anticipated theoretical conditions. The lab experiment tests for predicted variations in participant's justice evaluations and subsequent behaviors, measured by whether a participant alters subsequent contributions to the group account, gives less or more bonus rewards to the partner, or changes partner for future interactions. This experiment has a 2 x 2 x 2 factorial design including two levels of comparisons for contribution (own to a high-standard, own to a low-standard), SVO categories (individualistic, prosocial), and partner's contribution level (low, high). The vignette and experimental tests demonstrate how a socially constructed title may lead individuals to give different weight to comparisons and thus alter justice judgments, even when actual rewards and investments have remained unchanged.

The rest of this dissertation is organized as follows. In Chapter 2, I discuss background theories and research in support of an integrated theory of distributive justice and the idea of framing effects in order to formalize over-contribution and low-contribution problems in public goods dilemmas. Based on this background, in Chapter 3, I propose components of the integrated theory in order to explain the process underlying the causal relationships between the perceptions of contribution and reward as just or unjust regarding framing effects. From Chapter 4 to Chapter 9, I explain methodologies used in this dissertation and introduce gathered data. Chapter 4 is comprised of the pilot study's methods and findings. Chapter 5 and Chapter 6 explain the vignette methods and data

analysis for vignette study. Chapter 7 and Chapter 8 comprise the experimental methods and data analysis for experimental study. In Chapter 9, I provide a conclusion addressing the implications of this research for academic areas and its applicability to practical areas, limitations of the study, and suggestions for possible future research. Finally, all detailed experimental and vignette protocols, paper works, questionnaires, etc. that were used are provided in an Appendix section.

CHAPTER 2

BACKGROUND THEORIES AND RESEARCH

This dissertation explains how justice evaluations can play a critical role in public goods dilemmas and utilizes DJTs and framing effects. In this chapter, I describe social dilemmas and how under- or over-contribution in public goods dilemmas can create feelings of injustice. I also examine the processes of justice evaluations, including how DJTs focus on the process through which individuals make justice evaluations based on contribution and/or reward distributions and on the consequences of justice evaluations. I review the related research and pull together the theoretical background in order to develop an integrated justice theory.

2. 1 SOCIAL DILEMMAS AND CONTRIBUTION PROBLEMS

In many aspects of cooperative human behaviors, an individual's self- and social-interests are at odds, and the individual should decide to pursue either selfish or collective benefits. This mixed-motive situation known as *social dilemma*. In general, research focuses on two main types of dilemmas. The first type is the *public goods dilemma*, which refers to a mixed-motive situation where group members contribute individually to a public good from which all members can benefit. In typical public goods dilemma settings, each member of a group of actors makes decisions about contributing to a collective good that, in turn, accrues value and becomes equally available or apportioned to all. For instance, many public services (e.g. public parks, street lights, public radios, light houses, etc.) that we use daily are supported by taxes and donations.

The second type is the *resource management dilemma* in which a scarce public resource is presented for all individual group members' usage, but the excessive use of which may result in depletion of the resource completely (Dawes 1980; Van Dijk et al. 1999; Van Dijk and Wilke 1995; Kollock 1998; Komorita and Parks 1996; Van Lange et al. 2013; Messick and Brewer 1983; Olson 2009; Yamagishi 1995). The theoretical framework proposed here can be applied to both types of social dilemmas, but the present study explicitly focuses on contribution problems in public goods dilemma.

A great body of research focuses on how to encourage group members to contribute and eliminate low contributions and free-riding. Free-riding occurs because it is generally the most beneficial choice for actors; but if everyone free-rides, collective goods cannot exist. For instance, individuals may enjoy using public services and goods, such as public parks, while not paying municipal taxes. By doing so, they maximize their rewards and minimize costs. However, these public goods rely on taxes and if more and more people stop paying taxes and choose to free-ride, the state will not be able to provide these services for anyone. When some members receive undeserved rewards by free-riding, the exploited members evaluate the situation as unfair (Markovsky and Berigan 2012) and perceptions of injustice weakens group ties, cooperation, and productivity (Adams 1963, 1965; Markovsky 1985b; Walster, Walster, and Berscheid 1978). Moreover, previous research shows that people evaluate under-contributors poorly and tend to punish them (i.e. *altruistic punishment*) (Fehr and Gächter 2002; Shinada and Yamagishi 2007; Yamagishi 1986, 1995).

Even though free-riding is often the most beneficial choice for a self-interested individual, people tend to cooperate to some extent. One of the possible explanations for

cooperation over free-riding is ideas of fairness and the contributive norms develop during social interactions. A considerable amount of research in social dilemmas examines fairness in relation to cooperation in mixed-motive situations (e.g. Allison, McQueen, and Schaerfl 1992; Allison and Messick 1990; Camerer and Fehr 2002; van Dijk and Vermunt 2000; van Dijk and Wilke 1995; Van Dijk et al. 1999; Kerr 1995; de Kwaadsteniet et al. 2010; Van Lange and Messick 1996; Messick 1995; Stouten, De Cremer, and Van Dijk 2006; Stouten, De Cremer, and van Dijk 2009). Research has consistently confirmed that collectively-oriented groups do not allow individual group members to maximize their personal interest by penalizing those that free-ride (De Cremer and Dijk 2009; Fehr and Gächter 2002; Shinada and Yamagishi 2007; Yamagishi 1986, 1995).

Despite the necessity of group contribution, high contributions may be problematic and high contributors may bother other group members and also receive sanctions (i.e. *anti-social punishment*) (Herrmann, Thöni, and Gächter 2008; Irwin and Horne 2013; Parks and Stone 2010; Sylwester, Herrmann, and Bryson 2013). Parks and Stone (2010) and Irwin and Horne (2013) find that high contributing members are sometimes expelled from the group because their over contributions are perceived as atypical and their norm violating behaviors are punished. When some individuals contribute a lot more than others, other group members may feel offended because their appropriate contributions may now be seen as under-contributions when compared to the over-contributors. Thus, high contributions may change normative standards to the dismay of other group members. For instance, if an employee works longer hours than his or her coworkers, other employees may feel resentful because they may now be seen as not working hard enough. His/her high performance may violate the notion of the normal, typical effort for an average employee

even if his/her effort is beneficial to completing the group task successfully (Herrmann et al. 2008; Irwin and Horne 2013; Kuběna et al. 2014; Parks and Stone 2010).

Researchers have considered various factors that may cause these antisocial punishments, such as differences in social background (Henrich et al. 2001; Herrmann et al. 2008), violation of norms, and creation of undesired standards (Irwin and Horne 2013; Parks and Stone 2010), and socioecological competitions (Sylwester et al. 2013).

Conversely, a body of research suggests that high contributions may be associated with positive outcomes (e.g., De Cremer 2002; R. Willer 2009). For instance, Willer (2009) and De Cremer (2002) found that high contributors received more respect and deference from other group members. These different findings may result from various contexts of social relations (i.e. group structure, task features, interactions, etc.). Contributions may provide socio-emotional rewards to individuals, such as respect from others (De Cremer 2002; Willer 2009). However, group members may feel that high contributors diminish their opportunities to receive these socio-emotional rewards and/or that high contributors are competing for a higher standing in the group. High contributors may be seen as manipulative, strategic, uppity, and suspicious (Berger et al. 1986, 1998; Lovaglia et al. 1998; Ridgeway et al. 2009; Ridgeway and Berger 1986, 1988). [1]

In relations to fairness evaluations, non-cooperative behaviors may create injustice. Some individuals may follow their selfish interests, but receive the same benefit as the group-interested members, or those who choose to contribute to the collective goods. As

[1] In this research, group members are assumed equal in task competence and thus equal in status. However, when group members' statuses are differentiated, the expectations are likely to be in line with their statuses (e.g. low contributions from those of low status). The behaviors violating status expectations are likely to be evaluated negatively compared to status-confirming behaviors. For more discussions on status, see Berger, Wagner, and Webster 2014; Ridgeway and Berger 1986; Shackelford, Wood, and Worchel 1996; Wagner 1988.

discussed above both low and high contribution may cause problems in groups. This implies that individuals may coordinate their contribution to collective goods and their share from collective goods in a fair way. Also, the decision to cooperate or free-ride is a personal choice, but the decision-making process is social and affected by social and structural factors and ultimately affecting contribution decisions from other members.

Decisions on whether an individual free-rides or gives low (or high) contributions indicate that contributions to collective goods have different meanings and functions for group members. Contribution and contributors may be evaluated differently in accordance with the structural features of the social interactions. A structural feature in one setting may encourage group members to maximize personal profits, whereas another one encourages cooperative behaviors and/or promotes group wellness by offering socio-emotional rewards.

This dissertation adds that fairness judgments may be influenced through structural differences. For instance, individuals in a situation that encourages maximizing group-interests may evaluate a low contribution as very unfair. Individuals in another situation that encourages maximizing self-interests may evaluate the same contribution as fair. Even though non-cooperative behaviors can increase perceptions of injustice or fairness among the group in both situations, their evaluations may vary by depending on which situation they are in. Such as, group-interested members may be more sensitive towards a low contribution to the group compared to self-interested members. I claim that a well-structured justice model may help better understand this process and help better understand contribution decisions within social groups.

2. 2 PERCEPTION OF JUSTICE

In general, justice theories in sociology aim to understand how and to what extent social factors can determine individuals' perceptions of justice. When individuals make a judgment about a rule, procedure, treatment, contribution, reward, etc., they may be influenced by various personal and contextual factors. People may perceive an allocation of reward to be just for one situation but unjust for another because their perceptions are formed by different distribution (or allocation) rules, such as need, equality, or equity (Deutsch 1985; Leventhal, Karuza, and Fry 1980). Different distribution rules lead people to evaluate situations differently and act in varying emotional, cognitive, and behavioral ways. Although there are numerous justice perspectives explaining individual's justice evaluations for distributions of contribution and/or reward, this research focuses on distributive justice theories (DJTs). Most DJTs seek to explain why and how people perceive a distribution of contribution and reward as just or unjust and take into account the relationship between expected depending expected *vs.* actual amounts of contributions and rewards. However, each theoretical program focuses on different contributions (e.g. effort for equity theory or status attributes for status characteristics theory), comparison units (e.g. local or referential), rewards (e.g. pay or social influence), and comparison functions (e.g., ratios *vs.* differences).

In addition to DJTs, procedural justice theories claim that people perceive an allocation as just or unjust based on the processes and procedures by which allocation decisions are made (Leventhal et al. 1980; Lind and Tyler 1988; Thibaut and Walker 1975; Tyler 1989). While perception of distributive justice implies differentiation between expected distributions and actual distributions, perception of procedural justice refers to

the appropriateness of the procedures for just allocation decisions. From a procedural justice perspective, people seek to be valued members within their groups and a just allocation system and procedure matches this sentiment (Lind and Tyler 1988). Research shows that when people perceive that they are treated fairly during the decision-making processes and that the ruling system followed to achieve the given outcomes is fair, they are likely to comply and cooperate (Lind and Tyler 1988). Some research on procedural justice claims that fair procedures determine perceived fairness (e.g. Barrett-Howard and Tyler 1986; Folger 1986), but other research shows that these effects are often moderated by the extent to which individuals are rewarded for their contributions. For instance, over-rewarded or equally-rewarded people are likely to focus on fair procedures while under-rewarded people are likely to focus on fair distributions (Clay-Warner, Hegtvedt, and Roman 2005; Greenberg 1987).

Indeed, fair procedures are also taken into account by DJTs. Most DJTs consider socio-emotional and other instrumental contributions and rewards as inputs and outputs respectively. Most DJTs address the question of how we get an outcome and evaluate the rules and procedures that bring about a legitimate outcome (Cropanzano and Ambrose 2001; Hegtvedt 1993; Hegtvedt and Markovsky 1995). Therefore, DJTs cover the literature on procedural justice theories and it is assumed that procedural justice is included in DJTs.

Early Distributive Justice Research and Proportionality Rules

DJTs mainly focus on a socially just distribution of rewards in society. In social psychology, distributive justice refers to the perceived fairness of rewards allocated among group members. DJTs have investigated the antecedents and the consequences of individual's justice evaluations in contribution and/or reward situations. One of DJTs' most

critical aims is explaining the formation of individuals' judgments about the distribution of contribution and reward. Justice judgments are typically considered to be based on *social comparisons* across individuals, groups, standards, expectations, etc.

Most DJTs in social psychology stem from relative deprivation theory, a theory that emphasizes the importance of the social comparison process in making justice evaluations (Stouffer et al. 1949). From the basis of relative deprivation theory, Homans' (1961) and Blau's (1964) studies on fair exchange between actors provide a social psychological perspective for DJTs. These studies conceptualize justice not as it should be, but as it is perceived by individuals within a given context. For example, Homans proposed that distributive justice becomes a concern when the actors' benefits are not proportional to their contributions. Individuals determine their just rewards by making comparisons between rewards (R) and contribution (C) and evaluate the situation as just if the ratio of reward and contribution is equal to one (i.e. *proportionality rule*).

Adams (1963, 1965) developed these ideas of distributive justice and proportionality more fully by integrating it with Festinger's (1957) cognitive dissonance theory. Adam's DJT, also known as equity theory, is a ratio model of justice that proposes a proportional mathematical formula to explain how a focal actor (x) evaluates the differences between his/her ratio of contribution to reward and the referent actor (y)'s ratio in the same exchange. If the actor's ratio and the referent's ratio are equal or the difference is zero, then the result is *equitable* (or *just* in accordance with equity theory). If inequity occurs, actors will seek to restore justice by using different strategies. They may alter their own or others' inputs and/or outcomes or change their perceptions of inputs and/or

outcomes. If those strategies do not work, actors may leave the situation completely (Adams 1963, 1965).

After Adams, a number of different equity models appeared in the literature. Walster et al.'s (1978) model addresses people's tendency to seek profitable outcomes in addition to equitable outcomes. This model argues that people are self-interested and may follow outcomes that are in their favor instead of equitable outcomes. However, if they think that favorable outcomes are too costly, they may follow equitable outcomes instead. People may also restore justice by using the least costly means such as changing the perceptions instead of compensating for their exploitation by decreasing their rewards or increasing their contributions.

While the above models work to explain the influence of social comparisons on perceptions of justice, none of these equity models are consistently superior to others. Thus, in this dissertation, I use Markovsky's (1985b) mathematical model to investigate social comparison processes. In his model, social comparison (CU_{xy}) is mathematized via the following equation,

$$CU_{xy} = \frac{\left(\frac{R_x}{C_x}\right)}{\left(\frac{R_y}{C_y}\right)} \quad (1)$$

If the actor's ratio and the referent's ratio are unequal or the difference is not zero, then the outcome is inequitable. *Positive injustice* occurs when the result favors the actor (i.e. CU_{xy} is more than one) and *negative injustice* occurs when the result disfavors the actor (i.e. CU_{xy} is less than one). If the outcome is inequitable, the actor experiences cognitive dissonance and are likely to be motivated to regain balance or reduce the inequity (i.e. a *justice-restoring attempt*).

Extension of DJTs and Multilevel Approaches

DJTs have been elaborated on through various extensions and criticisms. One of the critical elaborations on DJT comes from the status value literature. DJTs emphasized only local referents in making social comparisons but a status value theory of distributive justice adds a broader social environment to social comparison processes. While past DJTs focused on the economic value of rewards and contributions, status value theory shows that individuals form reward and contribution expectations by taking into account symbolic values (e.g. status) as well as economic values (Berger et al. 1985; Berger, Fisek, et al. 1972; Markovsky 1985b; Thye 2000).

Actors in a group make social comparisons regarding their broader social environment through the activation of referential structures. Consequently, what is believed to be fair in a society for a given social position is likely to become the expectation for individuals who fulfill the social position. For instance, according to the distributive justice principles, a factory worker will compare his/her payment to other workers in the factory, or similar workers elsewhere. However, if a worker believes that male workers are generally paid more than females, then s/he will expect male workers to be paid more compared to females. In another culture, race might have similar effects in forming expectations for high or low rewards. As a result of these expectations, even though the ratio of effort and payment is not proportional (i.e. unequitable), the worker will not experience injustice when a female or a black worker is paid less than males or whites. This happens because symbolic values (i.e. status) in reward and contribution may be perceived as contributions and thus alter the justice evaluation. In other words, social structural differentiation (e.g. a status hierarchy) has impacts on justice perceptions (Berger

et al. 1985; Berger, Fisek, et al. 1972; Berger, Zelditch Jr., et al. 1972). Status research also consistently confirms that differences in status characteristics can create different reward expectations which in turn determine reward-related behaviors as just or unjust (Berger et al. 1985; Berger and Zelditch Jr. 1997; Ridgeway et al. 1998; Wagner and Berger 1993).

A second elaboration of DJTs focuses on a multilevel approach to justice. Some research on DJTs suggest that individuals' perceptions of fairness should be evaluated at the collective level as well as the individual level (Berger, Fisek, et al. 1972; Hegtvedt 2005; Hegtvedt and Johnson 2000; Jasso 1980, 1983; Markovsky 1985b). Some researchers suggest dividing individual justice evaluations into *individual assessments*, which consider personal merits and responsibility for outcomes and *group level assessments*, which consider others and social norms (Feather 1994; Hegtvedt 2005). This perspective maintains that what is fair for an individual is dependent on his/her expectations for other group members' justice evaluations as well as his or her personal expectations. These expectations are formed through personal *referential structures*, which consist of socially-validated beliefs about what is fair or not, and these beliefs are learned through socialization (Berger, Fisek, et al. 1972; Berger, Ridgeway, and Zelditch 2002; Markovsky 1985b). Since referential structures are based on socially validated beliefs, behavioral expectations formed via referential structures are believed to be normative. Individuals believe that information provided by referential structures frames the way things ought to be and what is fair for not only the individual, but also other group members.

In line with this perspective, Markovsky's (1985b) multilevel justice theory (MJT) demonstrates that if group identification increases, individuals' justice evaluations shift

toward being on behalf of their group instead of on behalf of their individual interest. Clay-Warner (2001) and Tyler et al. (1997) also illustrate that individuals' subgroup memberships and their orientation to the group (i.e. group or self-oriented) affect their perceptions of justice. Considered together, these findings suggest that a multilevel justice evaluation is necessary to understand individuals' perceptions of justice properly.

Justice Evaluation Processes

Justice evaluations refer to a particular individual's comparison between expected outcomes (based on normative standards) and actual outcomes. An individual's justice evaluation involves objective and subjective components which may influence each other. First, a justice evaluation is an objective comparison between observed rewards and what is expected. At the same time, what is expected in a justice evaluation can be determined by the individual's interest in particular comparisons. This means that a justice evaluation is a specific individual's subjective evaluation for a given comparison (Hegtvedt 2006; Hegtvedt and Markovsky 1995; Markovsky 1985b). The subjective components may be influenced by personal and situational factors. For instance, an evaluator's gender, age (Hegtvedt and Cook 2002), personal identity (Clayton and Opotow 2003; Skitka 2003), power position (Cook and Hegtvedt 1983, 1986; Hegtvedt and Johnson 2009; Hegtvedt, Thompson, and Cook 1993), social status (Berger et al. 1985; Berger, Zelditch Jr., et al. 1972), or relational bond to the group (Hegtvedt, Clay-Warner, and Johnson 2003; Hegtvedt and Cook 2002) may influence his/her justice evaluations. DJTs are concerned about these components and their interactions in assessing individual's justice evaluation and consequences.

DJTs assume that individuals form fairness judgments about actual behaviors (such as contributions, rewards, events, treatments, rules, etc.) by comparing them to reference conditions (such as expectations, a standard, past experiences, another person, or groups) (Adams 1963, 1965; Hegtvedt and Johnson 2000; Hegtvedt and Markovsky 1995; Jasso 1980; Markovsky 1985a, 1985b). Markovsky claims (1985b) that when the comparison of an actual behavior and a given reference condition do not match (*incongruence),* the comparison yields emotional distress (*injustice experience).* More concretely, when an actor evaluates his/her own contribution as too large or another actor's contribution as too small, or his/her own reward as too small or another actor's reward as too large, s/he will evaluate the situation as *negatively incongruent.* When an actor evaluates his/her own contribution as too small or another actor's contribution as too large, or his/her own reward as too large or another actor's reward as too small, s/he will evaluate the situation as *positively incongruent.* Positive or negative *injustice experiences* follow respectively from positive and negative incongruence.

Social contexts, however, have impacts on individual's evaluations and complicate fairness judgments for several reasons. First, when individuals are given different information about a situation, their evaluations are likely to be different. For instance, if a focal actor, x, is given information only on her/his own contribution and reward and those of another actor, y, DJTs assume that x will make two kinds of comparisons (presented as ratios): reward-to-contribution (R/C), and self-to-other (x/y). The interpersonal comparisons of rewards and contributions can be modelled as $(R_x/C_x)\ /\ (R_y/C_y)$. This ratio is called a *comparison unit* (CU) (Markovsky 1985b). If CU has a value between 0 and 1, x is disadvantaged and the ratio describes negative incongruence. Congruence exists

when CU equals 1. If the ratio is greater than 1, x is advantaged and the ratio describes positive incongruence. For example, if x contributes 15 units and y contributes 5 units for the same reward, then the CU_{xy}= (10/15) / (10/5) =.33. This means that x will experience negative incongruence. If x and y contributes the same amount for the same reward, then the CU_{xy}= (10/10) / (10/10) =1 (congruence). If x contributes 5 units and y contributes 15 units for the same reward, then the CU_{xy}= (10/5) / (10/15) =3. In this situation, x will experience positive incongruence. However, when x is informed differently, s/he is expected to make different comparisons. For instance, if x receives information about some other actors in the group or about a different standard for contribution and reward levels, this will alter the resulting congruence evaluation and experience of injustice relative to the previous example.

If people experience injustice, either positive or negative, they will tend to restore justice by altering their behaviors, distorting perceptions, leaving the situation, or punishing others' unjust behaviors (Adams 1963, 1965, Jasso 1980, 1983; Markovsky 1985b; Sweeney 1990). However, research consistently confirms that negative injustice yields stronger emotional distress than that of comparable positive injustice (Adams 1963, 1965; Austin and Walster 1974; Jasso 1978, 1980, 1983; Markovsky 1985b). Prospect theory[2] explains this situation through the *loss aversion* concept. A gain that falls below expectations (i.e. negative incongruence) is more likely to create emotional distress than that of a comparable gain that exceeds expectations (i.e. positive incongruence) because people tend to prefer avoiding losses to making equivalent gains (Kahneman and Tversky 1979; Tversky and Kahneman 1991). People also find it more fair when they receive a

[2] Prospect theory is explained in the next section.

favorable outcome they do not deserve than when another individual experiences the same situation (Diekmann et al. 1997).

Secondly, a specific comparison's importance may vary for different individuals. This subjective component of justice evaluation is reflected in Markovsky (1985b)'s justice model through the term of *justice indifference*. Justice indifference is a key factor to address individual variations in social comparisons and engagement with different allocation rules. *Justice indifference* is the inverse of *justice importance*, which refers to the degree to which justice is valued by individuals for a given comparison situation. Depending on its specific value, justice importance (or justice indifference) amplifies or dampens the emotional responses to incongruences. If an individual's justice indifference is sufficiently high for a given social comparison, the individual feels very little emotional distress no matter how great the incongruence, and is less likely to attempt to restore justice. Conversely, if justice indifference is sufficiently low, even a small departure from congruence is likely to produce injustice experiences, and the individual will tend to react toward the injustice. Individual's justice indifference is determined by the extent to which the evaluator identifies with other actor(s), the extent which s/he sees the other(s) as a valid referent, and the validity of the contribution and reward information (Markovsky 1985b).

By following Jasso (1980) and Markovsky (1985b)'s justice models, which organize comparisons as symmetric ranges around 0 by taking the logarithm of CU, injustice evaluation is calculated as follows (when justice indifference, i.e. JI, ranges from 1 to ∞),

$$IE = Log_{JI} CU \tag{2}$$

As can be seen in equation (2), the focal actor's injustice evaluation (IE) may vary depending on how much subjective importance is given to that comparison by the focal actor. When the focal actor puts a lot of importance to a comparison, then JI will be closer to 1, with less importance JI will be further from 1 and may approach infinity. In this equation, 0 = justice, negative numbers refer to negative injustice, positive numbers refer to positive injustice, and the larger the number, the stronger the experienced injustice. For instance, when JI = *e* (natural log base) for the given example, IE would be -1.1 for a .33 negative incongruence, 0 for congruence, and 1.1 for 3 positive incongruence situations. If the focal actor gives less importance for the same situations, such as JI = 10, IE for the same given examples would be -.48, 0, and .48 respectively. Additionally, individuals experience stronger feelings of injustice when they encounter negative injustice compared to positive injustice. This difference can be reflected through the JI factor as well. This is, the JI value for a negative incongruence is likely to be lower than that of a comparable positive incongruence; therefore, negative incongruence produces stronger emotional distress than positive incongruence in general.

When individuals experience injustice, they attempt to eliminate or reduce incongruence to achieve justice, when IE equals 0. An individual may change their own or others' actual contribution and/or reward to achieve *actual justice*. S/he may also relieve the distress psychologically by altering perceptions about the incongruent situations to achieve *perceived justice*. S/he may distort the information about contribution and/or reward or change the actual value of the unjust contributor's status (Adams 1963, 1965; Hegtvedt 2006; Walster et al. 1978).

2. 3 FRAMING EFFECT

When individuals engage in social interactions, their perceptual, emotional, and behavioral outcomes are influenced by social structures, which, in turn, may be determined through socially constructed frames. The *framing effect* refers to variations in perceptions that results from differences in how information about a choice is presented. Prospect theory utilizes the framing effect to explain how people's decision making depends on the way a situation is introduced. For instance, if people are given two equivalent choices, one expressed in terms of possible gains and the other expressed in terms of possible losses, people tend to prefer the former. This happens because people value gains and equivalent losses differently, and their decisions may change based on how they perceive gains and/or losses. When people make judgments, they are susceptible to bias induced by how the information is framed, and their decisions can be altered by different frames (Ganegoda and Folger 2015; Kahneman and Tversky 1979; Rabin 1998; Simonson and Tversky 1992; Tversky and Kahneman 1974, 1981, 1986).

The framing effect has been replicated and confirmed by many studies. One of the most relevant findings for the present research is that if a public goods dilemma is introduced as either a personal loss (negatively framed) or a collective gain (positively framed), contribution levels will differ dramatically (Bernold et al. 2014; Van Dijk et al. 1999; Messick, Allison, and Samuelson 1988; Sonnemans, Schram, and Offerman 1998; Willinger and Ziegelmeyer 1999). For instance, participants cooperate more when a public goods game is called "Community Game" compared to when the same game is called "Wall Street Game" (Bernold et al. 2014; Kay and Ross 2003; Liberman, Samuels, and Ross 2004). Participants cooperate more when a prisoner's dilemma game is called a

"Community Game" compared to "Stock Market Game" (Batson and Moran 1999; Eiser and Bhavnani 1974; Ellingsen et al. 2012). Research shows that the "Community Game" title encourages group members to contribute collective goods more because the word "community" frames contribution behaviors more positively than the words "Wall Street".

Different presentations of contributions to collective tasks may change individuals' behavior by changing individuals' understanding of what is just. Framing effects explain why, in one situation, people may compete to contribute the most, but in another situation, they may compete to free-ride. In one case, people may be happy to enjoy other members' high contributions, but in another case, other members' high contributions may be bothersome. If following the collective-interest is framed as a more valued behavior than following self-interest, willingness to contribute collective goods may be increased. Contribution to public goods can be framed as an attractive behavior by emphasizing "collective gain". On the other hand, contribution to public goods can be framed as an unattractive behavior by emphasizing "personal loss". By being framed as a "personal loss", individuals receive the highest reward by not contributing and may be seen as the strongest and most talented ones in the group. Individuals in these situations may be motivated to engage in a group task to maximize his/her own benefit, and a successful exchange is one where others are convinced to give up their personal goods while the individual maximizes his/her benefits. Thus, high or low contributions in differently framed settings can be judged differently because people have different motives in each situation and these motives affect their overall judgments.

Due to different frames, group members may develop different contribution expectations for themselves and their group members, and when members behave

unexpectedly, feelings of injustice are more likely to emerge. Clearly, framing can change behavioral patterns, even by changing just the title of a game. These findings indicate that a frame which encourages group members to maximize the collective benefit for a group may serve as an effective and low cost means for promoting contributions in task settings. Instead of using punishment for low contributions or promotions for high contributions, framing may be used to increase cooperative behaviors.

2. 4 SOCIAL VALUE ORIENTATION (SVO)

The equity principle states that either over-reward or under-reward leads to feelings of emotional distress, but some research disconfirms challenges this claim. Notably, research has found that some people experience fairness when they are over-rewarded, while others experience fairness when they are under-rewarded (Blakely, Andrews, and Moorman 2005; Huseman, Hatfield, and Miles 1987). Additionally, some people tend to evaluate their own favorable outcomes more fair than that of a comparable outcomes for others (Diekmann et al. 1997), while others prefer equal distribution. It is very clear that people assign different weights to their own and others' outcomes and this general preference may play a critical role in making justice judgments.

Research finds that individual differences, such as SVO, are important factors in predicting behaviors in social dilemmas (Anderson and Patterson 2008; Balliet et al. 2009; De Dreu and Van Lange 1995; Van Lange 1999; Van Lange et al. 2014; Messick and McClintock 1968; Simpson 2004; Simpson and Willer 2008, 2014). SVO can be defined as one's personal preference in making a decision to distribute a resource between oneself and others in interdependent situations. SVO is a stable preference for how outcomes are distributed between self and others. SVO typically categorizes people as prosocial or

individualistic. *Prosocial* people tend to maximize both their own outcome and the outcomes of other people. *Individualistic* people tend to maximize their own outcome without considering others' outcomes. Researchers also sometimes distinguish *competitors* who tend to maximize their own outcome at other people's expense, and *altruists* who tend to maximize other people's outcome at their own expense (Van Lange 1999).

Anderson and Patterson (2008) claim that justice evaluations are influenced by an individual's SVO as well as situational factors. Prosocial people prefer to maximize both their own and others' benefits and thus value the equity principle more than individualistic people (Joireman et al. 2003). Some research shows that prosocial people prefer to allocate resources equally and are less likely to take advantage of others compared to individualistic people (Van Dijk et al. 2004). On the other side, individualistic people prefer to maximize only their own benefits and view cooperation as a sign of a lack of intelligence (Smeesters et al. 2003) and see cooperative people as those who can be potentially exploited (Van Lange and Kuhlman 1994). Therefore, it is very likely that individualistic people prefer being over-rewarded rather than being rewarded equitably. Overall, research shows that justice evaluations and related behaviors are likely to be impacted by SVO.

SVO researchers also have been interested in understanding how SVO interacts with other factors. Subsequent studies have shown that the perceived honesty of one's partner (Van Lange and Kuhlman 1994), group identity (De Cremer and Van Vugt 1999), paying or not paying participants for their decisions, and so on may influence SVO. One of the important factors that may affect predictive power of SVO is framing the social dilemma as loss or gain (De Dreu and McCusker 1997). Some researchers (Van Dijk and Wilke 1995; De Dreu and McCusker 1997) suggest that SVO can be more predictive when

dilemmas were framed as loss (e.g. public goods dilemma), relative to gain (e.g. resource dilemma). One important explanation for this difference is the equality norm is more salient in resource dilemma compared to the public goods dilemma (Van Dijk and Wilke 1995). Therefore, framing may moderate the effects of SVO in predicting cooperative behaviors. In this dissertation, I consider whether title framing interacts with SVO in predicting first contribution, justice evaluations, and other subsequent behaviors.

CHAPTER 3

A THEORY OF FRAMING JUSTICE PERCEPTIONS

This chapter presents a theory that draws upon and integrates the literature reviewed in Chapter 2. Previous research shows that justice evaluations can mediate contribution behaviors in social dilemma situations. This literature also suggests that a framing effect as a theoretical mechanism causes changes in justice evaluations and related behaviors. A theory of framing justice perceptions will explain the impact of socially constructed frames on justice processes. The central argument in the theory predicts that socially constructed frames alter justice perceptions and thus lead to certain behaviors within the group. I represent these arguments in a formal way. The components of the theory consisting of a list of defined terms, scope conditions, theoretical assumptions, and derivations are presented.

3. 1 FRAMING JUSTICE PERCEPTIONS

This dissertation considers how socially constructed frames may alter individuals' justice evaluations. Distributive justice theories provide models that organize interpersonal comparisons of contribution and reward between an actual value and a referent. Individuals may use many comparisons for one situation and which comparison unit is the most influential in making justice evaluations significantly depends on social context. This research claims that different social frames may (de)activate different social comparisons and thus influence overall justice evaluations. The framing effect can be introduced through

a referential structure or referential rules. That frame can serve as a heuristic for the people making the comparison.

I assume that the different titles activate different frames: the community frame suggests something more cooperative, whereas the stock market frame implies profiting personally. My integrated theory provides an explanation for this. The framing determines expectations for contribution which in turns determine referent unit for social comparisons. The community frame induces a higher standard of contribution to the group, while the stock market encourages a lower standard of contribution to the group account. As a result, participants will assess their own and other's contributions accordingly.

A frame can increase (or decrease) one or more comparison units' effects on total congruence evaluation by leading people to give more (or less) importance to a specific social comparison unit(s) in making justice judgments. This (de)activation process can be called *congruence evaluation (de)activation*. For instance, a frame can make a comparison between a person and a standard more salient, or a comparison between a person and another person more prominent than other comparison units in determining incongruence. By giving different importance to comparison units, a frame can change a fair comparison to unfair or an unfair comparison to fair. The activation process is reflected through the justice indifference factor in equation (2). In order to reflect the plurality of comparison units, I formulate the following equation,

$$IE_{Total} = \left(Log_{JI_1} CU_1\right) + \left(Log_{JI_2} CU_3\right) + \cdots \left(Log_{JI_n} CU_n\right) \quad (3)$$

(De)Activation of comparison units simply means adjusting JI values in the equation 3. When a comparison unit is activated, the JI value for the comparison unit is decreased and when a comparison unit is deactivated, the JI value for the comparison unit

is increased. For example, when a focal actor (x) interacts with another actor (y) and the comparison between x and y is activated, x is likely to focus on comparison of x and y (CU_{xy}). This means CU_{xy} in the equation will have more weight than other comparisons and thus x will use lower JI (e.g. JI=e) for CU_{xy}compared to the other comparisons (e.g. JI=10). In another activation situation, x may be told not to worry about y (i.e. CU_{xy} and CU_{*y} deactivated) but focus on own behavior relative to a given standard (*), then x is more likely to give lower JI (e.g. JI=e) for CU_{x*} but higher JI (e.g. JI=10) for CU_{xy} and CU_{*y}. As a result of the framing effect, x will evaluate the same contribution and reward situation differently due to differential attention to the available comparison units.

The following tables for differently framed situations illustrate a variety of theoretical applications. In the following tables, reward (R) and contribution (C) information for x, y and * (standard) is provided. As can be seen from the tables, rewards remain constant (10 units) across conditions. Actual contributions (C_x and C_y) are changed to create negatively and positively incongruent situations. These differentiated actual contributions are identical in all tables which make a comparison between different activations possible in the same contribution and reward situation. To demonstrate low and high frame effects, a standard for contribution (C_*) is introduced either as 5 units or 15 units respectively. The possible comparisons of CU_{xy}, CU_{x*}, and CU_{*y} which can be made by x are provided.

Table 3.1 below shows the calculations when comparisons among self, other, and a high standard are activated. IEs for negatively and positively incongruent situations become stronger compared to the no frame situation. This happens because in addition to the injustice resulting from negative (or positive) incongruence between x and y, x also has

information about a high standard in this situation. Therefore, x will evaluate his/her own and other's actual contributions relative to the given standard. Although new information leads x to make more comparisons, the marginal effect of each incongruence in a situation of multiple incongruences diminishes when the number of incongruences increases (Markovsky 1985b). Therefore, I used "5" as my logarithmic base for this situation.

Table 3.1: IE with activation of self vs. other vs. high standard (C*=15) comparisons

	CU_{xy}	CU_{x*}	CU_{*y}	IE_{xy}= $\log_5 CU_{xy}$	IE_{x*}= $\log_5 CU_{x*}$	IE_{*y}= $\log_5 CU_{*y}$	Total IE
$C_x = 15, R_x = 10$ $C_y = 5, R_y = 10$ $C_* = 15, R_* = 10$	.33	1.00	.33	-.69	0	-.69	-1.38
$C_x = 10, R_x = 10$ $C_y = 10, R_y = 10$ $C_* = 15, R_* = 10$	1.00	1.5	.66	0	.26	-.26	0
$C_x = 5, R_x = 10$ $C_y = 15, R_y = 10$ $C_* = 15, R_* = 10$	3.00	3.00	1.00	.69	.69	0	1.38

Table 3.2 below shows the calculations when the comparison of self to a high standard is activated while the comparison of self to other and comparison of a high standard to other are deactivated. As can be seen from the tables, although actual contributions are same, IEs are significantly changed through different activation and deactivation processes. For instance, although incongruences are CU_{xy} =.33, CU_{x*} =1.00, and CU_{*y}=.33 in the first row in both tables, Total IE is -1.38 in Table 3.1 while -.96 in Table 3.2 due to different JI values. Similarly, although incongruences are same in the last row in both tables, Total IE is 1.38 in Table3.1 while 1.58 in Table 3.2. From this calculation, the theory predicts that negative injustice will decrease, and positive injustice will increase, by activation and deactivation processes in the Table 3.2 situation relative to Table 3.1 situation.

Table 3.2: IE with activation of self vs. high standard (C*=15) and deactivation of self vs. other and deactivation of high standard vs. other comparisons

	CU_{xy}	CU_{x*}	CU_{*y}	IE_{xy}= $\log_{10} CU_{xy}$	IE_{x*}= $\ln CU_{x*}$	IE_{*y}= $\log_{10} CU_{*y}$	Total IE
$C_x = 15$, $R_x = 10$ $C_y = 5$, $R_y = 10$ $C_* = 15$, $R_* = 10$	.33	1.00	.33	-.48	0	-.48	-.96
$C_x = 10$, $R_x = 10$ $C_y = 10$, $R_y = 10$ $C_* = 15$, $R_* = 10$	1.00	1.5	.66	0	.41	-.18	.23
$C_x = 5$, $R_x = 10$ $C_y = 15$, $R_y = 10$ $C_* = 15$, $R_* = 10$	3.00	3.00	1.00	.48	1.1	0	1.58

In the same way, Table 3.3 shows the calculation when activating comparisons among self, other, and a low standard. IEs for negatively and positively incongruent situations become stronger compared to the no frame situations.

Table 3.3: IE with activation of self vs. other vs. low standard (C*=5) comparisons

	CU_{xy}	CU_{x*}	CU_{*y}	IE_{xy}= $\log_5 CU_{xy}$	IE_{x*}= $\log_5 CU_{x*}$	IE_{*y}= $\log_5 CU_{*y}$	Total IE
$C_x = 15$, $R_x = 10$ $C_y = 5$, $R_y = 10$ $C_* = 5$, $R_* = 10$	.33	.33	1.00	-.69	-.69	0	-1.38
$C_x = 10$, $R_x = 10$ $C_y = 10$, $R_y = 10$ $C_* = 5$, $R_* = 10$	1.00	.66	1.5	0	-.26	.26	0
$C_x = 5$, $R_x = 10$ $C_y = 15$, $R_y = 10$ $C_* = 5$, $R_* = 10$	3.00	1.00	3.00	.69	0	.69	1.38

Table 3.4 below shows the calculation when the comparison of self to a low standard is activated while the comparison of self to other and comparison of a low standard to other are deactivated. As can be seen from the tables, although actual contributions are same, IEs are significantly changed through different activation and deactivation processes. For instance, although incongruences are CU_{xy} =.33, CU_{x*} =1.00, and CU_{*y}=.33 in the first

row in both tables, Total IE is -1.38 in Table 3.3 while -1.58 in Table 3.4 due to different JI values. Likewise, although incongruences are same in the last row in both tables, Total IE is 1.38 in Table 3.3 while .96 in Table 3.4. From this calculation, I predict that negative injustice is likely to be increased and positive injustice is likely to be decreased through activation and deactivation processes in the Table 3.4 situation.

Table 3.4: IE with activation of self vs. low standard (C*=5) and deactivation of self vs. other and deactivation of low standard vs. other comparisons

	CU_{xy}	CU_{x*}	CU_{*y}	IE_{xy}= $\log_{10} CU_{xy}$	IE_{x*}= $\ln CU_{x*}$	IE_{*y}= $\log_{10} CU_{*y}$	Total IE
C_x = 15, R_x = 10 C_y = 5, R_y = 10 C_* = 5, R_* = 10	.33	.33	1.00	-.48	-1.1	0	-1.58
C_x = 10, R_x = 10 C_y = 10, R_y = 10 C_* = 5, R_* = 10	1.00	.66	1.5	0	-.41	.18	-.23
C_x = 5, R_x = 10 C_y = 15, R_y = 10 C_* = 5, R_* = 10	3.00	1.00	3.00	.48	0	.48	.96

Additionally, IEs in Table 3.1 and Table 3.3 are the same, but as results of different calculations. For instance, x gives 15 units while y gives 5 units in the first row in both tables. From x's point of view, the situation is negatively incongruent (.33) and IE is calculated -.69 in both tables. However, in Table 3.1, what x gives (C_x=15) equals the standard (C_*=15), while what y gives (C_y=5) is less than that standard. In Table 3.3, what x gives (C_x=15) exceeds the standard (C_*=5) while what y gives (C_y=5) equals that standard. In the former situation (Table 3.1), y's low contribution relative to self and relative to a high standard causes negative injustice while in the latter situations (Table 3.3) x's high contribution, relative to other and relative to a low standard, causes negative injustice.

These illustrations demonstrate how framing is predicted to influence injustice evaluations. The severity of injustice can be increased or decreased for x because of a high or a low contribution standard and (de)activation processes. If the standard is settled as lower (e.g. C_*=3 or 0) or higher (C_*=18 or 20) than in the previous examples, the results in the tables would change even more dramatically.

3. 2 FORMAL THEORY

To be able to introduce a powerful theory, I formally organize the components of my theory consisting of a list of defined terms, scope conditions, theoretical propositions, and derivations.

Defined Terms

Rewards (R): Valued objects obtained in a social exchange system.

Contribution (C): R given to produce either more or different rewards.

Referential Structure: A finite set of C and R linkages existing in a social exchange system.

Referential Rule: Formula for a Referential Structure.

Reference R' (or C'): Focal R' (or C') given by a referential rule or referential structure.

Actual R_A (or C_A): R_A (or C_A) perceived to exist in a local setting.

Comparison Unit (CU): Ratio-based comparison (e.g. R'/C' and R_A/C_A).

(In)Congruence: (Dis)Agreement between a Reference and corresponding an Actual Comparison Units.

Congruence Evaluation (CE): Use of a Reference Comparison Unit to determine (In)Congruence.

Negative Incongruence: Incongruence that disfavors the focal actor in a CE.

Positive Incongruence: Incongruence that favors the focal actor in a CE.

(In)Justice: (Presence) Absence of Incongruence in a CE.

Injustice Evaluation (IE): Formula assigning value to an Incongruence.

Injustice Experience: Emotional response to an IE.

Justice Importance: Degree to which Justice is valued in a given IE.

Justice Indifference: Inverse of Justice Importance.

Justice-restoring attempt: Altering an R or C to change Injustice to Justice.

Punishment: Purposefully applied Justice-restoring attempt that reduces an other's R and/or increase the other's C.

CE (De)Activation: Purposefully increase (decrease) a given CE's Justice Importance.

Frame: Information used for CE (De)Activation.

Scope Conditions

The phenomena predicted by the current theory do not manifest in every context of social reality. Rather, like other scientific theories, the current theory can be applied to a limited set of conditions. For each testable theory, *scope conditions* define when the theory is applicable (Walker and Cohen 1985).

This integrated theory significantly relies on Markovsky's multilevel justice model (Markovsky 1985b); therefore, its scope domain overlaps with his theory and includes a social frame condition. This theory aims to explain social determinants of a focal actor's (i.e. evaluator's) justice evaluation and relevant behaviors in contribution and/or reward situations. The proposed theory can only operate within the following conditions:

SC.1: Actors exhibit levels of contributions and receive amounts of rewards

SC.2: There exists a legitimate referential relationship between contributions and rewards in making social comparisons.

SC.3: There exists a legitimate method for attempting to restore justice

SC.4: Actors recognize socially constructed frames

Public good dilemmas satisfy those conditions. First, a public good setting is a situation that requires contributions from group members and produces rewards to share. An actor's rewards depend on others' contribution while other' rewards depend on the actor's contribution. Each actor can infer a referential relationship between contribution and rewards. For a certain level of contribution, actors expect a certain level of rewards. Public goods dilemma settings allow group members to restore justice such adjusting subsequent contributions. Finally, actors should recognize socially constructed frames and use them as heuristics in making social comparisons.

Propositions and Derivations

This dissertation develops an integrated theory; therefore, I organize theories in a modular approach which facilitates and promotes integrations and formulates propositions (P) and derivations (D) efficiently (Markovsky 2010; Markovsky et al. 2008). The core of the theory is a causal model that suggests the impact of framing on justice evaluations and accompanying subsequent cognitive and behavioral responses (see Figure 3.1).

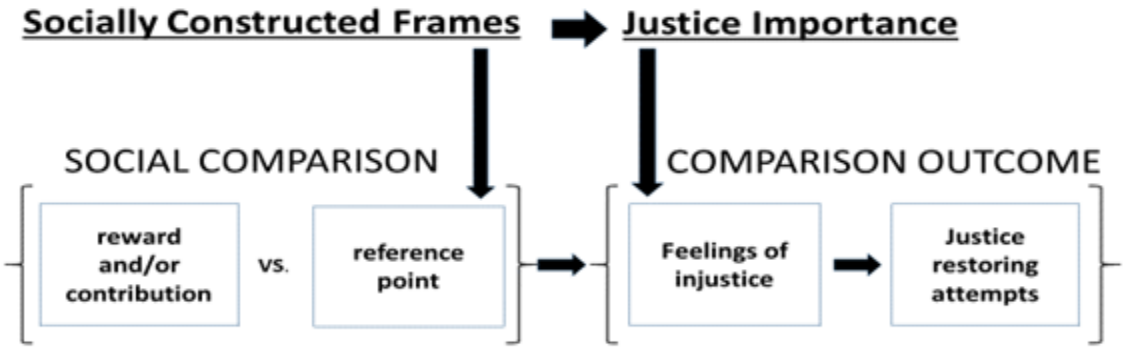

Figure 3.1: Core Theory Causal Relationship Diagram

Module 1: Perceptions of Justice

As stated in the Justice Evaluation Process section, Equation two (See page 28) allow us to derive the following propositions and derivations.

P.1: If there exists a Reward (R) and/or Contribution (C) situation, actors will make a comparison between the actual comparison unit (R_A/C_A) and a reference comparison unit (R'/C').

P.1.2: The further the value of $CU_{A'}$ from 1(or the greater the difference between R_A/C_A and R'/C'), the greater will be the incongruence.

P.1.2 (a): If the value of $CU_{A'}$ greater than 1 (goes to ∞), the situation will be positive incongruence.

P.1.2 (b): If the value of $CU_{A'}$ less than 1 (goes to 0), the situation will be negative incongruence.

P.1.2 (c): If the value of $CU_{A'}$ equals 1, the situation will be congruence.

P.1.3: The greater the incongruence, the less will be the evaluator's justice indifference.

P.1.4: The justice indifference for a negative incongruence is less than that of a comparable positive incongruence.

P.1.5: The less the justice indifference, the greater will be the injustice experience.

D.1: The further the value of $CU_{A'}$ from 1, the greater will be the injustice experience. (Or the greater the difference between R_A /R' and C_A/C', the greater will be the injustice experience).

D.2: The injustice experience is greater for a given degree of negative incongruence than for the same degree of positive incongruence.

Module 2: Framing Perceptions of Justice

As discussed before, this dissertation tests how framing comparison units affects justice perceptions. The following propositions derive these effects from the Equation 3, which stated in the Framing Justice Perceptions section (See page 35).

P.2.1: The greater the activation of Congruence Evaluation (CE) for a given CU, the less will be the evaluator's justice indifference (JI) for the CU.

P.2.2: The less will be the evaluator's justice indifference (JI) for a CU, the greater will be the CU's impact in total injustice evaluation (IE).

D.3: If a Congruence Evaluation (CE) for a specific Comparison Unit (CU) is (de)activated, the CU's impacts in total injustice evaluation will be (small) great.

Module 3: Eliminating Incongruence (Achieving CU=1)

Finally, I examine the means to restore justice: changing own and/or referent's reward and/or contribution and exiting the relationship. Therefore, I formalize the following prepositions and derivation:

P.3.1: If actors experience injustice, they feel emotional distress.

P.3.2: If actors feel emotional distress, they will attempt to eliminate emotional distress, and thus the incongruence.

P.3.2 (a): If actors attempt to eliminate incongruence, they will alter their own (or referent's) C and/or R to achieve congruence.

P.3.2 (b): If actors cannot restore justice, they tend to exit the situation.

D.4: The greater the injustice experience, the greater the tendency to punish the unjust actor and/or quit the relationships with the unjust actor.

CHAPTER 4

PILOT VIGNETTE STUDY

In the previous chapters, I reviewed the theoretical background and presented the basic components of the theory developed in this dissertation. To test the present theory, its key terms, assumptions, and derivations were operationalized through the testable hypotheses, and the hypotheses were tested empirically. The main empirical tests in this dissertation are a vignette survey and a standardized laboratory experiment. Although I generally relied on well-tried methods and measures, I pre-tested novel measures and manipulations. A detailed pilot study procedure and findings are provided in this chapter.

4.1 METHODS

Vignette studies use a constructed description of a situation that is shown to respondents within a survey in order to collect their judgments, beliefs, or attitudes about this situation (Alexander and Becker 1978; Atzmüller and Steiner 2010). In this chapter, I present methods and findings for the pilot study. As explained below, the vignette aims to isolate the effects of framing in a negatively unjust, hypothetical situation.

Variables

The vignette study examines how title framing affects justice perceptions and related behaviors in a hypothetical public goods setting. In the pilot test, the independent variable is the social frame. I created three different social frames through different game titles: The Community Game, The Wall Street Game, and The Decision-Making Game for

the same scenario. I used the community frame to create a high standard of contribution, the Wall Street frame for a low standard of contribution, and the decision-making frame for a neutral standard of contribution. Participants were told to imagine interacting with a low-contributor partner in the pilot study.

The dependent variables were the participants' initial contribution (from $0.00 to $5.00) to the group account, justice evaluations, and justice-restoring attempts. First, I tested whether or not reading different game titles leads participants to contribute different amount to the group account. Second, I examined the participants' justice evaluations when their partner contributed less than what the participant gave to the group account. Third, I examined whether or not different social frames create different behavioral responses to injustice experiences. Therefore, I asked them if they would give less, more or the same amount of money to the group account for the second round. I also asked the participants' preference to switch partner for future as my second measure of justice-restoring attempts.

Vignette Procedures[3]

Undergraduate students at the University of South Carolina's Main Library were asked to help a PhD student to complete an IRB approved sociological research survey. The volunteer students were given a two-paged vignette survey to complete.

On the first page of the survey, participants were exposed to framing variables through different game names (The Community Game, The Wall Street Game, or The Decision-Making Game) and each participant saw only one of these names. All other context was identical in each survey except the game names. Then, they read the following hypothetical situation:

[3] The complete protocol for the pilot study is provided in Appendix A.

"The Community / Wall Street / Decision-Making game consists of several joint decision-making tasks that involve decision-making by a two-person group. In The Community / Wall Street / Decision-Making game, each group member must decide how to spend a pool of money that he or she has (in his or her "personal account").

The basic directions are as follows: each group member will be given $5.00 which can be kept in their personal account or contributed to the group account. Any amount that is contributed to the group account will be multiplied by 1.5. Then, the group money will be divided equally between two group members, regardless of their individual contributions to the group account.

Each group member's total earning per round will be his/her half of the earnings from the group account, plus whatever he or she did not invest (i.e., whatever is left in his or her personal account)."

Next, participants read four examples. Afterward, they read that compensation for the task was based on the amount of money that each member had earned at the end of the task. Then, they were asked to imagine themselves as one of the group members, and answer some related questions accordingly.

First, each participant was required to decide how much of their hypothetical $5.00 to give to the group account (from 0 to $5.00). Next, participants were informed about their partner's low contribution, and they evaluated their partner's low contribution to the group account. After experiencing negative injustice, participants were asked how they would change their second contribution to the group account and to what extent they would prefer to change their partner for future rounds.

The completed surveys were collected and each participant was thanked for their participation. The collected data were organized, coded, and entered into the computer system.

4.2 FINDINGS

Data

A total of 48 cases were used in the analysis: 16 assigned to the decision-making game, 16 to the community game, and 16 to the Wall Street game. The data are slightly non-normal but satisfy the assumptions of homoscedasticity and multicollinearity.

Findings

First, I checked whether or not different titles created any variation in the first contribution behavior. I ran a one-way ANOVA test to detect the effect of the framing. The test result was statistically significant for the three conditions [F (2, 45) = 3.514, p = .038]. The mean contributed amount out of $5.00 was $3.56 (SD= 1.67) for the decision-making game condition, $3.28 (SD= 1.54) for the community game condition, and 2.22 (SD= 1.30) for the Wall Street game condition. The Tukey post-hoc test shows that comparison between the Wall Street game and the decision-making game was significant [p = .041] The LSD post-hoc test also shows that the comparison between the Wall Street game and the decision-making game was significant [p = .016] and the comparison between the Wall Street game and the community game was marginally significant [p = .053].

Second, I checked whether or not participants' justice evaluations vary across differently named conditions. I predicted that fairness evaluation would be determined through different game titles. A one-way between-subject ANOVA test results were insignificant for the three different conditions [F (2, 45) = .307, p = .737]. Although the

result from the ANOVA test does not support my predictions significantly, the direction of the result partially supports my predictions. This is, participants in the community game evaluated the situation as slightly more unfair than the other groups. The mean fairness was 3.125 (SD= 1.59) for the decision-making group, 2.81 (SD= 1.52) for the community group, and 3.19 (SD= 1.22) for the Wall Street group.

Third, I checked whether the participants' justice evaluations led them to increase or decrease their second contributions. Since my justice evaluation measure is not a categorical variable in this study, I ran a linear regression analysis and the result was insignificant [t= 1.250, p = .218]. Fourth, I checked whether or not participants' justice evaluations led them to change their partner for future rounds. A linear regression analysis was insignificant [t= -1.392, p = .171]. Finally, I ran a hierarchical multiple regression to create a better prediction model for changes in the second contribution variable. The results are summarized in Table 4.1 below.

Table 4.1: Hierarchical Multiple Regression Models for Changes in the Second Contribution

	Model 1 ***B (SE)***	***Model 2*** ***B (SE)***
Intercept	-.659 (.242) ***	-1.334 (.409) ***
Independent Variables:		
- Decision[1]	-.121 (.208)	.596 (.521)
- Community[1]	-.161 (.209)	.862 (.512) *
- Fairness	.069 (.060)	.281 (.120) **
- Decision*Fairness		-.225 (.152)
- Community*Fairness		-.336 (.155) **
Omnibus F Tests	.722	.1.411

* = $p \leq .10$, ** = $p \leq .05$, *** = $p \leq .01$, **** = $p \leq .001$.

[1] The Wall Street group is the reference category.

As can be seen from the multiple regression Model 1, neither framing nor fairness evaluation predicted the changes in the second contribution. However, Model 2 indicates there was a clear interaction between fairness and the community frame. When interaction is significant, simply examining their main effects can lead to incorrect conclusions (Baron and Kenny 1986; Hayes 2013). The interaction shows that participants who evaluated the situation as fair in the community group were more likely to decrease their second contribution compared to those who evaluated the situation as fair in the decision and Wall Street groups. I expected that the community group would decrease their second contribution because of their stronger injustice experience. Contrary to my expectation, participants in the community study who evaluated the situation as fair decreased their second contribution. I will discuss possible explanations for this result in the following section.

Discussion

The pilot study results show that the title framing had a significant effect on first contribution and a moderator effect on the second contribution. The significant result from the ANOVA test clearly shows that title framing created different contribution expectation across groups; thus, people contributed differently to the group account. This means that participants in the community and decision-making games were likely to contribute more than participants in the Wall Street game. This also indicates that the community and decision-making frames created a higher contribution expectation while the Wall Street frame created a lower contribution expectation.

Framing also moderated fairness evaluation in predicting the changes in the second contribution. Participants in the community study who evaluated the situation as fair

decreased their second contribution more than participants in other groups who evaluated the situation as fair. This unpredicted interaction may have happened due to collectiveness created by the community title. This may indicate that participants in the community group may not express their negative feeling of injustice towards another group member, but still restored justice by reducing their second contribution. Additionally, the number of people in the pilot study was very small to reach out a proper conclusion.

In conclusion, the results from the pilot study led me to design a vignette study to test my theory with more participants. I also refined my questions and title names for the vignette study.

CHAPTER 5

VIGNETTE STUDY: METHODS

In this chapter, I present the vignette methods used in testing basic components of the theory presented in this dissertation. As explained in the previous chapter, the vignette aims to isolate the effects of framing in a negatively unjust-hypothetical situation. After the pilot study, I revised the vignette survey and added SVO measure as a control variable.

5.1 VARIABLES

As detailed below, the vignette study examines how title framing affects justice perceptions and related behaviors in a hypothetical public good setting. In this section, variables are introduced, and how they are operationalized and measured empirically is explained in detail.

Independent Variable and Manipulation

The social frame is the independent variable in this study. I created three different social frames through different task titles: The Community Task, The Wall Street Task, and The Decision Task for the same scenario. I used the community frame in order to create a high standard of contribution, the Wall Street frame for a low standard of contribution, and the decision frame for a neutral standard of contribution. Since negative injustice is experienced more strongly than positive injustice, I only operationalized negative injustice in the vignette study. Also, I added a short SVO survey at the beginning of the study and used this as a control variable.

Dependent Variables

First, I measured participants' initial contribution (from $0.00 to $10.00) to the group account to test whether or not framing creates variations in first contributions. Since participants were not informed about their partner's contribution level yet, their initial contribution measure would test whether only reading differently named task titles leads participants to contribute different amount to the group account (Hypotheses 1.a and 1.b).

Second, I examined whether framing creates variation in participants' justice evaluations when their partner contributed less than what the participant gave to the group account (Hypotheses 2.a and 2.b). In order to create a negatively unjust situation, participants were told that their partner gave only half of what the participant gave to the group account for the first round. Participants expressed their feeling of justice or injustice through a 7-point Likert scale. Fairness evaluation for the first round was scaled as 1= very unfair, 2= unfair, 3= somewhat unfair, 4= indifferent, 5= somewhat fair, 6= fair, and 7= very fair.

Third, I examined two means to restore justice: changes in the second contribution to the group account (Hypotheses 3.b and 3.c) and switching the unfair partner (Hypotheses 4.b and 4.c). I tested whether or not different social frames create different behavioral responses to injustice experiences. I took the difference between the first and second contribution amounts as my first measure of a justice-restoring attempt. Next, participants were asked to rank their preference to end the relationship with their unjust partner (7-point Likert scale). The scale ranged from 1= no preference to switch partner, 4= moderate preference to switch partner, and 7= strong preference to switch partner. This item was treated as my second measure of a justice-restoring attempt.

In addition to these primary dependent variables, I measured participants' expectations for other people's contributions to the group account in order to check whether or not framing creates different contribution expectations. I created two items. The first question asked whether participants thought that people would contribute as much of their $10.00 as they could to the group account while the second question asked whether participants thought that people would keep as much of their $10.00 as they could in their personal account. Participants expressed their expectations for other people's contribution behaviors through a 7-point Likert scale. Both motivation to contribute and motivation to keep money were scaled as 1= unlikely, 2= unlikely, 3= somewhat unlikely, 4= unsure, 5= somewhat likely, 6= likely, and 7= very likely.

I also measured how much participants felt the first round's outcome influenced their behavior on the second contribution. Participants were asked to express their judgment about the first round's influence on the second round through a 7-point Likert scale. The scale ranged from 1= not at all influential, 4= moderately influential, and 7= strongly influential.

Finally, I looked at participants' accounts of a partner's unjust behavior. I created two items. The first item explained the partner's low contribution through the partner's selfish personality while the second item explained the partner's low contribution through the nature of the task. Both items were scaled on a 7-point Likert scale that included 1= very unlikely, 2= unlikely, 3= somewhat unlikely, 4= unsure, 5= somewhat likely, 6= likely, and 7= very likely. I tested all of these dependent variables in differently framed conditions.

5.2 VIGNETTE PROCEDURES[4]

Undergraduate students at the University of South Carolina were asked to participate in this study. At the end of some class periods for several different class sections, I asked students to help a PhD student to complete an IRB approved sociological research survey. Students were also told their participation was completely voluntary and not required for their class.

The volunteer students were given a three-paged vignette survey to complete. The first page started with instructions and an example for a standard SVO measure. The measure of SVO presented members with a series of four decomposed games. Each game included three different distributions of points for themselves and another, unknown, person. The results classified participants as prosocial (those who maximize the outcomes for both self and others) or as individualistic (those who maximize the outcomes for only self). Based on previous studies, I classified participants as prosocial or individualistic only if they made at least three out of four choices consistent with a given SVO. Otherwise, they were classified as undetermined (Van Lange 1999; Simpson and Willer 2008).

On the second page of the survey, respondents were exposed to framing variables through different task names (The Community Task, The Wall Street Task, or The Decision Task) and each participant saw only one of the names. Then, they read the following hypothetical situation:

> *"The Community / Wall Street / Decision Task involves a set of tasks in a two-person group. In the Community / Wall Street / Decision Task, you get to decide how to spend $10 which has been placed into your "personal account." You may*

[4] The complete vignette protocol is provided in Appendix B.

choose to keep this money in your account, or to contribute some or all of it to a "group account." Any amount you and the Other contribute to the group account will be multiplied by 1.5 and then divided equally between the two of you, regardless of your individual contributions to the group account. Your total earnings per round will be your half of the earnings from the group account, plus whatever amount you didn't contribute to the group account."

Next, participants were shown a pay-off table with four examples. Afterward, they were told that compensation for the task was based on the amount of money that each member had earned at the end of the task. Then, they were asked to imagine themselves as one of the group members, and answer some related questions accordingly.

First, each participant was required to decide how much of their hypothetical $10.00 to give to the group account (from 0 to $10.00). After completing the first contribution, participants were asked two questions that measured their predictions about other people's motivations to contribute their money to the group account and to keep their money in their personal account. Next, participants were informed about their partner's low contribution, and they evaluated their partner's negatively unjust contribution to the group account. After experiencing negative injustice, participants were given the opportunity to restore justice through two different means. The first justice restoring opportunity was changing their subsequent contribution to the group account. The second justice restoring opportunity was ending the relationship with their unfair partner.

Additionally, participants were asked how much the first round experience influenced their second contribution to the group account. They were also asked what might explain the partner's unfair contribution (a personal factor or situational factor).

The completed surveys were collected and each participant was thanked for their participation. The collected data were organized, coded, and entered into the computer system.

5.3 HYPOTHESES

I operationalized my theoretical arguments through testable hypotheses. These hypotheses were tested through the data collected from a vignette study, which explained in detail in the previous sections. In this section, I provide each dependent variable as a subsection and listed related hypotheses.

First Contribution

The first dependent variable in this study is the participants' initial contribution to the group account (i.e. first contribution). Based on my theory, I assume that the community title creates a higher contribution expectation while the Wall Street title creates a lower contribution expectation to the group account. Additionally, I expect that the decision title creates a neutral contribution expectation. The personal endowment was $10.00, and participants were free to contribute any amount from $0.00 to $10.00 to the group account. Since the expectation for contribution is higher in the community task, I assume that the first contribution amount will be higher in the community group compared to the decision group and higher in the decision group compared to the Wall Street group. Therefore, I propose the following hypothesis:

H.1.a: Participants in the community group will give more money to the group account than participants in the decision group.

H.1.b: Participants in the decision group will give more money to the group account than participants in the Wall Street group.

Fairness Evaluation

The second dependent variable is the participants' fairness evaluations for their hypothetical interaction with a low-contributor partner. When an actor makes fairness evaluations, s/he may take into account all available information. Very common factors can be how much s/he contributed and how much his/her partner contributed to the group account. My theory adds how information created by a social frame can have effects on fairness evaluations. The information created by frames leads actors to make different social comparisons. Since the community title creates a higher contribution expectation, the Wall Street tittle creates a lower contribution expectation, and the decision title creates a neutral contribution expectation to the group account, I assume that each social comparison will be different and consequently, fairness evaluations will vary across groups. I expect that participants who have a high expectation for contribution (e.g. the community group) will be more disappointed with others' low contributions. In other words, injustice evaluation will be stronger in the community group relative to the decision group, and stronger in the decision group relative to the Wall Street group. Thus,

H.2.a: Injustice will be stronger in the community group than the decision group.

H.2.b: Injustice will be stronger in the decision group than the Wall Street group.

Changes in the Second Contribution

The third dependent variable I analyzed is one of the subsequent behaviors: difference between the first contribution and the second contribution, in other words, changes in the second contribution. When participants experience justice or injustice, I assume that their second contribution will be a response to their justice or injustice experience. Therefore, I formulate the following hypothesis:

H.3.a: Participants who experience stronger injustice will decrease their second contribution more than participants who experience justice.

However, my theory specifically focuses on how framing influences justice evaluations by creating different standards for contribution. As discussed earlier, the community frame is assumed to create a high contribution expectation, the decision frame is assumed to create a neutral contribution expectation, and the Wall Street frame is assumed to create a low contribution expectation. When participants encounter a low-contributor partner, I expect that the community group will experience stronger injustice than the decision group, and that the decision group will experience stronger injustice than the Wall Street group. This variation among groups is likely to happen due to different contribution standards created through different frames. Having a high or low contribution expectation leads people to make different social comparisons. For instance, comparing one's own contribution to a high standard and comparing one's own contribution to a low standard could result in completely different justice evaluations. Consequently, I formulate the following hypotheses:

H.3.b: Participants in the community group will decrease their second contribution more than the decision group.

H.3.c: Participants in the decision group will decrease their second contribution more than the Wall Street group.

Tendency to Change Partner

The fourth dependent variable is another means to restore justice: participants' willingness to switch partners for future rounds. I assume that changing partner, in other

words ending the relationship, is another response to the fairness evaluation. Therefore, I formulate the following hypothesis:

H.4.a: Participants who experience stronger injustice will be more willing to change partners than participants who experience justice.

However, as discussed in the previous subsection, my theory predicts that framing affects justice evaluations and thus, I expect that the community group will experience stronger injustice than the decision group, and that the decision group will experience stronger injustice than the Wall Street group. Thus,

H.4.b: Participants in the community group will be more willing to change partners than the decision group.

H.4.c: Participants in the decision group will be more willing to change partners than the Wall Street group.

CHAPTER 6

VIGNETTE STUDY: ANALYSES

To organize my analyses, I created a section for each dependent variable and a subsection for each independent variable, interaction term, and additional analysis. In each section, I provide information about my data and report my findings. Finally, I discuss my findings in the last section.

6.1. DATA AND PARTICIPANTS

The collected data for each dependent variable were analyzed in SPSS. Before conducting statistical tests, I checked if the data satisfied assumptions of normality, homoscedasticity, and multicollinearity for linear regression, ANOVA, and ANCOVA analyses.

A total of 145 cases were used in the analysis: 49 assigned to the decision task, 46 to the community task, and 50 to the Wall Street task. Although I planned to obtain 50 cases for each condition, one participant from the decision group and 4 participants from the community group did not complete the survey. Additionally, I classified participants in accordance with their answers on the SVO scale in the vignette survey. 57 participants were classified as individualistic, 64 participants as prosocial, and 24 as undetermined. The distribution of participants by SVO classification and task names are introduced in Table 6.1 below.

Table 6.1: Distribution of Participants in Vignette Study (N_{total} = 145)

		TASK NAME…			
		Decision	***Community***	***Wall Street***	***Total***
SVO…	***Individualistic***	15	18	24	57
	Prosocial	25	19	20	64
	Undetermined	9	9	6	24
	Total	49	46	50	

6.2 FIRST CONTRIBUTION

First, I measured the participants' first contribution ($0.00 to $10.00) to the group account. The average first contribution to the group account was $5.76 (SD = 3.17, N=145) out of $10.00 across all conditions.

Data

Before testing the framing effect on the first contribution, I checked whether or not the data satisfy the required assumptions. The data are slightly non-normal in accordance with the Kolmogorov-Smirnov and Shapiro-Wilk tests. The value of skewness is = -.038 (SE = .201) and the value of kurtosis is = -.901 (SE = .400). When the values are divided by their standard errors, the skewness is = -.19 and the kurtosis is = -2.25. Since these values are between -2.00 and +2.00, the departure from normality is not too extreme (George and Mallery 2003; Joanes and Gill 1998). Therefore, I conclude that my data display no skewness but some kurtosis issues. This indicates that the distribution is quite symmetric but a bit flat or platykurtic.

Second, I checked whether or not the data satisfied the assumption of homoscedasticity. The data satisfied the assumption of homoscedasticity in both the Breusch-Pagan [LM= .033, p = .856] and Konker [LM= .060, p= .806] tests (Breusch and Pagan 1979; Konker and Bassett 1982). Finally, I checked my data for multicollinearity. I

used SPSS multicollinearity diagnostics and found that the VIF[5] values are small. This means that the data do not violate the multicollinearity assumption. Therefore, I conducted parametric tests to analyze my data.

Findings

Framing Effect. The mean contributed amount was $5.88 (SD = 3.36) for the decision group, $5.66 (SD = 2.92) for the community group, and 5.71 (SD = 3.27) for the Wall Street group. A one-way between-subject ANOVA was conducted to test the effect of task name (The Decision Task, The Community Task, The Wall Street Task) on the first contribution. There was no significant effect at the $p < .05$ level for the three conditions [$F(2, 142) = .066$, $p = 0.936$]. To control for SVO, I ran an ANCOVA test [$F(2,142) = .083$, $p = .920$]. The results reveal that task name had no significant effect in predicting the first contribution when statistically controlling for SVO. However, the main effect of SVO was significant.

Consequently, the results do not support hypothesis 1.a: "*Participants in the community group will give more money to the group account than participants in the decision group*" and hypothesis 1.b: "*Participants in the decision group will give more money to the group account than participants in the Wall Street group*."

SVO Effect. The previous ANCOVA test showed that framing had no effect, but that SVO had a strong effect on the first contribution. Therefore, although SVO is not in my hypotheses, I did an additional test for SVO as an independent variable. I ran a one-way between-subject ANOVA and found a strong effect for SVO[6] [$F(1, 119) = 11.865$, p

[5] $VIF = (1/(1-R^2))$

[6] Undetermined cases (24) are eliminated from this analysis. The result including those cases was very similar [$F(2,142) = 7.538$, $p = .001$).

= .001]. The mean contributed amount was $4.54 (SD = 3.10) for the individualistic group and $6.46 (SD = 3.01) for the prosocial group. Overall, the result shows that prosocial participants were more likely to give money to the group account in the first round than individualistic participants.

Framing-SVO Interaction Effect. Next, I checked whether or not SVO moderates the effect of task name, but did not find any interaction effect. The results from a two-factorial ANOVA test are summarized in Table 6.2 below. As a result, I conclude that SVO, but not task name, predicted the first contribution.

Table 6.2: Two-Factorial ANOVA Test Results for the First Contribution

		F	***P-value***
	Independent Variables:		
-	*Task Name*	.377	.686
-	*SVO*	7.230	.001
-	*Task Name*SVO*	.361	.836

* = p ≤ .10, ** = p ≤ .05, *** = p ≤ .01, **** = p ≤ .001.

Motivations. After completing the first contribution, participants answered two questions that measured their predictions about other people's motivations to contribute their money to the group account and to keep their money in their personal account. However, these two items were not significantly correlated or reliable (Cronbach's Alpha=.37). Consequently, I did not do any test with these items.

I suspect these items were unreliable for several possible reasons. First, respondents were asked to evaluate other people's motivation, instead of their own, to give to the group account and to keep money in their personal account in general. Another possible

explanation for unreliable items is that participants did not understand these items due to poor wording.[7]

6.3 FAIRNESS EVALUATION

In this section, I analyzed the second dependent variable: the participants' fairness evaluations. After submitting their first contribution, participants were told that their partner contributed only half of what the participant gave to the group account. Then, they were required to evaluate the fairness of the situation (scaled as 1= very unfair, 2= unfair, 3= somewhat unfair, 4= indifferent, 5= somewhat fair, 6= fair, and 7= very fair).

Data

The data are slightly non-normal in accordance with the Kolmogorov-Smirnov and Shapiro-Wilk tests. However, the skewness is = 1.82 and kurtosis is = -1.63. Therefore, I conclude that my data display no skewness or kurtosis issues. The data satisfied the assumption of homoscedasticity in both the Breusch-Pagan [LM= .809, p = .369] and Konker [LM= 1.221, p = .269] tests. Also, the data satisfy the assumption of multicollinearity. Consequently, I conducted parametric tests to analyze my data.

Findings

Framing Effect. An ANCOVA test was conducted to determine if there was a statistically significant difference between differently named tasks on fairness evaluations when statistically controlling for the participants' initial contribution (i.e. first contribution). The test reveals the effect was in significant [F (2,142) = .231, p = .794]. This means that holding the initial contribution constant, task name did not predict fairness

[7] These items were refined for the experimental study and the results were reliable.

evaluation. The mean fairness value was 3.39 for the decision group (SD = 1.38), 3.39 for the community group (SD = 1.45), and 3.22 for the Wall Street group (SD = 1.57).

The result indicates that hypothesis 2.a: "*Injustice will be stronger in the community group than the decision group*" and hypothesis 2.b: *"Injustice will be stronger in the decision group than the Wall Street group"* are not supported by the data.

SVO Effect. I also checked for an effect of SVO, but I did not detect any significant effect of SVO on fairness evaluation when statistically controlling for the initial contribution. An ANCOVA test shows the effect was insignificant [F (1,119) = 1.306, p = .255] which means that holding the initial contribution constant, SVO did not predict fairness evaluation. The mean fairness value was 3.09 (SD= 1.28) for prosocial participants and 3.47 (SD = 1.58) for individualistic participants. Although prosocial participants showed slightly more anger towards unfair partner than individualistic participants, the difference was not statistically significant.

SVO-Framing Interaction Effect. I also did not find any interaction effect between task name and SVO when statistically controlling for initial contribution. The results from a two-factorial ANCOVA test are summarized in Table 6.3 below.

Table 6.3: Two-factorial ANCOVA Results for Fairness Evaluation

	F	**P-Value**
Control Variable:		
- First Contribution	.666	.416
Independent Variables:		
- Task Name	.014	.986
- SVO	1.317	.254
- Task Name*SVO	.706	.496

* = p ≤ .10, ** = p ≤ .05, *** = p ≤ .01, **** = p ≤ .001.

First Contribution Effect. Since I could not find any significant effect for framing and SVO on fairness evaluation, I checked whether the participant's own first contribution influenced their fairness evaluation. In other words, I checked whether or not participants who gave more money to the group account in the first round evaluated the situation as more unfair than participants who gave less money. A linear regression shows this effect was insignificant [t = -1.546, p = .124] which means that participants' initial contribution did not predict fairness evaluations.

First Contribution-Framing Interaction Effect. Framing and participants' first contribution were insignificant in predicting fairness evaluation as single factors. I also checked whether or not how much participants gave to the group account in the first round and which task they were assigned to had any interaction effect on fairness evaluation. To see the interaction effect, I conducted a hierarchical linear regression and incorporated multiple predictors. The models are summarized in Table 6.4 below.

Table 6.4: Hierarchical Multiple Regression Models for Fairness Evaluation

	Model 1 ***B (SE)***	***Model 2*** ***B (SE)***	***Model 3*** ***B (SE)***
Intercept	3.220 (.208) ****	3.559 (.302) ****	4.354 (.411) ****
Independent Variables:			
- Decision[1]	.168 (.296)	.178 (.294)	-1.219 (.585) **
- Community[1]	.171 (.300)	.169 (.299)	-.890 (.620)
- First Contribution		-.059 (.038)	-.199 (.063) ***
- Decision*FirstCont			.241 (.088) ***
- Community*FirstCont			.186 (.096) *
Omnibus F Tests	.218	.942	2.213*

* = p ≤ .10, ** = p ≤ .05, *** = p ≤ .01, **** = p ≤ .001.

[1] The Wall Street task is the reference category.

As can be seen from Model 1 and Model 2, when task name and first contribution were in the model as predictors, their main effects were insignificant. However, task name and initial contribution interacted significantly, as seen in Model 3. This means that initial contribution was moderated by the task name variable in predicting fairness evaluation. Because these factors interacted, simply examining their main effects can lead to incorrect conclusions (Baron and Kenny 1986; Hayes 2013). Although I expected that people who contributed more money to the group account in the first round would experience stronger injustice, statistical tests show that this effect was insignificant. However, the interaction effect leads me to check whether this relationship varies across differently named tasks and is more complicated than the interpretation of the main effects would suggest.

Partitioned Data Analysis. After finding a significant interaction effect between framing and first contribution (See Table 6.4), I partitioned my data by task name, and looked closer at the data. Compared to the other tasks, the Wall Street group was the only task where people who gave more money in the first round evaluated the situation as more unfair than people who gave less money [t= -3.156, p = .003]. Low-givers and high-givers evaluated the situation very similarly in the community and decision groups. The regression test results were statistically insignificant for the community group [t= -.171, p =.865] and the decision group [t= .716, p = .477].

Overall, the partitioned data and interaction analyses show that task name and first contribution were important factors in predicting fairness evaluation. Framing did predict fairness evaluation only if initial contribution was taken into account in a model. However, these results do not support hypothesis 2.a: "*Injustice will be stronger in the community group than the decision group*" and hypothesis 2.b: *"Injustice will be stronger in the*

decision group than the Wall Street group". Actually, the results indicate that participants in the Wall Street task were more likely to be more sensitive to unfair partner than participants in the community and decision tasks when their own initial contribution was taken into account. In other words, the results determine that participants who gave more money to the group account and were assigned to the Wall Street task evaluated the situation as more unfair than others.

Additional ANOVA Tests. Additionally, I transformed the first contribution variable into a categorical variable which is coded as "low-giver" if the contributed amount is less than $5.00, "moderate-giver" if the contributed amount is equal to $5.00, or "high-giver" if the contributed amount is more than $5.00. Then, I ran a two-factorial ANOVA test to analyze the interaction effect of the task name and first contribution variables. The results are summarized in Table 6.5 below.

Table 6.5: Two-factorial ANOVA Results for Fairness Evaluation

	F	**P-Value**
Independent Variables:		
- Task Name	.053	.948
- (Categorical) First Contribution	.912	.404
- Task Name*(Categorical) FirstCont	1.498	.206

* = p ≤ .10, ** = p ≤ .05, *** = p ≤ .01, **** = p ≤ .001.

I obtained the estimated marginal means from the previous ANOVA test and generated Figure 6.1 to show the marginal means of fairness evaluations by study name and the participants' contribution level in the first round.

Figure 6.1 shows that fairness evaluations vary significantly by giving-level only in the Wall Street group. The difference between low-givers and high-givers within the Wall Street group is 1.32, but only .25 in the community group and -.44 in the decision

group. This indicates that the Wall Street group evaluated fairness according to how much they gave to the group account.

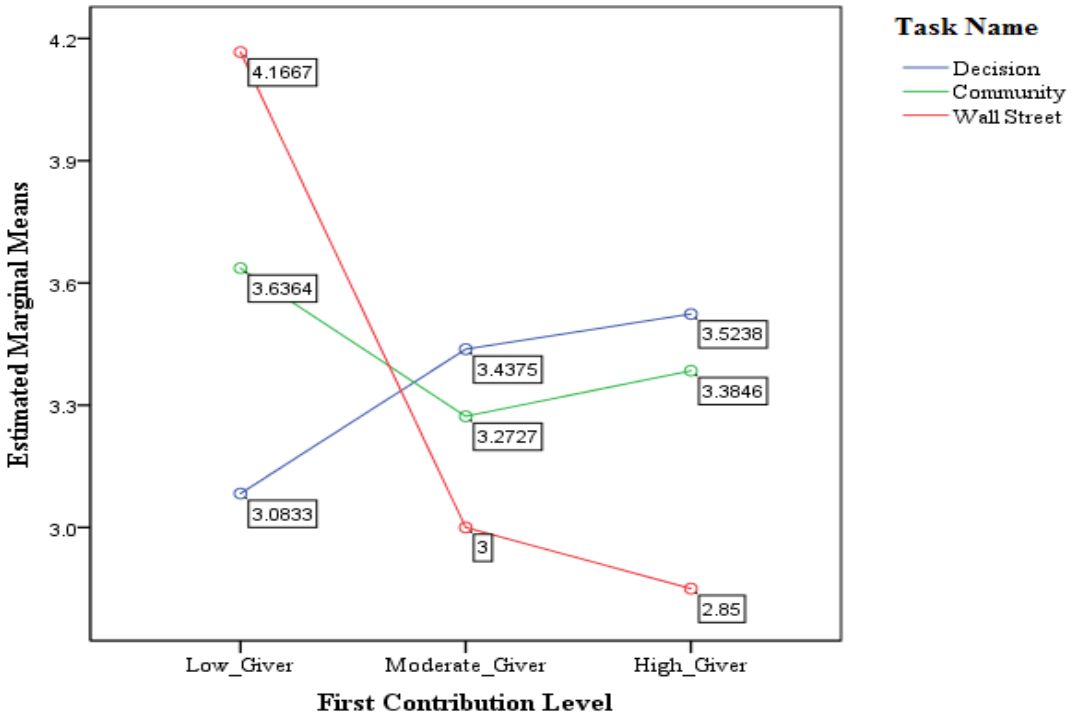

Figure 6.1: Estimated Marginal Means of Fairness Evaluation

6.4 CHANGES IN THE SECOND CONTRIBUTION

In this section, I analyzed one of the subsequent behaviors: changes in the second contribution. After reporting their justice or injustice evaluation, participants were given another hypothetical $10.00 endowment and told that they could either keep it for their own personal account or contribute it to the group account (any amount from $0.00 to $10.00). The difference between their first contribution and their second represents their response to their experience of justice or injustice in the first interaction[8].

[8] I subtracted their first contribution amount from their second contribution amount. If the difference was less than zero (i.e. negative), the change was a decrease; if the difference was more than zero (i.e. positive), the change was an increment; and if the difference was zero, there was no change.

Data

The data are slightly non-normal in accordance with the Kolmogorov-Smirnov and Shapiro-Wilk tests. However, the skewness is = 1.17 and kurtosis is = 5.55, indicates that the data have no skewness, but do have some kurtosis issues (i.e. platykurtic). The data satisfied the assumption of homoscedasticity in both the Breusch-Pagan [LM= 1.998, p = .158] and Konker [LM= .974, p= .324] tests. Also, the data satisfy the assumption of multicollinearity. Consequently, I conducted parametric tests to analyze my data.

Findings

Fairness Evaluation Effect. I checked whether the participants' fairness evaluation after the first round predicted the difference between the first and second contributions. A linear regression analysis reveals the effect was significant [t = -2.486, p = .014] and shows that participants who experienced stronger injustice decreased their second contribution more than others when their first contribution was statistically controlled. The hypothesis 3.a: "*Participants who experience stronger injustice will decrease their second contribution more than participants who experience justice"* is supported by the data.

Framing Effect. Next, I did a one-way ANCOVA test for differently named studies when controlling for the first contribution. The test was significant for the three conditions [F (2, 142) = 13.321, p = .039]. The mean decreased amount was $2.45 (SD= 2.80) for the decision group, $2.02 (SD= 2.97) for the community group, and $3.25 (SD= 2.59) for the Wall Street group.

Since the mean difference between the community group and the Wall Street group was large, I also ran the LCD and Bonferroni post-hoc tests. The results from the LCD test indicate that the comparison between the Wall Street and the community groups was

significant [p = .015] and the comparison between the Wall Street and the decision groups was marginally significant [p = .061]. The results from the Bonferroni test indicate that the comparison between the Wall Street and the community was significantly associated with the changes in the second contribution [p = .046].

However, the results do not support hypothesis 3.b: *"Participants in the community group will decrease their second contribution more than the decision group"* and hypothesis 3.c: *"Participants in the decision group will decrease their second contribution more than the Wall Street group*". The results reveal that participants in the Wall Street group were more likely to decrease their second contribution compared to participants in the community group.

SVO Effect. I also checked for an SVO effect when controlling for the first contribution variable. I found that the one-way ANCOVA test result was insignificant [F (1, 119) = 1.499, p = .223]. Although the result was not statistically significant, prosocial participants (M = 2.63, SD = 3.00) decreased their second contribution slightly more than individualistic participants (M = 1.99, SD = 3.19). However, the difference was not statistically significant.

SVO[9]*-Framing Interaction Effect.* I also checked whether SVO has a moderating effect on framing in predicting changes in the second contribution. I did not find any significant interaction between the SVO and framing variables in predicting the difference between the first contribution and the second contribution when holding the first contribution constant. The results from two-way ANCOVA test are summarized in Table 6.6 below.

[9] To avoid losing cases, I coded SVO as follows: 0=undetermined, 1= prosocial, and 2=individualistic.

Table 6.6: Two-factorial ANCOVA Results for Changes in the Second Contribution

	F	P-Value
Control Variable:		
- First Contribution	83.833	<.001
Independent Variables:		
- Task Name	3.375	.037
- SVO	2.374	.097
- Task Name*SVO	.350	.843

* = p ≤ .10, ** = p ≤ .05, *** = p ≤ .01, **** = p ≤ .001.

First Contribution Effect. I also checked if the participants' own first contribution influenced their second contribution. The result from a linear regression was significant [t= 9.615, p < .001]. This shows that participants who gave a lot to the group account decreased their second contribution more than participants who gave little to the group account in the first round. This also means that those who contributed more money to the group account in the first round may have had more room to decrease their second contribution.

SVO, Framing, First Contribution, Fairness Effects. Finally, I ran a hierarchical multiple regression analysis to create better prediction models (See Table 6.7 below).

Table 6.7: Hierarchical Multiple Regression Models for Changes in the Second Contribution

	Model 1 ***B (SE)***	***Model 2*** ***B (SE)***	***Model 3*** ***B (SE)***
Intercept	4.591 (.643) ****	.138 (.706)	1.320 (.851)
Independent Variables:			
- SVO	-.990 (.354) ***	.226 (.294)	-.242 (.289)
- Decision[1]	-1.031 (.610) *	-.956 (.485) *	-.902 (.477) *
- Community[1]	-1.386 (.617) **	-1.232(.490) **	-1.180 (.483) **
- First Contribution		.598 (.065) ****	.578 (.065) ****
- Fairness			-.324 (.135) **
Omnibus F Tests	3.977***	25.596****	22.323****

* = p ≤ .10, ** = p ≤ .05, *** = p ≤ .01, **** = p ≤ .001.

[1] The Wall Street group is the reference category.

As can be seen from Model 1, prosocial and undetermined participants decreased their second contribution more than the individualistic participants, and the Wall Street group decreased their second contribution more than the community group. However, the direct effect of SVO disappeared when I added the first contribution variable into other models (See Model 2 and 3). As can be recalled from the First Contribution Section, SVO had an effect on the first contribution variable as well as on the second contribution variable as a predictor. The first contribution also had an effect on the second contribution as a predictor. When these variables were all modeled together, the SVO's direct effect disappeared. This shows that SVO was mediated by the first contribution, and thus the indirect effect should be considered. This means that prosocial and undetermined participants contributed the most in the first round and thus they were able to decrease their second contribution by a large amount as well, compared to individualistic participants.

To investigate this relationship, I ran a mediation analysis and found that SVO had direct and indirect effects (through the first contribution) on the second contribution. Mediation analysis confirmed that when the first contribution was accounted for in a model, SVO lost its direct effect on the second contribution. The indirect effect size was -.76 with a 95% CI between -1.26 and -.36 which does not include "0" and thus indicates that an indirect effect exists and is different than "0". Also, the Sobel test showed that the indirect effect was significant.

As can be seen from Model 3, I conclude that those who gave more in the first round, those who evaluated the situation as more unfair, and those who were in the Wall Street task decreased their second contribution more than others. However, initial contribution was not controlled in Model 3. Therefore, I did the following analysis.

An Additional ANCOVA Analysis[10]. I controlled for the first contribution and ran a two-factorial ANCOVA test to see the effect of fairness evaluation (which was coded as a categorical variable: 1= unfair, 2= unsure, and 3= fair) and the effects of task name on difference in the second contribution compared to the first contribution. Fairness evaluation and task name were significant (which supports the regression Model 3 in Table 6.7), and their interaction was marginally significant. The results are summarized in Table 6.8 below.

Table 6.8: Two-Factorial ANCOVA Results for Changes in the Second Contribution

	F	**P-Value**
Control Variable:		
- First Contribution	86.566	<.0001
Independent Variables:		
- Task Name	3.407	.036
- Fairness	6.051	.003
- Task Name*Fairness	.2.346	.058

$^{*} = p \leq .10$, $^{**} = p \leq .05$, $^{***} = p \leq .01$, $^{****} = p \leq .001$.

From this ANCOVA test, I generated a figure (See Figure 6.2 below) showing the marginal means of the changes across differently named tasks and fairness evaluations when controlling for the first contribution variable. The figure specifies that participants in the Wall Street task made slightly larger changes in their second contribution compared to the decision and the community groups. This implies that participants in the Wall Street group who did express strong feelings of injustice consistently decreased their second contribution. However, participants in the decision group and especially the community group did not change their second contribution in accordance with their justice evaluations.

[10] To control the first contribution variable, I added this additional test.

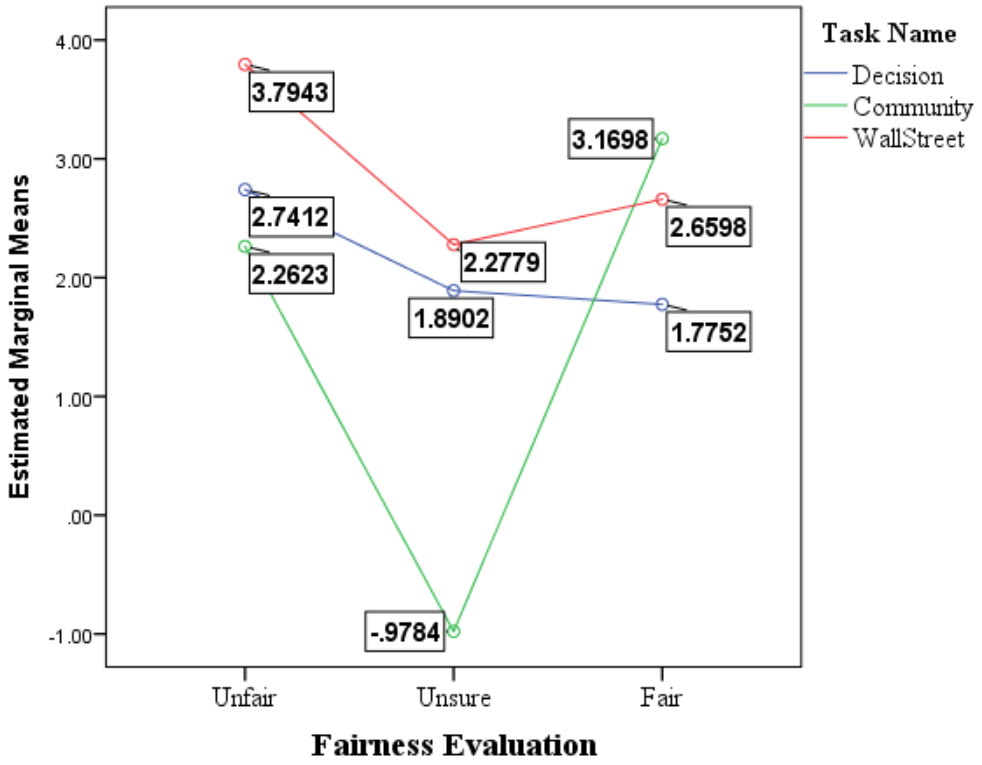

Figure 6.2: Estimated Marginal Means of Changes in the Second Contribution[11]

Furthermore, participants in the community group who evaluated the situation as fair decreased their second contribution more than those who evaluated the situation as unfair and unsure. This unpredicted interaction may have happened due to collectiveness created by the community title. This may indicate that participants in the community group may not express their negative feeling of injustice towards another group member, but still restore justice by reducing their second contribution. Also, participants who evaluated the situation as unsure increased their second contribution. However, only 6 participants were in the unsure group and one of them gave 0 in the first round and increased the second

[11] Covariates appearing in the model are evaluated at the following values: first contribution= 5.755.

contribution to 10 points. Therefore, it is difficult to confidently conclude anything from this result.

As can be remembered from the regression analysis (See Table 6.7, Model 3), the Wall Street group decreased their second contribution significantly more than the community group, and the difference was marginally significant for the decision group. This result is confirmed by the marginal means outcomes as well. In other words, the figure specifies that the Wall Street group decreased their second contribution more than both groups in general.

Partitioned Data Analysis. In addition to the overall analyses, I also partitioned my data by task name and ran a linear regression. I found that only in the Wall Street group did participants who evaluated the situation as unfair significantly decreased their second contribution more than participants who evaluated the situation as unsure and fair [t= -3.632, p = .001]. However, low-givers and high-givers evaluated the situation very similarly in the community and decision groups and the results were statistically insignificant {[t= .072, p = .943] and [t= 1.125, p = .266] respectively}.

Overall, the results from the complete and partitioned data analyses do not support hypotheses 3.b or 3.c. This means that participants in the community task did not decrease their second contribution more than participants in the decision task, and that participants in the decision task did not decrease their second contribution more than participants in the Wall Street task. In contrast to my prediction, the Wall Street group did decrease their second contribution more than the community group.

Additionally, only within the Wall Street group did justice evaluation lead participants to decreased their second contribution significantly. In other words, the Wall

Street group decreased their second contribution significantly more if they evaluated the situation as unfair.

6.5 TENDENCY TO CHANGE PARTNER

The second justice-restoring attempt measure is the participants' preference to change partners for future rounds. After submitting their second contribution, participants were asked to what extent they would prefer to switch their partner and work with a different person for future rounds. Participants ranked their preference to end the relationship with their unjust partner (7-point Likert scale). The scale ranged from 1= no preference to switch partner, 4= moderate preference to switch partner, and 7= strong preference to switch partner.

Data

The data are slightly non-normal in accordance with the Kolmogorov-Smirnov and Shapiro-Wilk tests. However, the skewness is = -2.56 and kurtosis is = .71, indicating that my data have some skewness issues, but do not have kurtosis issues. The data satisfied the assumption of homoscedasticity in both the Breusch-Pagan [LM= .047, p = .829] and Konker [LM= .043, p= .836] tests. The data also satisfy the assumption of multicollinearity. Consequently, I conducted parametric tests to analyze my data.

Findings

Fairness Evaluation Effect. First, I checked whether or not the participants' fairness evaluation for the first round predicted the participants' willingness to change partners for future rounds when statistically controlling for the participants' initial contribution. The result from a linear regression analysis was highly significant [$t = -3.618$, at the $p < .001$ level] and shows that participants who experienced stronger injustice were more willing to

work with a different partner for future rounds while participants who experienced justice were less willing to change their partner when their initial contribution was held constant.

The result strongly supports hypothesis 4.a: "*Participants who experience stronger injustice will be more willing to change partners than participants who experience justice*."

Framing Effect. Next, I checked whether or not framing had an effect on the tendency to change partner. A one-way between-subject ANCOVA test result was marginally significant for the three differently named conditions [F (2, 142) = 2.591, p = .079] when statistically controlling for the first contribution variable. The mean value for willingness to change partners was 5.08 (SD= 1.21) for the decision group, 5.07 (SD= 1.37) for the community group, and 5.58 (SD= 1.25) for the Wall Street group.

Since the result from the ANCOVA test was marginally significant and the means were different, I did an LSD post-hoc test. The comparison between the Wall Street and the community groups [p = .051] and the comparison between the Wall Street and the decision groups [p =. 52] were marginally significant. This indicates that difference between means was statistically significant.

Finally, I ran a linear regression analysis. When my reference group was the Wall Street group, the community group [t = -1.977, p = .050] was significantly associated with the tendency to change partners, and the result for the decision group [t = -1.945, p = .054] was marginally significant.

However, these results do not support hypothesis 4.b*: "Participants in the community group will be more willing to change partners than the decision group"* and hypothesis 4.c: *"Participants in the decision group will be more willing to change partners than the Wall Street group."* Participants in the community group were not more willing to

change partners than the decision group, and participants in the decision group were not more willing to change partners than the Wall Street group. However, the results from these analyses reveal that participants in the Wall Street group were more willing to change their partners than participants in the community and decision groups.

SVO Effect. I checked for an SVO effect when statistically controlling for the first contribution variable. A one-way ANCOVA test shows that SVO was marginally significant on the tendency to change partners [F (1, 119) = 2.867, p = .093]. The mean tendency to change partners was 5.48 (SD= 1.17) for prosocial participants and 5.05 (SD= 1.47) for individualistic participants. Additionally, I ran a planned contrast test and the result was marginally significant as well.

SVO-Framing Interaction Effect. I also checked whether SVO has a moderating effect on framing when controlling for the initial contribution. I could not find any significant moderating effect for SVO in predicting the tendency to change partners. The results from two-way ANCOVA test are summarized in Table 6.9 below.

Table 6.9: Two-factorial ANCOVA Results for Tendency to Change Partner

	F	**P-Value**
Control Variable:		
- First Contribution	.015	.903
Independent Variables:		
- Task Name	2.166	.119
- SVO	2.039	.134
- Task Name*SVO	.340	.850

$^{*} = p \leq .10$, $^{**} = p \leq .05$, $^{***} = p \leq .01$, $^{****} = p \leq .001$.

First Contribution Effect. I also checked whether or not the participants' own first contribution influenced their willingness to change their partners. The result from a linear

regression was insignificant [t= .626, p = .532]. This implies that participants who gave a lot and who gave little to the group did not have different tendencies to change partners.

SVO, Framing, and Fairness Evaluation Main Effects and Framing-Fairness Evaluation Interaction Effect. I did a hierarchical multiple regression to see sequential effects of predictors on the tendency to change partners. (See Table 6.10 below).

Table 6.10: Hierarchical Multiple Regression Models for Tendency to Change Partner

	Model 1 ***B (SE)***	***Model 2*** ***B (SE)***	***Model 3*** ***B (SE)***
Intercept	5.779 (.272) ****	6.573 (.343) ****	6.420 (.433) ****
Independent Variables:			
- Decision[1]	-.533 (.259) **	-.489 (.249) *	-.387 (.618)
- Community[1]	-.539 (.262) **	-.495 (.252) *	-.060 (.614)
- SVO	-.146 (.150)	-.138 (.144)	-.145(146)
- Fairness		-.250 (.070) ****	-.200 (.113) *
- Fairness*Decision			-.033 (.172)
- Fairness*Community			-.131 (.169)
Omnibus F Tests	2.039	4.858****	3.311***

* = p ≤ .10, ** = p ≤ .05, *** = p ≤ .01, **** = p ≤ .001.
[1] The Wall Street group is the reference category.

As can be seen from Table 6.10, Model 2 shows that the Wall Street group and people who evaluated other's contribution as more unfair were more willing to change their partners than others. As seen from Model 3, the interaction terms were not significant and the model became less predictive when interaction terms were added into the model.

Framing-(Categorical) Fairness Interaction Effects. Furthermore, I also ran a two-factorial ANCOVA test the effects of framing and (categorical) fairness variables when statistically controlling the initial contribution. The results are summarized in Table 6.11 below.

Table 6.11: Two-factorial ANCOVA Results for Tendency to Change Partner

	F	P-Value
Control Variable:		
First Contribution	.137	.712
Independent Variables:		
- Task Name	2.826	.063
- Fairness	4.143	.018
- Task Name* Fairness	.359	.837

* = p ≤ .10, ** = p ≤ .05, *** = p ≤ .01, **** = p ≤ .001.

There was no interaction, but the main effect of fairness significantly predicted the tendency to change partners, and the main effect of task name was marginally significant. I also generated Figure 6.3 below which shows the marginal means of the tendency to change partners across differently named tasks and different levels of fairness evaluations.

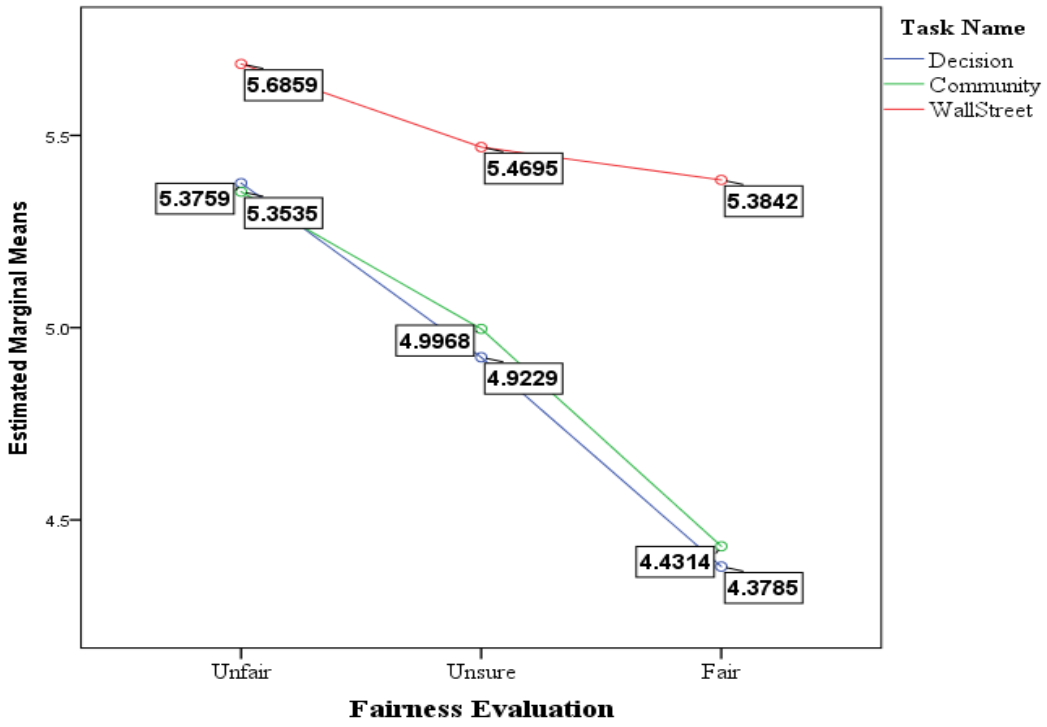

Figure 6.3: Estimated Marginal Means of Tendency to Change Partner[12]

[12] Covariates appearing in the model are evaluated at the following values: first contribution= 5.755.

As can be seen from the figure, participants in the Wall Street task were more willing to change partners than other groups without regarding their fairness evaluations, which is consistent with the framing effect analysis above. More interestingly, the figure specifies that the community and decision groups made their decision about changing partners by taking their fairness evaluations into account. The mean of participants' willingness to change partners in the community group was 5.35 for those who evaluated the situation as unfair and 4.43 for those who evaluated the situation as fair. The mean of participants' willingness to change partners in the decision group was 5.38 for those who evaluated the situation as unfair and 4.40 for those who evaluated the situation as fair. This implies that participants in the community and decision tasks who did express strong feelings of injustice consistently showed more interest in changing their unfair partners.

However, people in the Wall Street group who evaluated the situation as either just or unjust did not show different tendencies to change partners. The participants' preference to change partners in the Wall Street group was 5.69 for those who evaluated the situation as unfair and 5.38 for those who evaluated the situation as fair.

Partitioned Data Analysis. In addition to the overall analyses, I also partitioned my data by study name. I found that only in the community group did participants who evaluated the situation as unfair want to change their partner more than participants who evaluated the situation as fair or unsure. The result from a linear regression analysis for the partitioned data was significant for the community group [t= -2.457, p = .018]. However, justice evaluation was less important in deciding to change partner within the decision [t = -1.825, p = .074] and Wall Street [t = -1.903, p = .063] groups.

Results from the partitioned data were slightly inconsistent with the ANOVA test and marginal means results. Although the estimated marginal means outcome shows that both the decision and community groups were sensitive to their justice evaluations in making their decisions about changing their partners, the partitioned data show only the community group relied on their fairness evaluation and the decision and Wall Street groups only slightly used their fairness evaluation in making their decisions.

Overall, the results from the complete and partitioned data analyses do not support hypotheses 4.b or 4.c, but still show that the participant's interest in changing partners relies on their fairness evaluation and the specific task they are assigned in. Since the results were not consistent with the partitioned data, I only conclude that the Wall Street group was more willing to change their partner than the other groups and that fairness evaluation was not a strong indicator in the Wall Street group when deciding to change partners.

6.6 DISCUSSION

The vignette results fully support hypotheses 3.a and 4.a, but other hypotheses are not supported by the data. Some results indicate that behaviors were actually the opposite of what I had predicted in some conditions. For instance, my hypotheses assumed that the community group would decrease their second contribution and change their partner more than the decision group, and that the decision group would decrease their second contribution and change their partner more than the Wall Street group. However, the results show that the Wall Street group decreased their second contribution and changed their partner more than the community group. I visualize my findings in Figure 6.4 below.

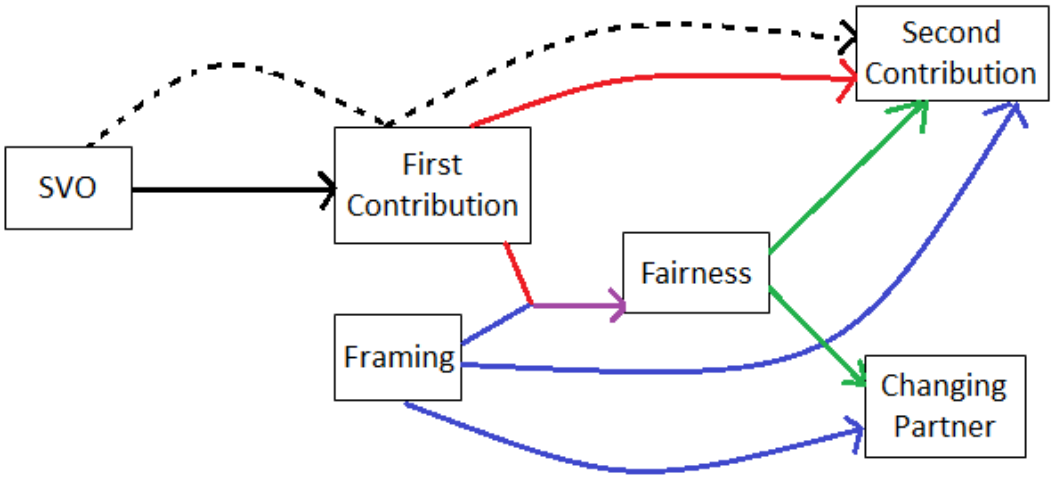

Figure 6.4: Vignette Study Findings (Note: Indirect relationships illustrated with dotted arrows. Mixed colors refer to interactions.)

The unpredictable results suggest that either that the relationship was more complicated than predicted or that the manipulations did not work the way I assumed they would.

First Contribution. People in differently named groups did not contribute significantly different amounts to the group account. Despite some previous studies suggesting the reverse (e.g., Ellingsen et al. 2012; Liberman et al. 2004), the results from the vignette show that first contributions, i.e. unconditional contributions, to the group account did not vary across different social frames (Bernold et al. 2014; Brandts and Schwieren 2009; Dufwenberg, Gächter, and Hennig-Schmidt 2011). This means that the title frames did not lead participants to contribute certain contribution amounts (e.g. high, low). This also implies that different titles did not create different expectations for contribution. In other words, the community, Wall Street, and decision task titles did not create high, low, and equal contribution expectations respectively.

One possible explanation for this could be that the Wall Street title may have induced members to contribute to the group account to be able to gain more points for their personal account, while the community title may have encouraged them to contribute to the group account for collective gain. This may explain why both groups' members contributed similar amounts and expected similar contributions. Even though different titles may rely on different motivations for contribution, the first contributions were similar across the three different groups.

Although framing was a not significant predictor, I found that SVO was a very strong predictor in analyzing first contributions (e.g., Balliet et al. 2009; De Dreu and Van Lange 1995; Van Lange and Kuhlman 1994; Van Lange and Liebrand 1991). The results for SVO in this study confirm the previous findings as well. Therefore, I conclude that SVO predicted the variation in the first contribution. Prosocial participants were likely to give more money to the group account than individualistic participants.

Fairness Evaluation. I predicted that because of expectations for high contributions, the community group participants would express stronger feelings of injustice than the decision and Wall Street group participants. Since I did not observe any differentiation in first contributions across differently named conditions, I cannot claim that different frames created different expectations for contribution. This means that the community title did not create a high contribution expectation, the Wall Street title did not create a low contribution expectation, and the decision title did not create a neutral contribution expectation, and thus participants were disappointed very similarly across groups. As a result, their fairness evaluation cannot vary either.

However, their reasoning may be different. For instance, the community group may have expected everyone to contribute to the group account because it was a collective responsibility, while the Wall Street group may have expected everyone to contribute to the group account because it was the best strategy to gain points. The community group may have been upset because the other person did not contribute to the group account, and believed this was very irresponsible to their community, while the Wall Street group was upset because they believed the other person exploited him/her. Consequently, though they may have had different reasons, participants in the differently named groups expressed similar feelings of injustice.

In addition to the framing effect, the participant's fairness evaluation did not vary across different levels of the first contribution or different SVOs. However, the interaction of the first contribution and framing was statistically significant in predicting the participants' fairness evaluation.

Consequently, these analyses display that frames did not create low, high or neutral expectations for contribution as I assumed in this study, but the Wall Street frame led participants in the Wall Street group to care about how much money they gave to the group account in the first round and made their fairness evaluations accordingly. Participants in the Wall Street task evaluated the situation as very unfair if they gave a lot to the group account, while participants who gave a lot or little to the group account in the community and decision tasks evaluated the situation very similarly in terms of fairness. The significant interaction terms also confirm that the participants' fairness evaluations varied across different levels of giving in the Wall Street tasks. In other words, the Wall Street group evaluated fairness according to how much they gave to the group account.

Changes in the Second Contribution. I predicted that those who experienced stronger injustice would contribute less than others. Therefore, I assumed that fairness evaluation could predict changes in the second contribution. However, when I looked at other variables' effects, I found more variables affecting changes in the second contribution outside of fairness evaluation. For instance, SVO had an indirect effect (through the first contribution), and framing, the first contribution, and fairness evaluations had direct effects on changes in the second contribution. This indicates that those who were in the Wall Street task, those who gave more in the first round, and those who evaluated the situation as more unfair decreased their second contribution more than others.

I also analyzed the data partitioned by task name. I conclude that experiencing injustice led the Wall Street group to decrease their second contribution, but not participants in the decision and community groups. This indicates that fairness evaluation was a strong factor for the Wall Street group in predicting the difference between the first and second contributions to the group account. Consequently, though the Wall Street frame did not lead people to evaluate the situation as more unfair, the feelings of injustice in the Wall Street task led people to decrease their second contribution more than other groups. Since those who gave a lot to the group account in the Wall Street group evaluated the situation as more unfair, it is expected for them to decrease their second contribution more than others.

Tendency to Change Partner. I predicted that those who experience stronger injustice would be more interested in changing partners for future rounds. Also, I found that framing and fairness evaluation significantly predicted the participant's preference to change their partner. However, the data do not support the hypothesized directions of the

relationship. I assumed that the community group would be more willing to quit their relationship with their partners than those in the decision group, and that the decision group would be more willing to quit their relationship with their partners than those in the Wall Street group. The results from a multi-factor model reveal that participants in the Wall Street group were more willing to quit their relationship with their partners than participants in the decision and the community groups.

Additionally, the partitioned (by task name) data analyses show that those in the Wall Street group were more likely to change their partner, regardless of their fairness evaluations. However, those in the community and decision groups were more likely to decide whether or not to change their partner in accordance with their fairness evaluations.

Conclusion. Overall, fairness evaluation and subsequent behaviors are very complicated phenomena. The data from the vignette study show that framing did not lead participants to give more or less in the first round, but high-givers in the Wall Street frame were more sensitive and more responsive to injustice than other groups. That is, the Wall Street frame made participants focus on how much money they gave to the group account. Individuals in the Wall Street task evaluated the situation as very unfair if they gave a lot to the group account. Similarly, the community and decision frames encouraged participants to not focus on how much money they gave to the group account. Consequently, those giving a lot evaluated the situation very unfair in the Wall Street task while those giving a lot or too little in the community and decision tasks evaluated the situation very similarly in terms of fairness.

Although participants in differently named conditions expressed their fairness evaluation very similarly in general, their responses to injustice or justice were different

and they used different strategies to restore justice. Participants in the Wall Street task decreased their second contribution in response to their injustice evaluations, but their tendency to change partners was not a response to injustice evaluations. They wanted to change their partners regardless of their fairness evaluations. This indicates either they did not express their justice evaluations properly, or they did not think changing partner is a strong strategy to restore justice.

Similarly, people in the decision and community tasks were likely to change their partners to maintain justice. Those who evaluated the situation as more unfair in the community and decision groups were more willing to change partners than those who evaluated the situation as fair or unsure. However, they did not change their second contribution in response to injustice or justice. In this sense, fairness evaluation is not a very good indicator in predicting the tendency to change partners in the Wall Street group or predicting changes in the second contribution in the community and decision groups. Subsequently, I conclude that framing may have led participants to use different ways to maintain justice. That is, the Wall Street frame led participants to reduce their second contribution significantly, the decision and community frames led participants to quit the relationship with their partners.

In closing, the data from the vignette study support some of my hypotheses, but also disproved some of them. One possible explanation for unsupportive outcomes could be that the situation was hypothetical in the vignette study. When people know that situation is not real, their judgments for the imaginary situation diverge from their judgments for a real experience. Also, people may not have recognized the title framing when they were invited to complete a survey. Therefore, I ran a laboratory experiment

which reduces these problems significantly. Additionally, I refined my questionnaire and frames, separated the SVO survey from the experimental study in order to reduce a possible priming effect of SVO, and changed my study design.

CHAPTER 7

LABORATORY EXPERIMENT: METHODS

In this chapter, I present the experimental methods used in testing basic components of the theory presented in this dissertation. As explained below, the experiment aims to isolate the effects of framing, SVO, and the interaction partner's contribution level on predicting justice evaluations and subsequent behaviors. All methodological components for the laboratory experiment are detailed in this chapter.

Laboratory experiments allow us to create an abstract, simple, and artificial public good-based situation that tests simple theoretical mechanisms. It may be impossible to study very complicated real-world phenomena scientifically, because it is hard to eliminate conditions which we cannot measure that may impact the results. However, in the laboratory, we can eliminate these unwanted conditions and make salient the conditions we intend to measure to understand their causal effects in the hypothesized phenomena. Although the aim of the experimental test is not to replicate real-world situations but to test a theory, a testable theory-driven argument can be useful for understanding real-world situations (Thye 2007; Webster Jr. and Kervin 1971; Zelditch Jr. 1969).

A theory is only applicable in its scope domain. Thus, it is not possible to generalize experimental results in any science. However, more careful empirical work can support the theory and broaden its scope conditions. If a theory is supported by an experimental test, then it is very reasonable to use other methodologies to gain accuracy and generalizability.

The experiment in this dissertation is a 2 x 2 x 2 factorial design including two levels of comparisons for contribution (own to a high-standard, own to a low-standard), two different SVO characteristics (individualistic, prosocial) crossed by the interaction partner's contribution level (low, high). As detailed below, the experimental study examines the effects of these factors and their interaction effects on the participants' justice evaluations, changes in their second contribution, tendency to change their partner for future rounds, and willingness to share a group bonus with their partner.

7.1 VARIABLES

In this section, variables are introduced and how they are operationalized and measured empirically are explained in details. As explained below, the experiment inspects these variables in a public good situation created in a laboratory setting.

Independent Variables and Manipulations

As shown in Table 7.1 below, this design includes two social frames created through different titles (The Stock Market Study, The Community Study) crossed by SVO (individualistic, prosocial) and the interaction partner's contribution level (high, low).

Table 7.1: Experimental Design

CONDITION (# of Participants)	NAME OF STUDY	SVO	PARTNER CONTRIBUTES…
1 (33)	Stock Market	Individualistic	Low
2 (23)	Stock Market	Individualistic	High
3 (33)	Stock Market	Prosocial	Low
4 (23)	Stock Market	Prosocial	High
5 (33)	Community	Individualistic	Low
6 (23)	Community	Individualistic	High
7 (33)	Community	Prosocial	Low
8 (23)	Community	Prosocial	High

The framing variable in this study was operationalized through different titles for the same experimental procedure. As discussed before, previous research shows a significant effect based merely on the study's title, such as "The Community Game" vs. "The Stock Market Game" (Batson and Moran 1999; Bernold et al. 2014; Eiser and Bhavnani 1974; Ellingsen et al. 2012; Kay and Ross 2003; Liberman et al. 2004). I used the community frame in order to create a high standard of contribution and the stock market frame for a low standard of contribution.

Although I used title framing to operationalize the framing variable in the vignette study, some changes were made in the experimental study. Most of the contrast tests in the vignette study were significant for the comparison between the community group and the Wall Street group but not the decision group. Building on the vignette study outcomes, I omitted the decision group from my design and used the community and stock market titles for the experimental study. Also, the Wall Street name was changed to the stock market due to Wall Street's notoriety resulting from the recent activities against Wall Street in the USA.

The second variable was SVO in this study. Participants were required to complete a standardized SVO scale right after they signed up for the study[13]. Since the 1960's, a standard SVO inventory has been developed to classify each participant as a prosocial or individualistic (Balliet et al. 2009; Van Lange 1999; Messick and McClintock 1968; Simpson 2004; Simpson and Willer 2008). The measure of SVO presented participants with a series of nine decomposed games. Each game included three different distributions of points for self and another unknown person. The results were classified as prosocial

[13] The complete scale and instructions are provided in Appendix C.

(who maximizes the outcomes for both self and others) or as individualistic (who maximizes the outcomes for only self). Based on previous studies, I classified participants as prosocial or individualistic only if they made at least six out of nine choices consistent with a given SVO. Otherwise, they were classified as undetermined (Van Lange 1999; Simpson and Willer 2008).

The third variable was the interaction partner's contribution level. Participants in each differently framed condition were divided equally and assigned to interact with either a high or low contributing partner. In order to demonstrate differentiations in high and low situations, the simulated partner contributed less or more than participants. To create low situations (Condition 1, 3, 5, and 7 in Table 7.1), the simulated partner contributed 10 points less than the participant; to create high situations (Condition 2, 4, 6, and 8 in Table 7.1), the simulated partner contributed 10 points more than the participant. For instance, if a participant contributed 10 points, the simulated partner contributed 0 points (10-10=0) in low conditions and 20 points (10+10=20) in high conditions. Additionally, if a participant in the low condition contributed the minimum (0 points) or a participant in the high condition contributed the maximum (20 points), then the simulated partner contributed 0 and 20 points (i.e. the same amount with the participant) respectively, and these conditions became equal conditions for this study.

Dependent Variables

The first dependent variable in this study was the participants' initial contributions to the group account. Each participant was requested to contribute any amount of points (from 0 to 20) from their personal account to the group account. This item measured

whether framing and/or SVO affected participants' unconditional cooperation (i.e. first contribution) to the group account.

The second dependent variable was the participants' justice evaluations. After learning how much their partner (i.e. Other) gave to the group account and sharing the group points evenly with their partner, participants answered 4 questions measuring their fairness judgments. The first item measured participants' evaluations for their own contribution to the group account. The second item measured participants' evaluations for their partner's contribution. For both items, participants expressed their evaluations through a 7-point Likert scale. Both participants' own contribution and their partner's contribution items were scaled as 1= much too low, 2= too low, 3= somewhat too low, 4= about right, 5= somewhat too high, 6= too high, and 7= much too high. The third item measured the participants' fairness evaluation for their own contribution, while the fourth item measured their fairness evaluation for their partner's contribution. Both items were scaled as 1= very unfair, 2= unfair, 3= somewhat unfair, and 4= fair.

Third, I measured three means to restore justice: changing the subsequent contribution, sharing the group bonus with the partner, and switching partners for future rounds. To measure the first justice-restoring attempt, I measured how participants altered their subsequent contribution in the second round. Participants were asked to decide how much of their 20 points they would like to give to the group account for the second round (0 to 20 points). In essence, I took the difference between the first contribution and the second contribution. Next, I measured how many points out of 10 points (i.e., group bonus) participants shared with their partners. Each participant was told that s/he had been selected to distribute a group bonus. S/he was free to share any amount with his/her partner or keep

all points for his/her personal account. Finally, I measured the participants' preference to change their partners. Participants were asked their preference to work with a different partner for future rounds (7-point Likert scale). Their preference was scaled from 1= no preference, 4= moderate preference, and 7= strong preference for switching partner.

In addition to these primary dependent variables, I tested the participants' motivation to contribute to the group account (i.e. givers), motivations to keep resources for their personal account (i.e. keepers), and the first round's influence on the second contribution. Right after they submitted their first contribution, they were asked about their motivations to contribute as much as they could to the group account and motivations to keep as much as possible in their personal account. Both items were scaled from 1= not at all motivated, 4= moderately motivated, and 7= very motivated. Finally, participants were given a 7-point Likert scale to express their judgments about how influential their first-round experience on their second contribution was. The scale was ranged from 1= not at all influential, 4= moderately influential, and 7= strongly influential.

Control Variables

Previous research has shown that age, race (Young 1991), gender (Cook and Hegtvedt 1983; Major, Bylsma, and Cozzarelli 1989), and education level (Scarpello and Jones 1996) may influence perceptions of justice. In this experiment, participants' age, sex, race, education level, and major were recorded to test for effects of demographic variables.

7.2 EXPERIMENT

General Conditions

The current study was conducted in the University of South Carolina's Laboratory for Sociological Research, which is located in the Sloan College Sociology Department.

The lab includes 16 computer-equipped private rooms for individual subjects and a web-based subject pool management system (SONA) providing randomly selected participants for each of the eight conditions.

The hypotheses were tested by using a computer program generated in Macromedia's Authorware to simulate my hypothesized conditions. The interactions took place over a network and the program provided instructions for participants. Participants knew that the experiment was computer mediated, and that they were not going to not see their partners during the study or meet their partners after the study. Although participants were led to believe that they interacted with another person, the partner was a computer-simulated person whose behaviors were determined by the computer program in accordance with the theoretical conditions.

In each condition, the rules and payoff structures of public good settings were the same, but the title of the study was altered to create a subtle framing manipulation. Additionally, I also created different headings with visuals illustrating a stock market or community (See Figure 7.1 and 7.2 below) to reinforce the framing manipulation.

First, we would like to ask some **background questions** about you

Continue

Figure 7.1: Heading Displayed for the Stock Market Study

Figure 7.2: Heading Displayed for the Community Study

In general, participants in social dilemma settings are expected to make comparisons of their own contributions to the other members' contributions. When more information is created through framing processes (e.g. socially constructed titles), then group members are expected to use this information in making social comparisons as well. If the same public good interaction is called the community study, collectiveness would be emphasized; therefore, the standard for contribution would be high for this condition. If it is called the stock market study, personal profiting would be emphasized; thus, the standard for contribution would be low for this condition.

Each testing session was identical in terms of rules and protocols. Each session took approximately 25 minutes, and participants were granted course credit and paid through raffle tickets for their participation.

Experimental Procedure[14] ***and Manipulations***

In the SONA system this study was introduced as a "Survey Study" consisting of two parts: a brief online survey (SVO survey) and the actual laboratory study. Participants were required to complete a social value orientation scale (part one) to be able to sign up

[14] All protocols and supplements for the experiment are provided in Appendix section.

for the actual laboratory study (part two). They were told that after they completed both parts, they would be given an opportunity to win a $50 Amazon.com gift card and 2 extra credits in applicable courses for participation.

After completing part one, participants were classified as prosocial, individualistic, or undetermined. Then, prosocial and individualistic participants were invited to participate in the part two of the study. They were evenly distributed across conditions, and half were told that they were assigned to participate in a community study, while the other half were told that they were assigned to participate in a stock market study. Participants were told that they should remember and tell the research assistant in the lab which study they were going to participate in order to make sure they recognized the name of the study.

Upon arrival at the lab, the researcher asked each participant which study s/he was participating in and checked if it was correct. Each participant was escorted by the researcher to a small room with a desk, keyboard, and computer monitor. Before initiating the program, each participant was asked to read and sign an informed consent form (See Appendix D). After collecting participants' paperwork, the researcher gave them a brief explanation of the rules and started the program on the participant's computer[15] (See Appendix E). First, participants were asked to complete a short questionnaire revealing their demographic characteristics (age, race, gender, educational information, and major). Second, the computer administered a brief introduction to the study and informed participants about the rules and conditions for completing a joint decision-making task. Some examples were provided to illustrate how the public goods game and pay-off structure worked. Upon completion, participants were asked to complete a series of

[15] The complete program script for experiment is provided in Appendix E.

questions to check their understanding of the study's instructions. The correct answers were provided as feedback (i.e. correct answer) on the screen, which were displayed each time the participant gave a wrong answer. Each question was repeated until the participant answered it correctly. Instructions were the same for each of the eight experimental conditions.

Participants were informed that they would interact with randomly chosen partners, and they would be asked questions to evaluate their experiences. Even though participants were led to believe that they may have worked with multiple participants and many rounds, in reality, participants made only two decision-makings and interacted with a computer-simulated partner whose behaviors were predetermined in accordance with the experimental conditions.

In the instructions, participants were told that each group member would be given a personal fund consisting of 20 points, which could be contributed to the group account or kept for their personal account. Each point contributed to the group account was multiplied by 1.5 and would be shared equally between participants and their partner. Participants were told that compensation for the study was based on the amount of points they would have in their account at the end of the study. Those who gained more points would be given more raffle tickets and thus more chances to win a $50 Amazon.com gift card. To increase their chances of winning a prize, it was thus wise for them to win as many raffle tickets as possible (for a similar procedure, see Van Vugt et al. 2004; Van Vugt and De Cremer 1999).

This structure satisfies public goods dilemma situations because participants know that contributing to the group account is costly and risky, but necessary to gain more points.

Also, not contributing to the group account, but sharing the group account with the partner who is the one contributing to the group pool is the most beneficial choice. In other words, if a participant chooses to keep her/his initial endowment (20 points) and his/her partner contributes all of his/her endowment, which will be multiplied (20*1.5=30 points) and shared equally, then the participant can earn 35 points (20 form initial endowment, and 15 from the group account) while his/her partner only receives 15 points (0 from initial endowment and 15 from group account) as total.

At the beginning of the first contribution round, participants were asked how much s/he wanted to contribute to the group account. Participants were led to believe that the partner was making his/her decision at the same time. When participants were waiting for the other person's decision, they answered some questions measuring their motivations in making the first contribution. Then, s/he was told how much the partner contributed. The partner's behaviors were predetermined through a computer program. If a participant assigned in a low condition (condition 1, 3, 5, or 7), s/he was told that the partner contributed 10 points less than what the participant contributed to the group account. For instance, if a participant contributed 12 points, s/he was told the partner contributed 2 points, and the total contributed points were 14. After multiplying by 1.5, it became 21 and each group member received 11 points from the group account, which made the participant's total 19 points and the partner's total 29 points. If a participant was assigned in a high condition (condition 2, 4, 6, or 8), s/he was told that the partner contributed 10 more points than his/her contribution. For instance, if a participant contributed 5 points, s/he was told the partner contributed 15 points, and the total contributed points were 20. After multiplying by 1.5, it became 30 and each group member received 15 points from

the group account, which made the participant's total 30 points and the partner's total 20 points.

Additionally, if participants gave less than 10, e.g. 5 points, and the condition was a low condition, the partner's contribution was adjusted to "0" instead of -5. Also, if participants gave more than 10, e.g. 15 points, and the condition was a high condition, the partner's contribution was adjusted to "20" instead of 25 points. If participants gave "0" in a low condition or "20" in a high condition, the partner gave the same amount as the participant instead of -10 or 30 points. I treated those situations as equal conditions.

After equally sharing the group points, participants were asked some questions measuring their fairness evaluation for their interaction. Then, they started the second round and decided how much of their personal endowment they would like to contribute. While waiting for their partner's decision, they were asked some more questions measuring their attempts to restore justice. First, participants were asked how much they were influenced by their first round experience. Second, their preference to change their partner for future rounds was asked as an indicator for quitting the relationship. Participants were also told that s/he was randomly chosen to distribute an additional 10 points as a group bonus, and s/he was free to keep the bonus for his/her personal account or share any amount (from 0 to 10 points) with the partner. S/he was also told that the partner would be informed about the bonus, if s/he decided to share only some of the bonus with the partner.

At the end of the experiment, participants were asked a series of questions in order to check suspicions with respect to the deceptions and the manipulations (e.g. whether or not they perceived their partner's behaviors as intended, they believed that their partner and the study were real). On the final screen, participants were told that they would be

emailed a debriefing form explaining the details and real goals of the study after the experimental sessions were completed. They were also requested to not discuss the study with those who had not yet participated. Each participant was thanked and escorted from the lab.

Debriefing and Compensation

After the experimental sessions were completed, each participant was sent a debriefing email explaining the study's real goals and preliminary results (See Appendix F). Also, any further questions about the study were replied via email.

Compensation for this study was an opportunity to win a $50.00 Amazon.com gift card and extra credit. After completing the experimental session, each participant was given 2 course credits for their participation regardless of their performance during the study. Also, participants were told that their effort (i.e. the points they gained) during the experiment could not be paid out directly, but rather the points would be converted into raffle tickets for an attractive monetary prize ($50 Amazon.com gift card) that would be held after the experimental sessions were completed. Participants were told that those who got more points during the experiment would have more chance to gain the prize, but in reality, the winners were chosen randomly among participants and each participant was given the same chance to win the prize. Those who were randomly chosen as gift card winners were invited to the Sociology Department Main Office to receive their prize.

7.3 HYPOTHESES

I operationalized my theoretical arguments through testable hypotheses. These hypotheses were tested through the data collected from a laboratory experiment, which was

explained in detail in the previous sections. In this section, I list each dependent variable as a subsection and list related hypotheses.

First Contribution

My theory predicts that the community title creates higher expectation (e.g. 15 points) while the stock market title creates lower expectation (e.g. 5 points) for contribution to the group account. The personal fund was 20 points, and participants were free to contribute any amount from 0 to 20 to the group account. Since expectation for contribution is higher in the community study, I assume that the first contribution amount will be higher in the community study compared to the stock market study. Therefore, I propose the following hypothesis.

H.1.1: Participants in the community study will give more points to the group account than participants in the stock market study.

Relying on previous research, I also predict that SVO will have effects on first contribution. Since prosocial participants are more likely to expect cooperation from others (De Cremer and Van Lange 2001; Van Lange 1992), they will give more points than individualistic participants. Thus,

H.1.2: Prosocial participants will give more points to the group account than individualistic participants.

In addition to the main effects of framing and SVO, I also expect to find interaction effects. I assume that prosocial participants in the community study will be the most cooperative while individualistic participants in the stock market will be the least cooperative in giving personal points to the group account. Therefore, I formalize the following hypotheses.

H.1.3.a: Prosocial participants in the community study will give the highest points to the group account.

H.1.3.b: Individualistic participants in the stock market study will give the lowest points to the group account.

Fairness Evaluation

The second dependent variable in this study is the participants' fairness evaluation. First, I assume that participants who interact with a low contributor will be likely to evaluate the situation as more unjust compared to participants who interact with a high or equal contributor. Thus,

H.2.1: Participants will evaluate their interaction with a low-contributor partner as more unjust compared to a high- or an equal-contributor partner.

Second, I assume that the community title creates a higher expectation (e.g. 15 points) and the stock market title creates a lower expectation (e.g. 5 points) for contribution to the group account. Thus, I assume that fairness evaluations will differ across groups. I expect that participants who have a high expectation for contribution (e.g. community group) will be more disappointed with others' low contribution. Similarly, I expect that participants who have a high expectation for contribution (e.g. the community group) will evaluate others' high contribution as more fair. In other words, participants in the community group (relative to the stock market group) are likely to experience stronger injustice when encounter with a low-contributor, but justify a high contribution due to a high expectation for contribution to the group account. Thus,

H.2.2.a: Participants in the community study will evaluate their interaction with a low-contributor partner as more unjust compared to participants in the stock market study.

H.2.2.b: Participants in the community study will evaluate their interaction with a high-contributor partner as more just compared to participants in the stock market study.

Since SVO has effects on first contribution, I also predict that SVO has effects on fairness evaluation as well. Since prosocial participants are more likely to expect cooperation from others, they will be more disappointed with others' low contribution. Similarly, I expect that prosocial participants will evaluate others' high contribution as more fair. Thus,

H.2.3. a: Prosocial participants will evaluate their interaction with a low-contributor partner as more unjust compared to individualistic participants.

H.2.3. b: Prosocial participants will evaluate their interaction with a high-contributor partner as more just compared to individualistic participants.

Changes in the Second Contribution

The third dependent variable I analyzed is the changes in the second contribution relative to the first contribution. When participants experience justice or injustice, I assume that their second contribution will be a response to their justice or injustice experience. My theory claims that fairness evaluation can predict justice-restoring attempts such as difference in the second contribution. Therefore,

H.3.1.a: Participants who experience negative injustice will give fewer points in the second round compared to those who experience positive injustice and justice.

H.3.1.b: Participants who experience positive injustice will give more points in the second round compared to those who experience negative injustice and justice.

I also expected that the community group experience stronger injustice than the stock market group when interacting with a low-contributor partner. Accordingly, they will

decrease their second contribution more than the stock market group. Thus, in a low condition:

H.3.2.a: The community group will reduce points given in the second round more as compared to the stock market group.

Similarly, in a high condition, I expect that the community group will experience less guilt (i.e. positive injustice) than the stock market group when interacting with a high-contributor partner. Consequently, they will increase their second contribution less than the stock market group. Therefore, in a high condition:

H.3.2.b: The community group will increase points given in the second round less as compared to the stock market group.

Relying on previous research, I also predict that SVO has effects on the decrease amount in the second round. Since prosocial participants expect high contributions from others, they will be angrier to a low-contributor partner and less guilty for a high-contributor partner. However, prosocial participants are more forgiving of an unfair partner. This may indicate that prosocial participants may be more willing to forgive their unfair partner and re-initiate cooperative behaviors (Balliet et al. 2009; Smeesters et al. 2003). Thus, in a low condition,

H.3.3.a: Individualistic participants will reduce points given in the second round more as compared to prosocial participants.

Previous research shows that individualistic participants are more likely to exploit cooperative partners than prosocial participants (Smeesters et al. 2003). Therefore, in a high condition,

H.3.3.b: Individualistic participants will increase points given in the second round less as compared to prosocial participants.

Tendency to Change Partner

The fourth dependent variable is another means to restore justice: the participants' tendency to change their partners for future rounds. First, I assume that willingness to change partner is another response to fairness evaluation. Therefore, I formalize the following hypotheses:

H.4.1.a: Participants who experience negative injustice will be more willing to change their partner compared to those who experience positive injustice and justice.

H.4.1.b: Participants who experience positive injustice will be less willing to change their partner compared to those who experience negative injustice and justice.

I also expect the community group will experience stronger injustice than the stock market group in a negatively unjust situation. Consequently, they will be more willing to work with another partner for future rounds than the stock market group. Thus, in a low condition:

H.4.2.a: The tendency to change a low-contributor partner will be greater in the community group compared to the stock market group.

Similarly, in a high condition:

H.4.2.b: The tendency to change a high-contributor partner will be lower in the community group compared to the stock market group.

Additionally, I also predict that SVO will have effects on the tendency for changing partner. Thus, in a low condition:

H.4.3.a: The tendency to change a low-contributor partner will be greater for individualistic participants compared to prosocial participants.

However, in a high contribution situation:

H.4.3.b: The tendency to change a high-contributor partner will be lower for individualistic participants compared to prosocial participants.

Willingness to Share Group Bonus

The fifth dependent variable is another means to restore justice: how much of the group bonus participants shared with their partner. First, I assume that giving more or less bonus points to the partner is another response to the fairness evaluation. Therefore, I formalize the following hypotheses:

H.5.1.a: Participants who experience negative injustice will give fewer points to the partner compared to those who experience positive injustice and justice.

H.5.1.b: Participants who experience positive injustice will give more points to the partner compared to those who experience negative injustice and justice.

I also expect the community group experience stronger injustice than the stock market group in negatively unjust situations. Consequently, they will give fewer points to the partner. Thus, in a low condition:

H.5.2.a: Participants in the community group will share fewer points with a low-contributor partner than participants in the stock market group.

Similarly, I expect the community group experience less positive injustice due high expectation. Therefore, the community group will give fewer points to the partner and in a high condition:

H.5.2.b: Participants in the community group will share fewer points with a high-contributor partner than participants in the stock market group.

Additionally, I also predict that SVO will have effects on the sharing bonus points with the partner. Thus, in a low condition,

H.5.3.a: Individualistic participants will share fewer points with a low-contributor partner than prosocial participants.

Similarly, in a high condition,

H.5.3.b: Individualistic participants will share fewer points with a high-contributor partner than prosocial participants.

CHAPTER 8

LABORATORY EXPERIMENT: ANALYSES

To organize my analyses for the experimental data, I created a section for each dependent variable and a subsection for each independent variable, interaction term, and additional analyses. In each section, I provide information about my data and report my findings. Finally, I discuss my findings in the last section.

8.1. DATA AND PARTICIPANTS

Undergraduates at the University of South Carolina were asked to participate in this study for raffle tickets to gain a $50 Amazon.com gift card and to earn extra credit in applicable courses. I contacted volunteers through a web-based SONA system to schedule experimental sessions in the lab. To control for age and cohort effects, only traditional undergraduate students were contacted.

Of these cases, 161 of 224 participants were female (approximately 70%) while 63 were male. I code female as “1” and male as “0”. Of these cases, 175 of 224 participants are white. In the experiment, participants were asked about different categories of race. White participants made up about 80% of the total; therefore, I recode them as white (coded as “1”) and non-white (coded as “0”). Also, all the participants are undergraduate students, and 96% of 224 participants are between the ages of 18-23.

Before completing the experiment, I equalized the number of prosocial and individualistic participants between the stock market study and community study. In the primary experiment, I separated the simulated other's contribution as high or low and assigned 33 participants to each low condition (Conditions 1, 3, 5, and 7 in Table 7-1 in the previous chapter) and 23 participants to each high condition (Conditions 2, 4, 6, and 8 in Table 7-1 in the previous chapter) in order to obtain sufficient statistical power[16]. Although controlling the sample group in this way partially violates the random assignment principle, it decreases within-condition measurement errors and increases between-condition differences. Thus, statistical power can be increased (Webster Jr. and Kervin 1971). The distribution of participants in accordance with task name and SVO variables is introduced in Table 7-1 in the previous chapter.

A total of 249 participants were recruited for this study, but 224 cases were used in the analysis. 13 participants were excluded from the study due to suspicions about the experimental deceptions. 10 participants whose SVO is classified as undetermined were also excluded from the study. Additionally, the last two participants were excluded from the data to keep the number of participants equal across conditions. The exclusion rate was about 10% of the cases.

I randomly assigned 132 (33 participant x 4 conditions = 132) participants to low conditions, but 10 participants contributed the lowest possible amount, "0" points, and thus were considered as equal conditions. I randomly assigned 92 (23 participants x 4 conditions = 92) participants to high conditions, but 28 participants contributed the highest possible

[16] Although our program randomly assigned each participant to either low and high conditions, one of the low condition cells had a very larger number of people (33) while all other cells were around 20. Therefore, I adjusted the number of participants accordingly.

amount, “20” points, and thus were considered as equal conditions. This means that 122 participants (about 55%) interacted with a low-contributor partner, 64 participants (about 29%) interacted with a high-contributor partner, and 38 participants (about 16%) interacted with an equal-contributor partner in the experiment.

The collected data for each dependent variable were analyzed in SPSS. Before conducting statistical tests, I checked if the data maintained the required assumptions of normality, homoscedasticity, and multicollinearity for linear regression, ANOVA, and ANCOVA tests.

8.2 FIRST CONTRIBUTION

First, I measured how many points (out of their 20 points) participants contributed to the group account. The overall average first contribution to the group account was 11.85 (SD= 6.21, N=224).

Data

According to the Kolmogorov-Smirnov and Shapiro-Wilk tests, the data are slightly non-normal. However, the skewness is = -.42 and kurtosis is = -2.97. Therefore, I conclude that my data display no skewness but some kurtosis issues. This means the distribution is symmetric but slightly flat (i.e. platycurtic). The data also satisfied the assumption of homoscedasticity in both the Breusch-Pagan [LM= 1.037, p = .596] and Konker [LM= 1.806, p= .405] tests. Finally, the data do not violate the assumption of multicollinearity. Therefore, I conducted parametric tests to analyze my data.

Findings

Framing Effect. The mean contributed points in the first round was 11.60 (SD = 6.36) for the stock market group and 12.10 (SD = 6.07) for the community group. I

conducted a one-way between-subject ANOVA to compare the effect of study name (stock market study, community study coded as "0" and "1" respectively) on the first contribution variable. There was not a significant effect for study name [F (1, 222) = .362, p = .548]. The findings do not support hypothesis 1.1: "*Participants in the community study will give more points to the group account than participants in the stock market study."*

SVO Effect. I ran a one-way between-subject ANOVA to check whether or not SVO (individualistic, prosocial coded as "0 and "1" respectively) had an effect on the first contribution. The test result was highly significant [F (1, 222) = 9.997, p = .002]. This means that SVO had a significant association with the first contribution. The mean contributed points was 10.56 (SD = 5.83) for individualistic participants and 13.13 (SD = 6.33) for prosocial participants. These findings clearly support hypothesis 1.2: *"Prosocial participants will give more points to the group account than individualistic participants."* This indicates that prosocial participants contributed more than individualistic participants in the first round.

Framing-SVO Interaction Effect. I checked if there is an interaction effect between framing and SVO when predicting the first contribution variable. I could not find any interaction effect for study name and SVO. The two-factorial ANOVA test results are summarized in Table 8-1 below.

Table 8.1: Two-Factorial ANOVA Test Results for the First Contribution

	F	***P-value***
Independent Variables:		
Study Name	.375	.541
SVO	9.924	.002
*Study Name*SVO*	.000	.983

* = p ≤ .10, ** = p ≤ .05, *** = p ≤ .01, **** = p ≤ .001.

Prosocial participants in the community study gave the highest points (M = 13.39, SD = 6.21) and individualistic participants in the stock market gave the lowest points (M = 10.32, SD = 6.00). However, a model including main effects of the SVO and study name variables and their interaction (See Table 8-1) shows that only the main effect of SVO can predict the first contribution. Since the interaction was not significant, I conclude that the data do not support hypothesis 1.3.a: "*Prosocial participants in the community study will give the highest points to the group account"* and hypothesis 1.3.b*: "Individualistic participants in the stock market study will give the lowest points to the group account."*

I also generated Figure 8-1 to visualize the estimated marginal means of the first contribution by the SVO and framing variables. The figure clarifies the SVO's main effect on the first contribution as well.

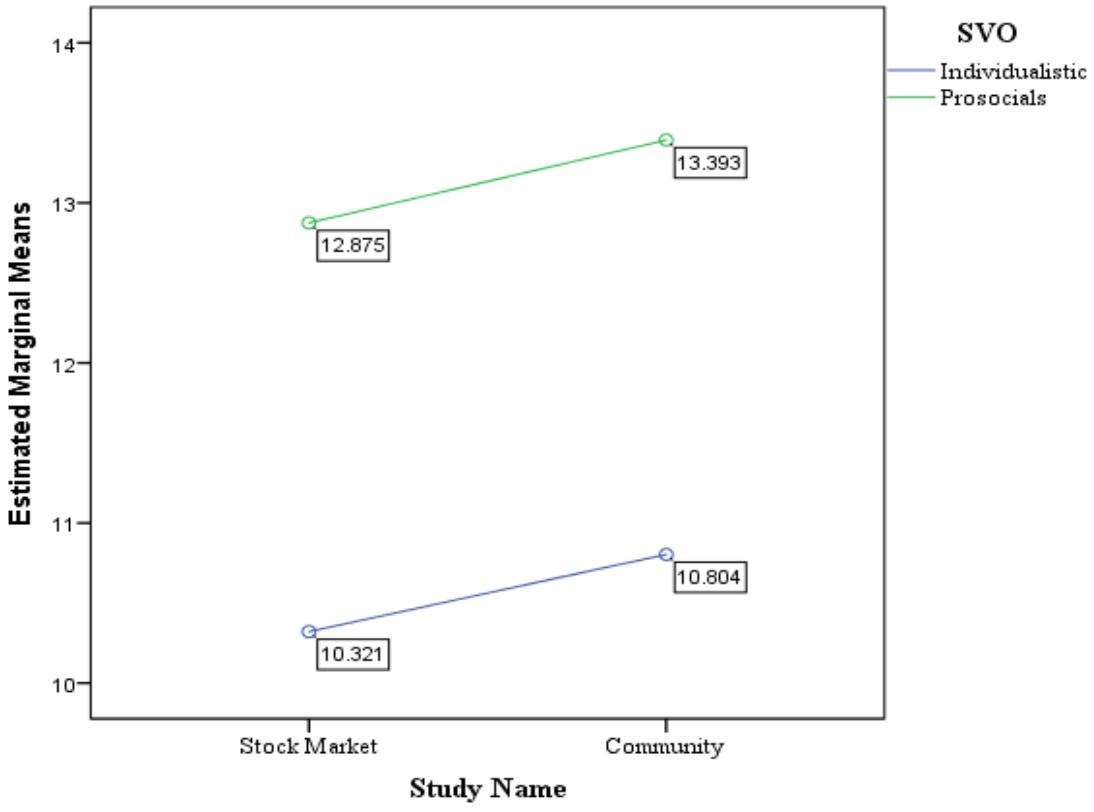

Figure 8.1: Estimated Marginal Means of the First Contribution

Partitioned Data analysis. I also partitioned the data by study names, and I checked if the effect of SVO was different across differently named studies. I found that SVO was a statistically significant factor in predicting the first contribution in the stock market [F (1, 110) = 4.664, p = .033] and in the community [F (1, 110) = 5.292, p = .023] groups. This means that prosocial participants were likely to give more points to the group account than individualistic participants in both studies. Overall results indicate that framing was not effective, but SVO was a strong factor in predicting the first contribution.

Motivation Effect. After completing the first round, participants were asked whether they were motivated to give as many of their personal points as they could to the group account or keep their points in their personal account (both items were 7-point Likert scales). I reverse-coded the item measuring the participants' motivation to keep the points in their personal account. Then, I standardized the items and combined them into a scale measure of level of motivation. A linear regression analysis was highly significant [t = 22.475, p < .001], showing that participants who reported themselves as highly motivated to contribute to the group account contributed more points than others in the first round.

Then, I cheeked if the motivation variable could be predicted by the study name or SVO variables. In other words, I examined if participants assigned to the community study were likely to be motivated to give more points compared to the stock market study, and if prosocial participants were likely to be motivated to give more points compared to individualistic participants. A linear regression test for study name was insignificant [t = .238, p = .812], but highly significant for SVO [t = 4.683, p < .001]. The results imply that prosocial participants were more likely to claim that they were motivated to give more

points to the group account than individualistic participants, which is consistent with their first contribution behaviors as well.

As can be recognized from the previous analyses, the SVO and motivation variables had significant effects on the first contribution separately. Also, SVO had effects on the motivation variable as well. When I modeled SVO and motivation as my predictors in a multiple regression model, the effect of SVO on the first contribution disappeared. This indicates a clear mediation model, i.e. indirect effect (Baron and Kenny 1986). Therefore, I ran a mediation analysis and found that SVO has an indirect effect (through the motivation) on the first contribution (See Figure 8-2 below for a detailed model).

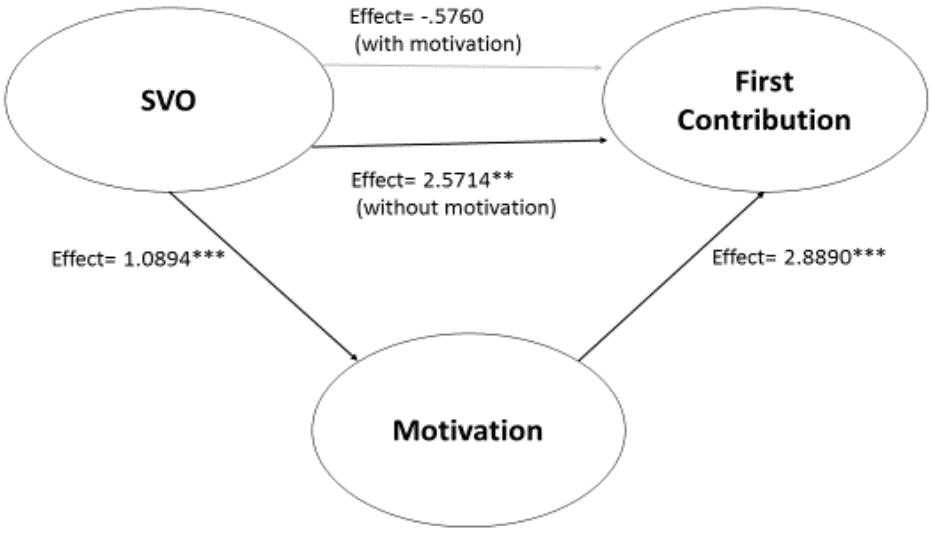

Figure 8.2: Mediating Effect of Motivation on SVO in Predicting the First Contribution

Mediation analysis shows that when the motivation was accounted for in the model, SVO lost its effect on the first contribution. The indirect effect size was 3.15 with a 95% CI between 1.86 and 4.46. CI which does not include "0" indicates that an indirect effect

exists and is different from "0". Also, the Sobel test shows that the indirect effect was significant (B= 4.59, p <.001)[17].

All analyses show that the relationship between SVO and the first contribution is complicated. In the experiment, SVO was mediated by the motivation variable; thus, SVO's effect on the first contribution was indirect. Overall, the SVO and motivation variables were strong factors in predicting the first contribution to the group account, but not the framing variable.

8.3 FAIRNESS EVALUATION

The second dependent variable is the participant's fairness evaluation. I used 4 items to measure fairness evaluation. I checked if these items measuring fairness were reliable, and Cronbach's Alpha was .731. I found that fairness evaluation for self was not significantly correlated with other items and when I omitted this item, the reliability results increased (Cronbach's Alpha= .806). Therefore, I used these three items' average as a new fairness variable[18].

Data

The data were checked to see if the data upheld the required assumptions. The data are slightly non-normal in accordance with the Kolmogorov-Smirnov and Shapiro-Wilk tests. However, the skewness is = -.52 and kurtosis is = -4.02. Therefore, I conclude that my data display no skewness, but some kurtosis issues. This means that the distribution is almost symmetric, but flat (i.e., playtykurtic). Also, the data do not show any

[17] Although in this mediation analysis the sequence is SVO to Motivation and then to first contribution, in the experiment, I measured SVO first, then first contribution and finally motivation.

[18] If people were asked to evaluate their own behavior in terms of fairness when they overly benefitted from an interaction, they tended to avoid to judge themselves as unfair. Instead, they said "I was fair, but the other person gave unfairly (i.e. too much) to the group account." It is possible that self-serving bias led people to judge their own fairness unreliably.

multicollinearity issue. The data satisfied the homoscedasticity assumption in the Konker [LM= 9.042, p= .107] test, but violated the homoscedasticity assumption in the Breusch-Pagan [LM= 12.263, p= .031] test. Consequently, I conducted parametric tests to analyze my data.

Findings

Partner's Contribution Effect. I classified the interaction partner as a high-, low-, or equal-contributor partner in accordance with the partner's contribution level and dummy-coded the partner's contribution situations. I ran a linear regression analysis to test the partner's contribution effects on fairness evaluation when statistically controlling for the participant's first contribution. The results from the linear regression were highly significant for the equal- and high-contributor partner conditions when the low-contributor partner was the reference category [$t_{(high)} = 25.509$ and $t_{(equal)} = 13.273$, at the $p < .001$ level].

I also controlled for the participants' initial contribution (i.e., the first contribution) and conducted an ANCOVA test [$F(2, 221) = 352.551$, $p < .001$] which was highly significant as well. The ANCOVA test result indicates that participants evaluated a low-contributor partner as more unjust compared to a high- or an equal-contributor partner when their own initial contribution was held constant. When perfect fairness equals "4", the means of fairness evaluation were 2.18 (SD= .78) for a low-contributor partner, 3.79 (SD= .44) for an equal-contributor partner, and 4.53 (SD= .45) for a high-contributor partner. The Bonferroni and LSD post-hoc tests were highly significant at the $p < .001$ level for all comparisons. This means that hypothesis 2.1: "*Participants will evaluate their*

interaction with a low-contributor partner as more unjust compared to a high- or an equal-contributor partner" is strongly supported by the data.

Framing Effect. I checked whether framing predicted fairness evaluation when statistically controlling for the participants' own and their partner's contributions. A one-way ANCOVA test was marginally significant for study name when the participants' and their partner's initial contributions were statistically controlled [F (1, 222) = 3.812, p = .052]. Participants in the community study evaluated the situation as more unfair than participants in the stock market study when the participants' own and their partner's contributions were held constant.

SVO Effect. I checked whether SVO predicted fairness evaluation when statistically controlling for the participants' own and their partner's contributions. A one-way ANCOVA test was insignificant for SVO when the participants' and their partner's first contribution variables were statistically controlled [F (1, 222) = .016, p = .901]. Individualistic participants did not evaluate the situation as more unfair than prosocial participants when the participants' own and their partner's contributions were held constant.

First Contribution Effect. From the two ANCOVA tests above (for SVO and framing), I found that the participants' and their partner's first contribution variables were highly significant. Therefore, I investigated whether or not the participants' own contribution predicted fairness evaluation when the partner's contribution was held constant. In other words, I wondered if people giving a lot to the group account were angrier than the low-givers. The result from a linear regression analysis reveals that the participants' first contribution was highly significant when their partner's first contribution

was held constant [t = -10.920, p < .001]. This means that the participants' fairness judgment relied on how much they contributed to the group account if their partner's contribution was statistically controlled.

I also grouped participants as low-givers if they contributed less than 10 points (out of 20 points), as moderate-givers if they contributed 10 points, and as high-givers if they contributed more than 10 points to the group account in the first round. I used these groups for further analyses below.

Motivation Effect. I also investigated whether or not the participants' motivation to contribute influenced their fairness evaluation. The result from a linear regression analysis reveals that the motivation variable was insignificant when the participants' and their partner's first contribution variables were statistically controlled [t = .204, p=.839]. This means that the participants' fairness judgments did not rely on how much they were motivated to contribute to the group account when the participants' own and their partner's contributions were statistically controlled.

As can be recalled from the previous section, the motivation predicted the first contribution; therefore, I did a mediation analysis, and I found that the motivation variable was mediated by the first contribution variable when holding the partner's contribution statistically constant. The indirect effect size was significant (.1042) with a 95% CI between .0256 and .1814.

The conclusion from the previous section highlights, the higher the motivation to contribute, the higher the contribution in the first round. Therefore, it is expected that participants who were motivated to give to the group account contributed more in the first

round. Thus, the effect of motivation was actually indirect and its indirect effects on fairness evaluation should be considered.

First Contribution, Partner's Contribution Level, Framing and SVO Main Effects and Partner's Contribution Level-Framing Interaction Effect. I conducted a hierarchical multiple regression analysis and incorporated multiple predictors. The models are summarized in Table 8-2 below.

Table 8.2: Hierarchical Multiple Regression Models of Fairness Evaluation

	Model 1 ***B (SE)***	***Model 2*** ***B (SE)***
Intercept	1.780 (.111) ****	1.768 (.118) ****
Independent Variables:		
- First Contribution	.040 (.007) ****	.039 (.007) ****
- High-Contributor Partner [1]	2.485 (.097) ****	2.563 (.138) ****
- Equal-Contributor Partner [1]	1.494 (.114) ****	1.464 (.150) ****
- Community[2]	-.181 (.081) **	-.151 (.110)
- Prosocial[3]	-.002 (.083)	.004 (.083)
- Community* High-C Partner		-.151 (.188)
- Community* Equal-C Partner		.086 (.230)
Omnibus F Tests	143.992****	102.543****

* = p ≤ .10, ** = p ≤ .05, *** = p ≤ .01, **** = p ≤ .001.

[1] The low-contributor partner situation is the reference category.

[2] The stock market group is the reference category.

[3] The individualistic group is the reference category.

As can be seen from Model 2 in the previous table, when the interaction between framing and the partner's contribution level was taken into account, the framing effect disappeared. However, the interaction was not statistically significant. Therefore, I interpret Model 1, and conclude that the participants' own contribution, their partner's contribution, and framing were important factors in predicting fairness evaluation. This means that those who interacted with a low-contributor partner, those who were assigned

to the community study, and those who contributed fewer points to the group account evaluated the situation as more unfair than others. Although the statement "those who contributed fewer points to the group account evaluated the situation as more unfair" does not seem accurate, I explain the logic behind this specific situation in the following section below. I clarify why those who contributed more evaluated the situation as less unfair than those who contributed less to the group account.

Partitioned Data Analysis. My hypotheses specifically focus on the evaluation of a low-contributor vs. a high-contributor partner. Therefore, I partitioned the data by the partner's contribution level (low, high, equal) and did my analyses separately.

(Framing Effect). When participants interacted with a low-contributor partner, the mean fairness value was 2.24 (SD= .77) for the stock market group and 2.13 (SD= .79) for the community group. A one-way between-subject ANCOVA result was insignificant for differently named conditions when the participants' initial contribution was held constant [F (1, 120) =1.925, p = .168]. The result did not support hypothesis 2.2.a: "*Participants in the community study will evaluate their interaction with a low-contributor partner as more unjust compared to participants in the stock market study."* This indicates that participants in the community and stock market studies did feel similar emotional distress when interacting with a low-contributor partner.

When participants interacted with a high-contributor partner, the mean fairness value was 4.69 (SD= .35) for the stock market group and 4.38 (SD= .48) for the community group. The difference was statistically significant for differently named conditions when the participants' initial contribution was held constant [F (1,62) = 9.096, p = .004]. This indicates that participants in the community study did feel less guilty than participants in

the stock market study when their partner contributed a lot to the group account. The result supports hypothesis 2.2.b*: "Participants in the community study will evaluate their interaction with a high-contributor partner as more just compared to participants in the stock market study."*

(SVO Effect). Next, I checked the SVO effect on fairness evaluation when the data were partitioned by the partner's contribution level (low, high, equal). When participants interacted with a low-contributor partner, the mean fairness value was 2.09 (SD= .81) for individualistic participants and 2.27 (SD= .75) for prosocial participants. I hypothesized that individualistic participants would be angrier with a low-contributor partner than prosocial participants. The mean result shows that individualistic participants were likely to be angrier towards low-contributors, but the result from an ANOVA test was not statistically significant when the participants' initial contribution was held constant [F (1, 120) = .257, p = .613]. The data fail to support hypothesis 2.3.a: *"Prosocial participants will evaluate their interaction with a low-contributor partner as more unjust compared to individualistic participants."*

When participants interacted with a high-contributor partner, the mean fairness value was 4.52 (SD= .42) for individualistic participants and 4.53 (SD= .49) for prosocial participants. The result was not significant for SVO when the participants' initial contribution was held constant [F (1, 62) = .405, p = .527]. This means that prosocial participants and individualistic participants evaluated the situation very similarly in terms of fairness. The data fail to support hypothesis 2.3.b: *"Prosocial participants will evaluate their interaction with a high-contributor partner as more just compared to individualistic participants."*

(First Contribution Effect). In addition to the tests of my hypotheses, I checked whether or not a participants' own contribution played an important role in making justice judgments, when the data were partitioned by the partner's contribution level (low, high, equal). I used the categorical first contribution variable (i.e. participants categorized as low-givers, moderate-givers, or high-givers).

When participants interacted with a high-contributor partner, the mean fairness was 4.67 (SD= .39) for the low-giver group (who gave less than 10 points), 4.55 (SD= .36) for the moderate-giver group (who gave 10 points), and 4.22 (SD= .61) for the high-giver group (who gave more than 10 points). A one-way between-subject ANOVA test was significant across different levels of givers [$F(2, 61) = 4.233$), $p = .019$]. The Tukey HSD post-hoc test was highly significant for comparison between the high-giver and the low-giver groups [$p = .015$] and moderately significant between the high-giver and moderate-giver groups [$p = .071$]. This indicates that participants did care how much they gave to the group account when their partner gave more than what the participants gave to the group account. This means that participants who gave fewer points felt more guilt than others when their partner gave more to the group account.

Likewise, when participants interacted with a low-contributor partner, the mean fairness was 2.04 (SD= .64) for the low-giver group, 1.74 (SD= .57) for the moderate-giver group, and 2.67 (SD= .75) for the high-giver group. A one-way between-subject ANOVA test was highly significant across different levels of givers [$F(2, 119) = 24.247$), $p < .001$]. The Tukey HSD post-hoc test was highly significant for comparisons between the high-giver and the low-giver groups [$p < .001$] and between the high-giver and moderate-giver groups [$p < .001$]. This indicates that participants did care how much they gave to the

group account when their partner gave less than what the participants gave to the group account.

A visualization of the means of the participants' fairness evaluation across different levels of givers is presented in Figure 8-3 below. Two different figures help to compare the participants' fairness evaluations when interacting with a high-contributor partner (the first figure) and a low-contributor partner (the second figure).

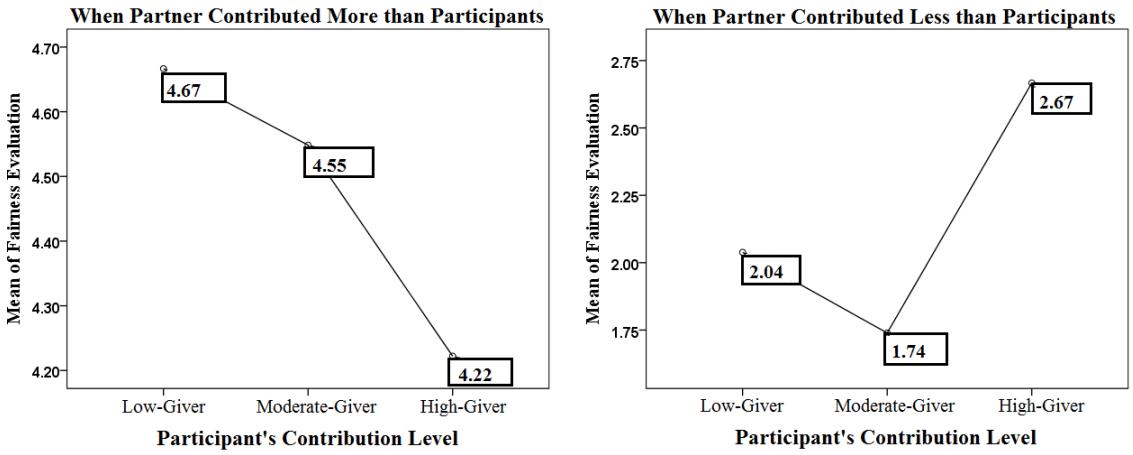

Figure 8.3: Comparison of Mean Fairness Evaluations When Partner Contributed More and Less than Participants

As can be seen in the first figure, when their partner contributed more than what the participants gave to the group account, the lower a participant's first contribution, the higher his/her feelings of guilt. As can be seen from the second figure, when their partner contributed less than what the participants gave to the group account, the relationship was more complicated. The participants giving a lot were not the angriest ones; actually, their justice evaluation was the closest to a fair evaluation (i.e. closest to 4.00 in the scale). Participants who gave 10 points (moderate-givers) were the angriest ones to a low-contributor partner. An explanation for this complicated relationship can also clarify why

participants who contributed more evaluated the situation as less unfair than participants who contributed less to the group account.

In the experiment, the program automatically adjusted the partner's (who was a computer-simulated person) points in accordance with what the participant gave to the group account minus 10 points and created a low-contributor partner condition. Thus, moderate-giver participants and low-giver participants in the low-contributor partner conditions always learned that their partner gave "0" to the group account. For instance, if a participant gave 10 points to the group account, his/her (low-contributor) partner gave "0" and if a participant gave 4 points to the group account, his/her (low-contributor) partner gave "0" to the group account. Thus, the bigger the difference between what a participant and his/her partner gave to the group account, the stronger the feelings of injustice.

Consequentially, the high-givers (who gave more than 10 points) were less angry than moderate-givers and low-givers. This indicates that having a partner gives "0" was perceived as worse than having a partner gives less than what you gave even the differences were the same (e.g. 10 points). For instance, if a participant gave 10 points to the group account, a low-contributor partner gave "0" and if a participant gave 14 points to the group account, a low-contributor partner gave "4" to the group account. The participant who interacted with a "0"-contributor partner expressed stronger feelings of injustice than the participants who interacted with a low-contributor (i.e. 4 points) partner. Therefore, I conclude that interacting with a "0"-contributor partner had significant effects on fairness evaluation. Although the difference was the same for previous example, participants expressed stronger emotional distress to a "0"-contributor than a low-contributor. This was

why those who gave more than 10 points evaluated the situation as less unfair than those who gave 10 points or less than 10 points.

Overall, the partitioned data and regression analyses strongly support that the partner's contribution level and participant's own contribution were strong factors in predicting the participants' justice evaluation. Model 1 in Table 8-2 shows that framing significantly predicted justice evaluation as well. This implies that the participant's anger to a low contributor partner and guilt for a high contributor partner varied across differently named studies when the first contribution variable was statistically controlled. Although Model 1 supports both hypotheses 2.2.a and 2.2.b, the partitioned data do not support hypothesis 2.2.a, but do support 2.2.b. Additionally, the participant's motivation was another important factor in predicting fairness evaluation, but its indirect effect though first contribution should be considered.

I also claimed that individualistic participants tend to be angrier towards a low-contributor, and less guilty about a high-contributor. However, these hypotheses are not supported by the data. Finally, I found that participants who gave 10 points and less to the group account evaluated their partner's low (i.e. "0" point) contribution as highly unjust compared to participants who gave more than 10 points in the first round.

8.4 CHANGES IN THE SECOND CONTRIBUTION

In this section, I analyzed one of the subsequent behaviors: changes in the second contribution. After reporting their justice or injustice experience, participants were given another 20 points whether to keep it for their own personal account or to contribute it to the group. I took the difference between their first contribution and second contribution

amounts. I assume that a change (which can be an increment, a decrease, or no change) in their second contribution will be a response to their justice or injustice experience.

Data

The data are slightly non-normal in accordance with the Kolmogorov-Smirnov and Shapiro-Wilk tests but, the skewness is = .28 and kurtosis is = 2.95 which indicates that the data display no skewness, but some kurtosis issue (i.e. platykurtic). Also, the data satisfied the assumption of homoscedasticity in both the Breusch-Pagan [LM= 7.241, p = .124] and Konker [LM= 4.774, p = .311] tests. Also, the data do not violate the assumption of multicollinearity. Consequently, I conducted parametric tests to analyze the data.

Findings

Fairness Evaluation Effect. I checked if fairness evaluation can predict the difference between the first and second contributions. I ran a hierarchical multiple regression analysis to determine the relationship between changes in the second contribution and fairness evaluation when statistically controlling for the participants' and their partner's first contributions. The results reveal that fairness evaluation significantly predicted changes in the second contribution [t= 3.738, p < .001].

Additionally, I ran a one-way between-subject ANCOVA test by using a categorical fairness when statistically controlling for the participants' initial contribution. In the experiment, participants answered four items and three of them were used to create a continues fairness variable. In the scale, "4" equals to fairness, values less than "4" refer to negatively unfair evaluations, and the values more than "4" refer to positively unfair evaluations. To create a categorical fairness variable, I recoded those as the negatively unfair group if the continuous fairness variable was less than 4, as the fair group if the

continuous fairness variable was 4, as the positively unfair group if the continuous fairness variable was more than 4.

The ANCOVA result was statistically significant for the categorical fairness variable when the participants' initial contribution was held constant [F (2, 221) = 66.371, p < 001]. The mean decreased points were -4.48 (SD= 5.81) for those who evaluated the situation negatively unjust, 4.58 (SD= 3.84) for those who evaluated the situation positively unjust, and .46 (SD= 4.37) for those who evaluated the situation just. A planned contrast test shows that comparisons between the negatively unfair and fair groups and between the negatively unfair and positively unfair groups were significantly whereas between the fair and positively unfair groups was not significantly associated.

From the ANCOVA test, I also generated Figure 8-4 below showing the estimated marginal means for changes in the second contribution by different fairness evaluations.

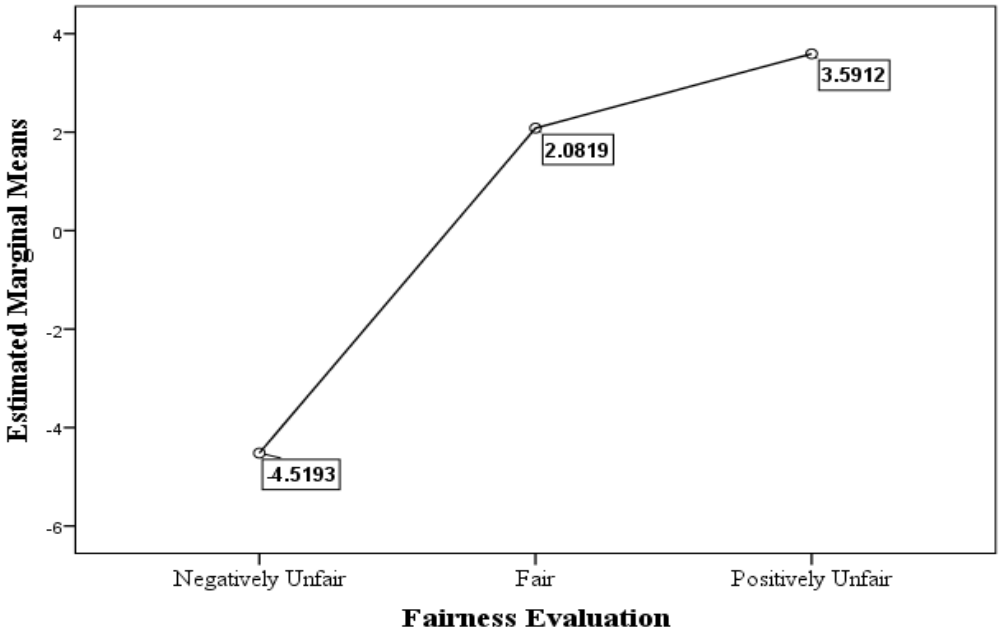

Figure 8.4: Estimated Marginal Means for Changes in the Second Contribution[19]

[19] Covariates appearing in the model are evaluated at the following values: first contribution = 11.85.

All these test results show that participants who experienced stronger negative injustice decreased their second contribution while participants who experienced positive injustice increased their second contribution compared to participants who experienced justice. Thus, the data support hypothesis 3.1.a: *"Participants who experience negative injustice will give fewer points in the second round compared to those who experience positive injustice and justice*" and hypothesis 3.1.b: *"Participants who experience positive injustice will give more points in the second round compared to those who experience negative injustice and justice."*

Framing Effect. I ran a one-way between-subject ANCOVA test by controlling the participants' and their partner's first contributions and the result was insignificant across differently named conditions [F (1, 222) = .441, p = .507].

SVO Effect. I ran a one-way between-subject ANCOVA test by controlling the participants' and their partner's first contributions and the result was highly significant for SVO [F (1, 222) = 8.601, p = .004]. The mean decreased points were -1.84 for individualistic participants and -1.04 for prosocial participants. This indicates that individualistic participants decreased their second contribution more than prosocial participants when statistically controlling for the participants' and their partner's initial contributions.

Framing-SVO Interaction Effect. I also checked whether SVO and framing had an interaction effect on changes in the second contribution when the participant's and their partner's first contributions were held constant. I ran a two-way ANCOVA test and found a significant interaction effect. I summarized the ANCOVA test results in Table 8-3 below.

Table 8.3: Two-factorial ANCOVA Results for Changes in the Second Contribution

	F	P-Value
Control Variables:		
- Participant's First Contribution	153.736	<. 0001
- Partner's First Contribution	177.770	<. 0001
Independent Variables:		
- Study Name	.430	.186
- SVO	8.684	.004
- Study Name*SVO	4.533	.034

* = p ≤ .10, ** = p ≤ .05, *** = p ≤ .01, **** = p ≤ .001.

I also generated a graph to visualize the estimated marginal means of changes in the second contribution by study name and SVO (See Figure 8-5 below).

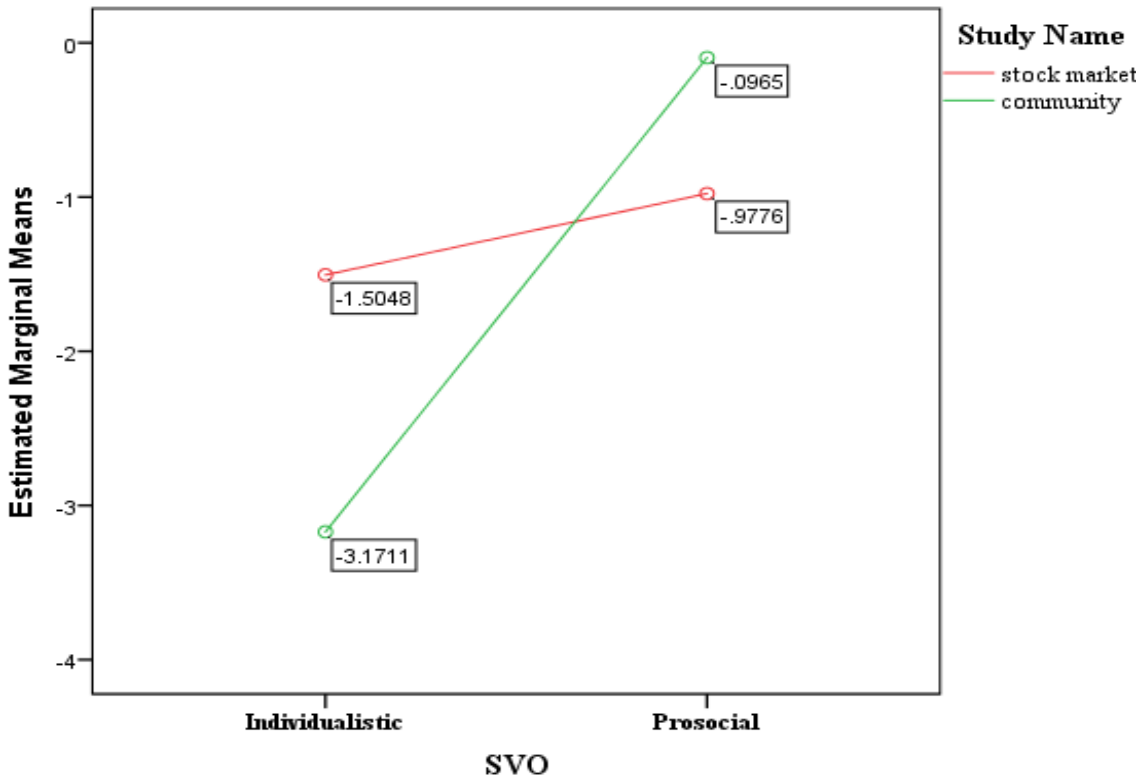

Figure 8.5: Estimated Marginal Means of Changes in the Second Contribution[20]

[20] Covariates appearing in the model are evaluated at the following values: participant's first contribution = 11.85, partner's first contribution = 9.53.

When the participants' and their partner's contributions were held constant, the interaction of SVO and framing was significant. This indicates the main effects cannot be trusted to reach a valid result; the interaction should be interpreted. As can be seen from Figure 8-5 and Table 8-3, the interaction effect implies that prosocial and individualistic participants in the stock market study were more likely to decrease their second contribution similarly.

However, in the community study individualistic participants were likely to decrease their second contribution more than prosocial participants in the community study. This means for some reasons, SVO was not effective in the stock market study while very effective in the community study in predicting changes in the second contribution. In the community study, prosocial participants were more likely to forgive their partner and decreased their second contribution very little while individualistic participants were likely to punish their partner by decreasing their second contribution a lot. Unlike the community study, the results show that in the stock market individualistic and prosocial participants changed their second contribution very similarly.

First Contribution, Partner's Contribution Level, Framing, SVO Main Effects and SVO-Framing Interaction Effect. Next, I created models to analyze changes in the second contribution. I ran a hierarchical multiple regression analysis and incorporated multiple predictors. The models are summarized in Table 8-4 below.

Table 8.4: Hierarchical Multiple Regression Models for Changes in the Second Contribution

	Model 1 ***B (SE)***	***Model 2*** ***B (SE)***
Intercept	-2.637 (.830) ***	-1.925 (.883) **
Independent Variables:		
- First Contribution	-.261 (.052) ****	-.264 (.052) ****
- High-Contributor Partner [1]	8.933 (.720) ****	8.850 (.715) ****
- Equal-Contributor Partner [1]	6.472 (.853) ****	6.539 (.846) ****
- Community[2]	-.405 (.608)	-1.731(.847) **
- Prosocial[3]	1.695 (.619) **	.353 (.860)
- Prosocial*Community		2.671 (1.199) **
Omnibus F Tests	47.096****	40.786****

* = p ≤ .10, ** = p ≤ .05, *** = p ≤ .01, **** = p ≤ .001.

[1] The low-contributor partner situation is the reference category.

[2] The stock market group is the reference category.

[3] The individualistic group is the reference category.

As can be seen from Model 2, there was a clear interaction between framing and SVO. Consistent with the ANCOVA analysis (See Table 8-3 and Figure 8-5 above), Model 2 indicates that those individualistic participants who were assigned in the community study changed their second contribution more than others. Also, Model 2 specifies that those who contributed little in the first round and those who interacted with a high- or equal-contributor partners were likely to change their second contribution more than others.

First Contributions, Fairness Evaluation, Framing, SVO Main Effects and SVO-Framing Interaction Effect. In addition to the analysis above, I ran a hierarchical multiple regression analysis and incorporated multiple predictors and summarized my models in Table 8-5 below.

Table 8.5: Hierarchical Multiple Regression Models for the Changes in the Second Contribution

	Model 1 ***B (SE)***	***Model 2*** ***B (SE)***
Intercept	-4.241 (1.558) **	-3.508 (1.590) **
Independent Variables:		
- Participant's First Contribution	-.533 (.066) ****	-.535 (.065) ****
- Partner's First Contribution	.258 (.080) ***	.262 (.080) ****
- Fairness	1.860 (.501) ****	1.809 (.498) ****
- Community[1]	-.105 (.591)	-1.279 (.830)
- Prosocial[2]	1.784 (.599) ***	.619 (.833)
- Community*Prosocial		2.331 (1.166) **
Omnibus F Tests	52.712****	445.197****

* = p ≤ .10, ** = p ≤ .05, *** = p ≤ .01, **** = p ≤ .001.

[1] The stock market group is the reference category.

[2] The individualistic group is the reference category.

As can be seen from model 2, there was a clear moderating effect. The interaction between framing and SVO variables was significant which means that interaction should be interpreted. Model 2 also indicates that those who contributed less in the first round, those whose partners contributed more in the first round, and those who evaluated the situation as fair or positively unfair changed their second contribution more than others. These findings are also consistent with the previous multiple regression analysis findings as well (See Table 8-4).

Partitioned Data Analysis. In order to specify the changes in the second contribution, I partitioned the data in terms of the partner's contribution level (low, equal, high).

(Framing Effect). The results for the framing variable were insignificant for the low [F (1, 120) = .384, p= .537], equal [F (1, 36) =1.498, p = .229] and high [F (1, 62) = .001, p = .981] conditions. This indicates hypothesis 3.2.a: "*The community group will reduce*

points given in the second round more as compared to the stock market group" (when participants interacted with a low-contributor partner) and the hypothesis 3.2.b: *"The community group will increase points given in the second round less as compared to the stock market group" (when participants interacted with a high-contributor partner)* are not supported by the data. The result indicates that participants in the community and stock market groups changed their second contribution very similarly as response to their interaction with a high-, low-, or equal-contributor partner.

Although the results were not statistically significant, when participants interact with a low contributor, the community group decreased their second contribution slightly more than the stock market group (M= -5.54 points, SD= 4.91 vs. M= -4.95, SD= 5.578). This result implies consistency with the hypothesis 3.2.a, but the difference was not statistically significant. Hypothesis 3.2.b was not supported at all. When interacting with a high-contributor partner, the mean increased points was 4.47 (SD= 3.441) for stock market group and 4.44 (SD= 4.925) for the community group. This indicates that the increment in the second contribution was very similar between the community and stock market groups.

(SVO Effect). Next, I checked if SVO was significant across different groups (low, high, equal). SVO was a strong predictor only in the low contribution situation in analyzing the changes in the second contribution. Individualistic participants decreased their points (M=-6.36, SD= 5.37) more than prosocial participants (M= 4.15 SD= 4.91) when interacting with a low-contributor partner. The difference was statistically significant. [F (1, 120) = 5.638, p= .019]. The result shows that hypothesis 3.3.a: "*Individualistic participants will reduce points given in the second round more as compared to prosocial*

participants" (when participants interacted with a low-contributor partner) is supported by the data.

When interacting with a high-contributor partner, the mean increased points was 4.14 (SD= 4.36) for individualistic and 4.89 (SD= 4.16) for prosocial participants, but the difference was not statistically significant [F (1, 62) = .484, p = .489]. This indicates that hypothesis 3.3.b: *"Individualistic participants will increase point given in the second round less as compared to prosocial participants" (when participants interacted with a high-contributor partner)* was not supported by the data.

(First Contribution). In addition to the analyses testing hypotheses, I also checked whether the participants' first contribution level affected their changes in the second round when the data portioned by their partner's contribution level. The results from a linear regression analysis for first contribution were significant for the low [t= -2.586, p= .011], equal [t= -3.999, p < .001] and high [t= -1.956, p= .055] conditions. The result reveals that when interacting with a low-contributor partner, participants who gave a lot to the group account in the first round decreased their second contribution more than participants who gave little to the group account in the first round (M = -6.06, SD= 6.27 vs. M= -2.50, SD= 3.36 respectively). When interacting with a high-contributor partner, participants who gave a lot to the group account in the first round increased their second contribution less than participants who gave little to the group account in the first round (M = 2.08, SD= 2.39 vs. M= 5.29, SD= 5.31 respectively).

Overall, the results show that the best predictors for a decrease or an increment in the second contribution were the participants' and their partner's first contributions, fairness evaluations, and the interaction of SVO and framing variables.

8.5 TENDENCY TO CHANGE PARTNER

Second justice-restoring attempt measure is the participants' tendency to change partners for future rounds. After submitting their second contribution, participants were asked to what extent they would prefer to switch their partners and work with a different person for future rounds. Participants ranked their preference to end the relationship with their unjust partners (7-point Likert scale). The scale ranged from 1= no preference to switch partner, 4= moderate preference to switch partner, and 7= strong preference to switch partner.

Data

The data are slightly non-normal in accordance with the Kolmogorov-Smirnov and Shapiro-Wilk tests. However, the skewness is = .79 and kurtosis is = - 4.00 which indicates that the data have no skewness, but some kurtosis issues (i.e. paltykurtic). The data satisfied the assumptions of homoscedasticity in both the Breusch-Pagan [LM= 3.623, p = .605] and Konker [LM= 4.290, p= .508] tests. The data also satisfy the assumption of multicollinearity. Consequently, I conducted parametric tests to analyze my data.

Findings

Fairness Evaluation Effect. I ran a hierarchical multiple regression analysis to determine the relationship between the tendency to change partners and fairness evaluation when statistically controlling for the participants' and their partner's first contributions. The results reveal that fairness evaluation significantly predicted the participant's willingness to switch partner [t =-5.092, p < .001].

I also ran an ANCOVA test by using the categorical fairness variable when controlling for the participants' and their partner's initial contribution. The ANCOVA

results were significant [F (2, 221) = 5.929, p = .003]. The mean tendency to change partners was 4.50 (SD= 1.81) for those who evaluated the situation negatively unjust, 2.35 (SD= 1.54) for those who evaluated the situation positively unjust, and 1.86 (SD= 1.16) for those who evaluated the situation just. The LSD post-hoc test was significant for comparisons between the negatively unjust and just groups [p = 001] and between the negatively unjust and positively unjust [p = .045] groups. This means that participants who experienced stronger negative injustice were more willing to quit relationship than others.

From the ANCOVA test, I also generated Figure 8-6 for a visual below showing that the estimated marginal means for the tendency to change partner by different justice evaluation categories.

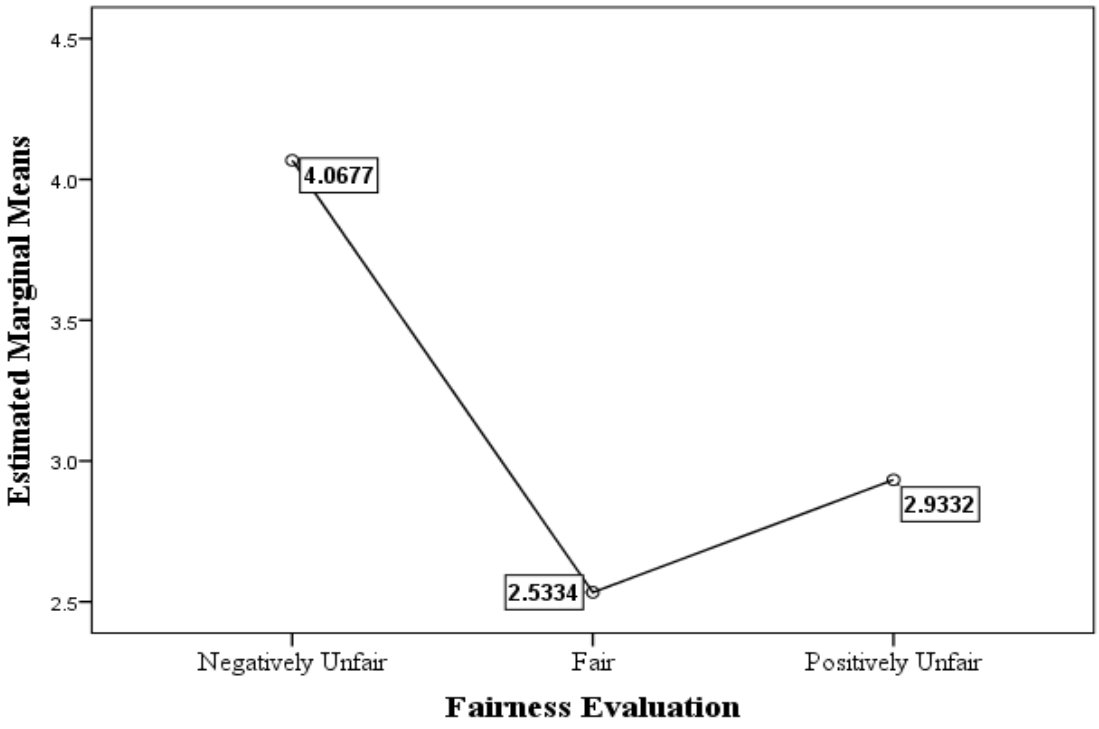

Figure 8.6: Estimated Marginal Means for Tendency to Change Partner[21]

[21] Covariates appearing in the model are evaluated at the following values: partner's first contribution= 9.53, participant's first contribution = 11.85.

From these analyses, I conclude that the data support hypothesis 4.1.a: "*Participants who experience negative injustice will be more willing to change partner compared to those who experience positive injustice and justice."* However, the result partially supports hypothesis 4.1.b: "*Participants who experience positive injustice will be less willing to change partner compared to those who experience negative injustice and justice."*

Unlike my prediction, those who experienced positive injustice were more willing to change their partners compared to participants who experienced justice. However, the difference was insignificant. Consequently, the data clearly support that who experienced negative injustice were more willing to change partners than those who experienced positive injustice.

Framing Effect. To analyze the framing effect on the tendency to change partners, I ran a one-way between-subject ANCOVA test by controlling the participants' and their partner's first contributions. The result was insignificant across differently named conditions [$F(1, 222) = .036$, $p = .851$].

SVO Effect. To analyze the SVO effect on the tendency to change partners, I ran a one-way between-subject ANCOVA test by controlling the participants' and their partner's first contributions. The result was insignificant for SVO [$F(1, 222) = .007$, $p = .934$].

Partner's Contribution Level Effect. I ran a hierarchical multiple regression analysis in order to determine whether or not their partner's contribution level predicted the participants' tendency to change partners for future rounds. The results for both the high-contribution [$t_{high} = -9.850$, $p < .05$] and equal-contribution [$t_{equal} = -6.305$, $p < 05$]

situations[22] were significant when the participants' first contribution was statistically controlled. This indicates that those who interacted with a low-contributor partner were more willing to change their partners than those who interacted with a high- or an equal-contributor partner.

Partitioned Data Analysis. Since my hypotheses specifically focus on high- and low-contributor partner situations, I also partitioned the data in terms of the partner's contribution levels (low, high, equal).

(Framing Effect). A one-way between-subject ANOVA test results for framing were insignificant for the low [F (1, 120) = .348, p = .557], high [F (1, 62) = .040, p = .842], and equal [F (1, 36) = 1.762, p = .193] conditions. The result from the partitioned data and the previous ANCOVA tests do not support hypothesis 4.2.a: "*The tendency to change a low-contributor partner will be greater in the community group compared to the stock market group"* and hypothesis 4.2.b: "*The tendency to change a high-contributor partner will be lower in the community group compared to the stock market group."* The participants' tendency to change partners was not predicted by the framing variable.

(SVO Effect). I also checked whether or not SVO has any effect when the data partitioned by the partner's contribution level (low, high, equal). A one-way between-subject ANOVA test results were insignificant for the low [F (1, 120) = .088, p = .767], high [F (1, 62) = 1.066, p = .306], and equal [F (1, 36) = 2.130, p = .153] conditions. The result from the partitioned data and the previous ANCOVA tests do not support hypothesis 4.3.a: "*The tendency to change a low-contributor partner will be greater for individualistic participants compared to prosocial participants"* and hypothesis 4.3.b: "*The tendency to*

[22] The low contribution situation is the reference group.

change a high-contributor partner will be lower for individualistic participants compared to prosocial participants." The participants' tendency to change partners was not predicted by the SVO variable.

First Contribution, Partner's Contribution Level, Framing, SVO, Fairness Main Effects and SVO-Fairness Interaction Effect. I ran a hierarchical multiple regression analysis incorporating multiple predictors and summarized the models in Table 8-6 below.

Table 8.6: Hierarchical Multiple Regression Models for the Tendency to Change Partner

	Model 1 ***B (SE)***	***Model 2*** ***B (SE)***	***Model 3*** ***B (SE)***
Intercept	5.709 (.298) ****	7.146 (.420) ****	6.570 (.467) ****
Independent Variables:			
- First Contribution	-.097 (.019) ****	-.065 (.019) ****	-.057 (.019) ***
- High-Cont. Partner [1]	-2.535 (.259) ****	-.529 (.497)	-.381 (.493)
- Equal-Cont. Partner [1]	-1.906 (.306) ****	-.700 (.391) *	-.632 (.386)
- Community[2]	.039 (.218)	-.107(.211)	-.077 (.208)
- Prosocial[3]	.015 (.222)	.014 (.212)	-.305 (.241)
- Fairness		-.807 (.173) ****	-.672 (.178) ****
- Prosocial*Fairness			-.539 (.202) ***
Omnibus F Tests	25.434 ****	26.824****	24.658****

* = p ≤ .10, ** = p ≤ .05, *** = p ≤ .01, **** = p ≤ .001.
[1] The low-contributor partner situation is the reference category.
[2] The stock market group is the reference category.
[3] The individualistic group is the reference category.

As can be seen from Model 2 and Model 3, when fairness evaluation was taken into account, the partner's contribution level variable became insignificant. This indicates that fairness evaluation played a mediator role in this model. As can be recalled from the previous analyses, the partner's contribution level variable significantly predicted the participants' fairness evaluation and also tendency to change their partner. Fairness also predicted the participants' tendency to change partner. Therefore, I conclude that the

partner's contribution had indirect effect on the tendency to change partner. The indirect effect size was -1.1576 with a 95% CI between -1.4031 and -.9121.

Model 3 shows that there was an interaction between SVO and fairness evaluation. This specifies that prosocial participants who evaluated the situation as fair or positively unfair were less willing to change their partners than others. Model 3 also demonstrates that participants who contributed less in the first round and participants who evaluated the situation as negatively unfair were more likely to change their partners for future rounds.

Partitioned Data Analysis. To analyze the interaction between fairness evaluation and SVO, I partitioned the data by (categorical) fairness evaluation and checked the SVO effect on the tendency to change partners. However, the results were insignificant for those who evaluated the situation negatively unjust [$F(1, 130) = .002$, $p = .962$] and for those who evaluated the situation positively unjust [$F(1, 53) = 1.113$, $p = .296$]. The partitioned data did not provide enough support for the interaction of SVO and fairness evaluation.

Overall, the data shows that the first contribution, fairness evaluation, and the interaction of SVO and fairness were important factors in predicting the tendency to change partners. Those who evaluated the situation as unfair were more likely to change their partners compared to those who evaluated the situation as fair or positively unfair. This means that hypotheses 4.1.a fully and 4.1.b (partially) are supported by the data. However, hypotheses 4.2.a and 4.2.b are not supported by the data. This indicates that participants in the community group were not more willing to change their partners compared to the stock market group. Finally, hypotheses 4.3.a and 4.3.b were not supported by the data. This indicates that individualistic participants were not more willing to change their partners than prosocial participants. The result also shows that the first contribution and fairness

were highly significant predictors, and there was a significant interaction between SVO and fairness which should be taken into consideration. The interaction indicates that prosocial participants who evaluated the situation as positively unfair and as fair were less likely to change their partners for future rounds compared to others. Finally, the partner's contribution had indirect effect on the tendency to change partners.

8.6 WILLINGNESS TO SHARE GROUP BONUS

The third justice-restoring attempt measure is the shared bonus points with partner. Participants were told that they were selected to distribute a group bonus (10 points) and they were free to send any amount of them to their partner or keep all of them for themselves. They sent any amount of 10 points (i.e. group bonus) to their partner and the rest automatically added to their personal account. In essence, I took how many points (out of 10 bonus points) participants shared with their partner to measure their willingness to share group bonus with their partner.

Data

The data are slightly non-normal in accordance with the Kolmogorov-Smirnov and Shapiro-Wilk tests, but the skewness is = 4.80 and kurtosis is = .41. This indicates that the data display some skewness, but no kurtosis issues. The data violate the assumptions of homoscedasticity, but satisfy the assumption of multicollinearity. Consequently, I ran parametric tests to analyze my data.

Findings

Fairness Evaluation Effect. I checked if fairness evaluation can predict the shared bonus points. I ran a hierarchical multiple regression analysis in order to determine the relationship between the shared points and fairness evaluation when statistically

controlling for the participants' and their partner's first contributions. The results reveal that fairness evaluation was significantly associated with the participant's decision to share group bonus with partner [t =2.839, p = .005].

Additionally, I ran a one-way between-subject ANOVA test by using the categorical fairness variable. and the result was significant [F (2, 221) = 14.482, p < 001]. The mean shared points were 2.07 (SD= 2.58) for those who evaluated the situation negatively unjust, 4.22 (SD= 3.08) for those who evaluated the situation positively unjust, and 4.08 (SD= 3.48) for those who evaluated the situation just. The Tukey HSD test was significant for comparisons between the negatively unjust and just groups [p = .001] and between the negatively unjust and positively unjust [p < .001] groups.

From the ANOVA test, I also generated Figure 8-7 below showing the means of shared bonus points with partner by different justice evaluation categories.

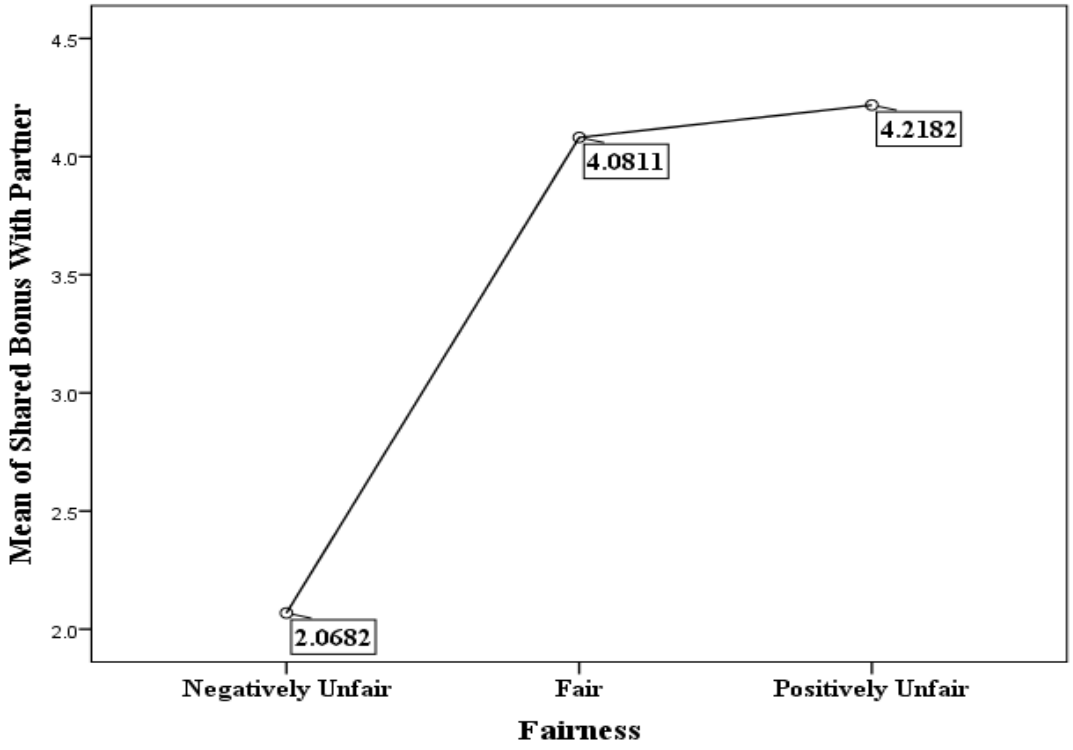

Figure 8.7: Means Plot for Shared Bonus with Partner

These results demonstrate that participants who experienced stronger negative injustice shared fewer points and participants who experienced positive injustice shared more points with their partners compared to participants who experienced justice. This indicates that the data support hypothesis 5.1.a: *"Participants who experience negative injustice will give fewer points to partner compared to those who experience positive injustice and justice*" and partially support hypothesis 5.1.b: *"Participants who experience positive injustice will give more points to partner compared to those who experience negative injustice and justice."*

From the analyses, I completed so far, I claim that participants who experienced positive injustice shared more points with their partners as compared to participants who experienced negative injustice. The difference between justice and positive injustice was not statically significant to support hypothesis 5.1.b fully.

Framing Effect. I ran a one-way between-subject ANCOVA test to determine the relationship between the framing and sharing bonus with partner variables. The result was insignificant for differently named conditions when statistically controlling for the participants' and their partner's first contributions [F (1, 222) = .300, p = .584].

SVO Effect. I ran a one-way between-subject ANCOVA test to determine the relationship between SVO and sharing bonus with partner when the participants' and their partner's first contributions were held constant. The result was highly significant for SVO when statistically controlling for the participants' and their partner's first contributions [F (1, 222) = 9.575, p = .002]. The mean shared points were 2.25 (SD= 2.74) for individualistic participants and 3.61 (SD= 3.18) for prosocial participants. This indicates that prosocial participants were more likely to share more points with their partner than individualistic

participants when statistically controlling for the participants' and their partner's first contributions.

Framing-SVO Interaction Effect. I also checked if SVO and framing had an interaction effect when controlling for the participants' and their partner's first contributions. I ran a two-way ANCOVA test and summarized the models in Table 8-7 below.

Table 8.7: Two-factorial ANCOVA Results for Shared Bonus with Partner

	F	**P-Value**
Control Variables:		
- Participant's First Contribution	.019	.891
- Partner's First Contribution	35.233	<. 0001
Independent Variables:		
- Study Name	.293	.589
- SVO	9.828	.002
- Study Name*SVO	8.148	.005

* = p ≤ .10, ** = p ≤ .05, *** = p ≤ .01, **** = p ≤ .001.

As can be seen from Table 8-7, the interaction of SVO and framing was significant when the participants' and their partner's first contributions were held constant. Thus, the interaction should be interpreted. Also, the SVO variable was still significant in predicting the shared bonus points.

I also generated a graph (See Figure 8-8 below) in order to visualize the estimated marginal means of shared bonus points with partner by the study name and SVO variables.

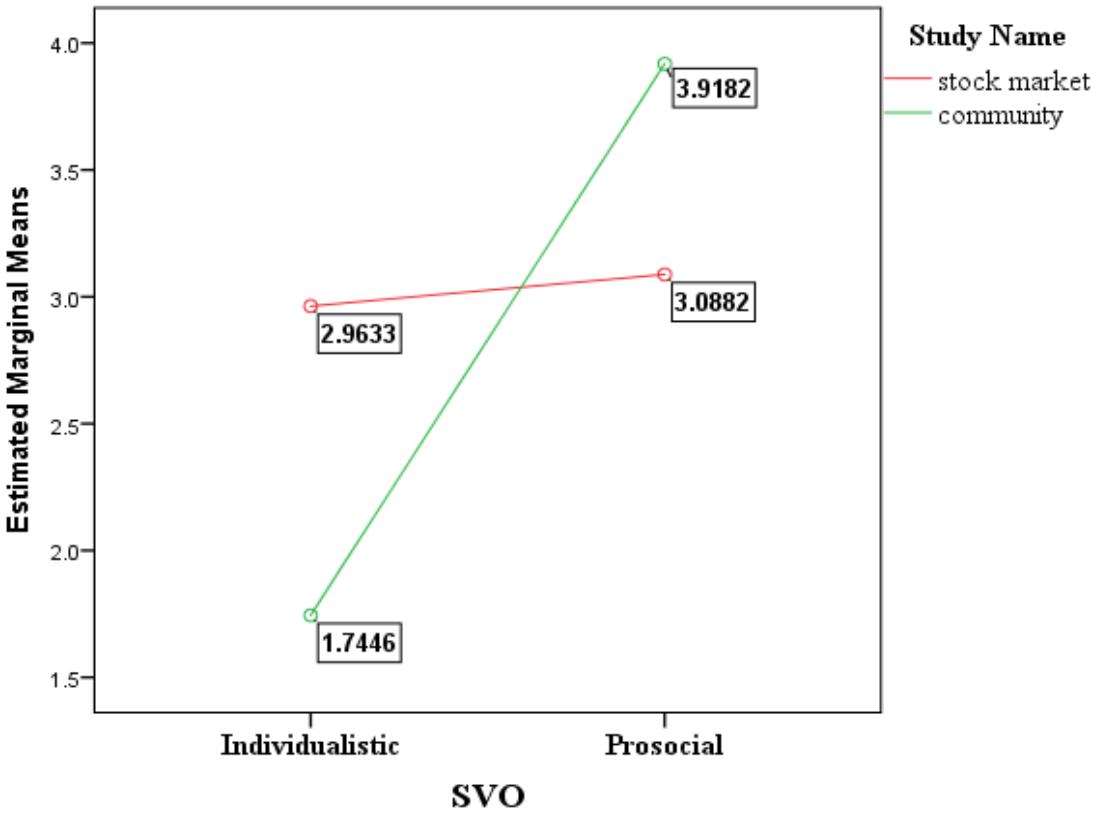

Figure 8.8: Estimated Marginal Means of Shared Bonus with Partner[23]

Figure 8-8 demonstrates that the interaction effect implies that prosocial participants and individualistic participants in the stock market study were more likely to share similar points with their partners. However, in the community study, individualistic participants were likely to give fewer points to their partners than prosocial participants. This means for some reasons, SVO was not effective in the stock market study while very effective in the community study in predicting the shared bonus with partner.

[23] Covariates appearing in the model are evaluated at the following values: participant's first contribution = 11.85, partner's first contribution = 9.53.

First Contribution, Partner's Contribution Level, Framing, SVO Main Effects and SVO-Framing Interaction Effect. Next, I ran a hierarchical multiple regression analysis and summarized my models in Table 8-8 below.

Table 8.8: Hierarchical Multiple Regression Models for Shared Bonus with Partner

	Model 1 ***B (SE)***	***Model 2*** ***B (SE)***
Intercept	.009 (.499)	.551 (.526)
Independent Variables:		
- First Contribution	.124 (.0310) ****	.122 (.031) ****
- High-Contributor Partner [1]	2.643 (.433) ****	2.579 (.426) ****
- Equal-Contributor Partner [1]	1.398 (.513) ***	1.449 (.505) ***
- Community[2]	-.235 (.365)	-1.247(.505) **
- Prosocial[3]	1.149 (.372) ***	.126 (.513)
- Prosocial*Community		2.037 (.715) ***
Omnibus F Tests	12.302****	11.938****

* = p ≤ .10, ** = p ≤ .05, *** = p ≤ .01, **** = p ≤ .001.
[1] The low-contributor partner situation is the reference category.
[2] The stock market group is the reference category.
[3] The individualistic group is the reference category.

As can be seen from Model 2, there was a clear interaction between the framing and SVO variables. This indicates that those prosocial participants who were assigned in the community study shared more points with their partner than others. Also, Model 2 specifies that those who contributed a lot in the first round and those who interacted with a high- or equal-contributor partners were likely share more bonus points with their partner than others.

Partitioned Data Analysis. In order to analyze the participants' willingness to share the bonus points, I partitioned the data by the partner's contribution level (low, equal, high).

(Framing Effect). The results for the framing variable were insignificant for the low [F (1, 120) = .227, p= .635], equal [F (1, 36) =.432, p = .515] and high [F (1, 62) = .239, p

= .627] conditions. This indicates that the data do not support hypothesis 5.2.a: "*Participants in the community group will share fewer points with a low-contributor partner than participants in the stock market group"* and hypothesis 5.2.b: *"Participants in the community group will share fewer points with a high-contributor partner than participants in the stock market group."* The result indicates that participants in the community and stock market groups shared similar bonus points with their partner.

(SVO Effect). Next, I checked if SVO was significant across different groups (low, high, equal). SVO was a strong factor in the low- and high-contribution conditions in predicting the participants' willingness to share bonus points with partner. Individualistic participants shared 1.28 points (SD= 1.90) and prosocial participants 2.74 (SD= 2.74) when interacting with a low-contributor partner. The difference was statistically significant [F (1, 120) = 11.697, p= .001]. The result shows that hypothesis 5.3.a: "*Individualistic participants will share fewer points with a low-contributor partner than prosocial participants"* is supported by the data. Similarly, in a high-contribution condition, individualistic participants shared 3.19 points (SD= 2.81) and prosocial participants 5.41 (SD= 3.27) when interacting with a high-contributor partner. The difference was statistically significant [F (1, 62) = 8.470, p= .005]. The result shows that hypothesis 5.3.b: "*Individualistic participants will share fewer points with a high-contributor partner than prosocial participants"* is supported by the data.

First Contributions, Fairness Evaluation, Framing, SVO Main Effects and SVO-Framing Interaction Effect. Additionally, I ran a hierarchical multiple regression analysis and incorporated multiple predictors and summarized my models in Table 8-9 below.

Table 8.9: Hierarchical Multiple Regression Models for Shared Bonus with Partner

	Model 1 ***B (SE)***	***Model 1*** ***B (SE)***	***Model 2*** ***B (SE)***
Intercept	1.072 (.447)	-1.313 (.955)	-.700 (.966)
Independent Variables:			
- Participant's FirstCont	.003 (.033)	.069 (.040) *	.068 (.040) *
- Partner's FirstCont	.141 (.024) ****	.019 (.049)	.022 (.049)
- Community[1]	-.194 (.365)	-.061 (.362)	-1.043 (.505) **
- Prosocial[2]	1.149 (.373) ***	1.142 (.367) ***	.167 (.506)
- Fairness		.864 (.307) ***	.821 (.303) ***
- Community*Prosocial			1.951 (.708) ***
Omnibus F Tests	14.400****	13.470****	12.828****

* = $p \leq .10$, ** = $p \leq .05$, *** = $p \leq .01$, **** = $p \leq .001$.

[1] The stock market group is the reference category.

[2] The individualistic group is the reference category.

As can be seen from Model 2, there was a clear moderating effect. The interaction between framing and SVO was significant which means that interaction should be interpreted to reach a valid result. The interaction indicates that those prosocial participants who were assigned to the community study were likely to share more points with their partners. Model 2 also indicates that those who evaluated the situation as fair or positively unfair shared more points with their partners than those who evaluated the situation as negatively unfair. It is expected that when participants feel a situation was fair or they benefitted unfairly from the situation, they compensate their partners by sharing the group points with their partners.

Overall, the results show that the best factors in analyzing the participants' willingness to share group points with partner were the participants' first contribution, their partner's contribution level, fairness evaluation, and the interaction of SVO and framing variables. I conclude that my hypothesis claiming that community group would give less

bonus points to partner is not supported by the data. Actually, prosocial participants located in the community study gave more bonus points to their partners.

8.7 DISCUSSION

The experimental data support hypotheses 1.2, 2.1, 2.2b, 3.1a, 3.1b, 3.3a, 4.1a, 4.1b, 5.1a, 5.1b, 5.3a, and 5.3b. The remaining hypotheses are not supported by the data. Some results show that behaviors were actually the opposite of what I had predicted in some conditions. Inconsistent results either showing that the relationship was more complicated than predicted or showing that the manipulations did not work the way I assumed they would. I summarize my findings from the experimental data analyses through a diagram in Figure 8-9 below.

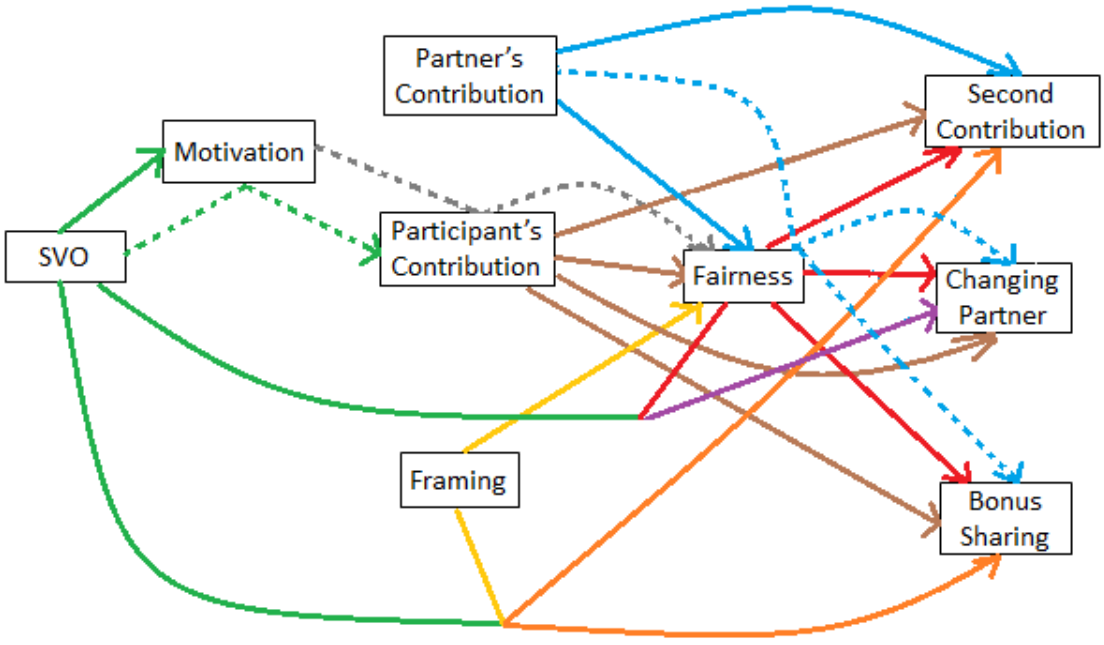

Figure 8.9: Experiment Findings (Note: Indirect relationships illustrated with dotted arrows. Mixed colors refer to interactions.)

First Contribution. The results from the experimental study for the first contribution variable are consistent with the vignette study. Despite the findings of some previous studies (e.g., Ellingsen et al. 2012; Liberman et al. 2004), the results show that unconditional contributions, i.e. first contributions, to the group account did not vary across different social frames (for similar examples, see Bernold, Gsottbauer, Ackermann, et al. 2014; Brandts and Schwieren 2009; Dufwenberg et al. 2011). As consistent with the vignette findings, the experiment results show that different titles did not lead participants to contribute certain contribution amounts (e.g. high, low) in the first round. This also suggests that different titles did not create different expectations for contribution in an experimental setting as well as a hypothetical vignette setting. In conclusion, the community study and the stock market study titles did not create a high and low contribution expectation respectively.

From both the experiment and vignette studies, I conclude that the stock market (in the experiment) or the Wall Street (in the vignette) title may have induced members to contribute to the group account to gain more points and may have encouraged them to not be generous but strategic to gain the most points. On the other hand, the community title may have encouraged them to contribute to the group account for collective gain and may have encouraged them to be not strategic but generous to gain most points. Although their motives to contribute (e.g. strategic vs. generous) were different, both groups' members contributed similar amounts in the first round and thus expected similar contributions from their partner.

Although framing was a not significant predictor, I found that SVO was a very strong predictor in analyzing the first contribution in both vignette and experimental

studies. The results for SVO confirm the previous findings as well (e.g., Balliet et al. 2009; De Dreu and Van Lange 1995; Van Lange and Kuhlman 1994; Van Lange and Liebrand 1991). Therefore, I conclude that only SVO predicted the variation in the first contribution variable. Prosocial participants were likely to give more money to the group account than individualistic participants in both the vignette and experiment.

In the experiment, I checked whether motivation to contribute to the group account had any effect on first contribution. The motivation variable mediated the SVO variable in predicting the first contribution. The mediation analysis provides a more detailed explanation for the relationship between SVO and the first contribution. The mediation analysis shows that SVO had direct and indirect effects on the first contribution. Consequently, prosocial participants were more likely to be motivated to contribute to the group account and they did contribute more than individualistic participants.

Fairness Evaluation. Consistent with previous research (e.g., Jasso 1980; Sweeney 1990), participants experienced stronger emotional distress when they interacted with a low-contributor partner compared to an equal- or a high-contributor partner. The data support all my justice hypotheses. Additionally, this dissertation adds the framing and SVO effects on fairness evaluation

I predicted that the community frame would create a high contribution expectation; thus, those in the community group would be angrier for their partner's low contribution, but would not express strong guilt for their partner's high contribution. Meanwhile, the stock market frame would create a low contribution expectation; thus, those in the stock market group would feel less anger for their partner's low contribution, but would express strong guilt for their partner's high contribution. This means that because of a high

contribution expectation, the community group would express stronger negative injustice than the stock market group, and the stock market group would express stronger positive injustice than the community group.

A model combined with the participants' first contribution, their partner's first contribution, SVO, and framing variables shows that all these factors, except SVO, predicted the participants' fairness evaluation. Although SVO was very effective on the first contribution, it was insignificant in the model predicting fairness evaluation. The result for SVO is consistent with the vignette result as well. Overall, the results imply that those who interacted with a low-contributor partner, those who contributed fewer points to the group account, and those who were assigned to the community study evaluated the situation as more unfair than others. In this model, the result supports my predictions for framing.

Since framing was a significant predictor in the model incorporated multiple factors, I partitioned the data by the participants' contribution level to test the specific hypotheses for negative and positive injustice experiences. As supported by the partitioned data analysis, participants in the community study did feel less guilty than participants in the stock market study when their partner contributed a lot to the group account. However, the partitioned data analysis does not support that participants in the community study did feel stronger emotional distress than participants in the stock market when interacting with a low-contributor partner. Additionally, the results from the vignette also show that participants in different conditions evaluated their partner's low contributions similarly.

Overall, the experimental results imply that the participant's anger to a low-contributor partner did not vary across different groups but, the participants' guilt for a

high-contributor partner varied across differently named studies when the data partitioned. Specifically, participants in the stock market study expressed stronger positive injustice towards their positively unjust partners than participants in the community study. Consequently, from the experimental results, I conclude that the predictive power of the framing variable is significant in positively unjust situations, but not in negatively unjust situations.

As can remembered from the vignette study, fairness evaluation was predicted by only the interaction of the framing and participants' first contribution variables. Specifically, participants in the Wall Street group evaluated fairness according to how much they gave to the group account. However, this interaction was not confirmed by the experimental data. Participants in the experimental setting did care how much they gave to the group account, how much their partner gave to the group account, and which study (stock market or community) they were assigned to. However, the relationship between framing and fairness evaluation is complex; therefore, in addition to the framing variable, the participants' own and their partner's contributions should be considered in a prediction model.

Changes in the Second Contribution. I predicted in my hypotheses, that those who experienced negative injustice would contribute less than others, and those who experienced positive injustice would contribute more than others in the second round. The results show that the fairness evaluation significantly predicts the second contribution behaviors. However, when I created a model and incorporated multiple predictors, I found that the participants' own and their partner's contributions, fairness evaluation, and the

interaction between framing and SVO variables are significant factors in predicting the changes in the second contribution.

It is expected that when participants do not know their partner, they may contribute generously to the group fund in the first round (for similar examples, see Bernold, Gsottbauer, Ackermann, et al. 2014; Brandts and Schwieren 2009; Dufwenberg et al. 2011). However, after learning their partner's contribution, the participants' subsequent contribution, the second contribution to the group account may change as response to their experience. The model combined with multiple predictors supports this idea. The model shows that the participants' own and their partner's contributions, and fairness evaluation predict the second contribution behaviors. Additionally, the model specifies that framing moderates the SVO effect on changes in the second contribution. This means that SVO was effective only in the community study, but not in the stock market study.

To be able see the changes in the second contribution as results of negative and positive injustice experiences, I partitioned the data by the partner's contribution levels. The result for framing indicates that participants in the community and stock market groups changed their second contribution similarly as response to their interaction with a high-, low-, or equal-contributor partner. I predicted that when interacting with a low-contributor partner, the community group would reduce their second contribution more than the stock market group and when interacting with a high-contributor partner, the community group would increase their second contribution less than the stock market group. The results do not support my predictions, and framing did not influence their second contribution at all.

The result from the partitioned data for SVO indicates that individualistic participants reduced their second contribution more than prosocial participants because of

their interaction with a low-contributor partner, but prosocial participants did not increase their second contribution more than individualistic participants because of their interaction with a high-contributor partner. Additionally, the interaction of SVO and framing was still significant across different groups. This indicates that SVO was a significant factor in the community group in predicting the changes in the second contribution, but not in the stock market group. Individualistic participants in the community study did change their second contribution more than prosocial participants. The difference between individualistic and prosocial participants disappeared in the stock market study. This result also confirms Bernold et al.'s research. Bernold et al (Bernold et al. 2014)'s research shows that SVO is not a significant indicator in the Wall Street group (for a one-shot public goods dilemma game).[24]

From the previous vignette study, the fairness, first contribution, and framing variables were important factors in predicting the changes in the second contribution as well as the experiment. The SVO effect was indirect (through first contribution) in the vignette, and the SVO effect was moderated by framing in the experimental study. The vignette results show that though the Wall Street frame did not lead participants to evaluate the situation as more unfair, the feelings of injustice in the Wall Street task led participants to decrease their second contribution more than other groups. This effect disappeared in the experiment, and framing influences changes in the second contribution as a moderator (through SVO). This indicates that in the experiment, only the community group

[24] The results from the vignette contradict with my experimental findings as well as Bernold et al findings. The SVO was the strongest predictor in the Wall Street task in the vignette.

individualistic participants decrease their second contribution more than prosocial participants. The experiment shows that the relationships between changes in the second contribution and SVO and framing is complex; therefore, their interaction effect should be considered for a better prediction model.

Overall, from the experimental results, I conclude that those who contributed less in the first round, those whose partners contributed more in the first round, those who evaluated the situation as fair or positively unfair, and those who were classified as individualistic participants in the community study changed their second contribution more than others.

Tendency to Change Partner. I predicted that those who experienced negative injustice would show more interests to change their partner than others, and those who experienced positive injustice would show less interests to change partner than others. The results show that the fairness evaluation significantly predicts the preference to change partner for future rounds. However, when I created a model and incorporated multiple predictors, I found that the participants' own contribution, fairness evaluation, and the interaction of SVO and fairness were important factors in predicting tendency to change partner. Additionally, I found that the partner's contributions indirectly (through fairness evaluation) predicted tendency to changes partner.

To be able see the variation in tendency to change partner as results of negative and positive injustice experiences, I partitioned the data by the partner's contribution levels. However, the result did not provide support for the multi-predictor model.

As can be remembered from the vignette, the fairness and framing variables were important factors in predicting the tendency to change partner. The vignette results show

that though the community and decision frame did not lead participants to evaluate the situation as more unfair, the feelings of injustice in the community and decision frame led participants to change their partners more than the Wall Street group. Framing influences willingness to change partners as a main factor in the experiment. I did not observe any interaction between framing and fairness in the experiment, but SVO interacts with fairness evaluation. The interaction indicates that prosocial participants who evaluated the situation as positively unfair and as fair were less likely to change their partners for future rounds.

Overall, the experimental data show that those who contributed more to the group account, those who evaluated the situation as fair or positively unfair, those how were classified as prosocial and evaluated the situation as fair or positively unfair were less likely to change their partners than others. The data do not support the predictions of that participants in the community group will be not more willing to change their partners compared to the stock market group and that individualistic participants will be not more willing to change their partners than prosocial participants. Additionally, the partner's contribution was indirectly (thorough fairness evaluation) associated with the participant's preference to change partners for future rounds.

Willingness to Share Group Bonus. I predicted that those who experienced negative injustice would share fewer bonus points with their partners than others, and those who experienced positive injustice would share more bonus points with their partners than others. The results show that the fairness evaluation significantly predicts the shared bonus points. However, when I created a model and incorporated multiple predictors, I found that the participants' own contribution, fairness evaluation, and the interaction of SVO and framing were important factors in predicting the participants' willingness to share bonus

points with partner. Additionally, I found that the partner's contributions indirectly (through fairness evaluation) predicted the shared bonus points.

To be able see variations in the shared bonus points as results of negative and positive injustice experiences, I partitioned the data by the partner's contribution levels. The result for framing indicates that participants in the community and stock market groups shared group bonus with their partners similarly as response to their interaction with a high-, low-, or equal-contributor partner. I predicted that when interacting with a low-contributor partner, the community group would give fewer points to the partner than the stock market group and when interacting with a high-contributor partner, the community group would give fewer points to the partner than the stock market group. The results do not support my predictions; framing did not influence the participants' decisions about sharing bonus points with their partner.

The result from the partitioned data for SVO indicates that when interacting with a low-contributor partner, individualistic participants shared fewer bonus points with their partners than prosocial participants, and when interacting with a high-contributor partner, individualistic participants shared fewer bonus points with their partners than prosocial participants. These results support my predictions for the SVO effect on the participants' willingness to share group bonus points with their partners.

In addition to my predictions, I also found that the interaction of SVO and framing was significant in the multi-predictor model. This indicates that SVO was a significant factor in the community group in predicting the shared bonus points with partners, but not in the stock market group. Individualistic participants in the community study did share fewer bonus points with their partners than prosocial participants in the community study.

The difference between individualistic and prosocial participants disappeared in the stock market study.

Overall, the data show that those who contributed more to the group account, those who evaluated the situation as fair or positively unfair, those how were classified as prosocial in the community group were likely to share more bonus points with their partners than others. The data do not support the prediction of that participants in the stock market group will share more bonus points than the community group. However, the data support the prediction of that prosocial participants will share more bonus points with their partners than individualistic participants.

Conclusion. Overall, fairness evaluation and subsequent behaviors are complex phenomena. For instance, the data from the experiment and vignette show that framing did not lead participants to give more or less in the first round, but what they gave to the group account in the first round influenced their fairness evaluations. When relying on a multiple-factor model in the experiment, framing was a significant predictor for fairness evaluation and led participants in the community group to justify their partner's high contribution, but did not lead participants in the stock market group to justify their partner's low contribution.

Participants in differently named conditions relied on different factors when restoring justice through different means. When changing partner, the stock market group did care about how much they contributed and their partner contributed to the group account, while the community group did only care about how much their partner contributed to the group account. Decision to increase or decrease second contribution was determined by the participants' own contribution, their partner's contribution, and the participants' SVO

classification in the community study. In the stock market study, the SVO classification did not make any difference; only the participants' own contribution and their partner's contribution were important factors in predicting changes in the second contribution. Decision to share bonus points was determined by the participants' SVO and the partner's contribution to the group account in the community study. In the stock market study, the SVO classification did not make any difference; only the partner's contribution to the group account determined the participants' decisions.

CHAPTER 9

CONCLUSION

I examined how title framing, SVO and interaction partner's contribution level alter perceptions of justice and related behaviors. Specifically, I manipulated the partner's contribution level and study (or task) name which affected participants' justice standards. I conducted two different empirical tests: vignette and experiment and used public goods settings in both studies. The necessary data were collected through a standardized questionnaire which conducted during the experiments and vignette surveys. Participants' self-reported justice evaluations for their interaction with their partner, changes in participants' second contributions, participants' allocation preferences for bonus money, and participants' preference to change their partner for future rounds were measured to test the theoretical arguments empirically.

The findings indicate that the participants' fairness evaluation influenced their subsequent behaviors. However, the title framing did not completely work the way I predicted and the results for SVO were mixed. Similar to farming analysis, some of my predictions about SVO are not supported by the data. In opposition to my predictions, title framing did not modify justice evaluations for negatively unjust conditions. The results show that the community and the stock market (or Wall Street) frames did not create different contribution expectations and thus did not alter justice evaluations.

One potential confound in this study was may have been the way participation was compensated. Previous studies show that introducing monetary consequences may lead

participants to apply a competitive frame to the decision (Biel and Thøgersen 2007; Ellingsen et al. 2012; Liberman et al. 2004; Tversky and Kahneman 1986). Although different framing encouraged participants to focus on personal or collective benefits, a strong monetary incentive (e.g. $50 Amazon.com gift card) may have eliminated framing effects in the experiment.

Different groups may have interpreted the situation differently, but the outcomes could still be the same. For instance, participants in the community group may have expected everyone to contribute a lot to the group account because it was a collective responsibility, while participants in the stock market group may have expected everyone to contribute to the group account because it was the best strategy to gain points personally.

Additionally, participants in differently named conditions may have focused on different social comparisons as predicted by my theory and different frames may have created different contribution expectations, but their perceptual and behavioral results could still be the same. For instance, if we assume that a participant contributed 10 points and his/her partner contributed 0 points to the group account, the participant in the community group may have experienced negative injustice due to his/her partner's low contribution. In other words, the partner's low contribution cannot be justified in the community group. If the same situation occurred in the stock market (or Wall Street) group, the participant may have experienced the same degree of negative injustice due to his/her own high contribution to the group account. In other words, the partner's low contribution can be justified, but his/her own high contribution cannot be justified in the stock market group. With either reason, participants in the differently named studies did not express

different feelings of injustice, but their reasoning and comparisons could still be very different from each other.

In closing, the data from the vignette and experiment supported some of my hypotheses, but also disproved some of them. One possible explanation for unsupportive outcomes can be that title framing was not very strong in the public good settings to create expected interactions. Another possible explanation for unexpected results can be that theoretical framework could not predict complex relationships. Therefore, the results suggest that future work should use different manipulations to test the hypotheses and revise theoretical framework by utilizing this research's findings.

9.1 FINDINGS AND IMPLICATIONS

In conclusion, this dissertation contributes to existing knowledge in several ways. First, I tested the effects of framing, SVO and interaction partner's contribution variables and added the effects of participants' own contribution and motivation variables, and several moderating and mediating factors into my analyses. By presenting more complicated analyses, this dissertation provided better prediction patterns of perceptions of justice and related behaviors in public goods settings.

Second, this study elaborates research on distributive justice, and explains conditions underlying various judgments about contribution and reward behaviors in terms of socially constructed frames and SVO factors. Thus, this research shows that determining a distribution of contribution and/or reward as just or unjust depends on social context which may be created through social frames as well as individual's characteristics. At the same time, this study takes into account interactions between social context and individualistic propensity in making justice judgments.

Third, this research extends distributive justice theory to the realm of social dilemmas by refining ideas from previous theories and research in more abstract ways. This refinement also allows our theory to be applied to various exchange, collective action and game settings where theoretical scope conditions are met.

Fourth, the results from the vignette and experiment show that title framing may work differently than some previous work's suggestions (e.g., Ellingsen et al. 2012; Liberman et al. 2004). For instance, title framing may not encourage high contributions for the first round, but may influence the participants' fairness evaluation and related behaviors. Title framing may not have a main effect; but a moderator effect (e.g. through SVO, contribution levels, etc.) on contribution or other related behaviors.

In addition to its intellectual contributions, this research has implications beyond scientific theory. Contribution and reward behaviors can be seen in many aspects of human interactions. For instance, research in this area can help practitioners, such as managers and policy makers, better assess and organize contribution and reward behaviors in small groups (e.g. workgroups, classrooms, charities, etc.). A better understanding of how framing can influence perceptions of justice and subsequent behaviors may provide those practitioners effective strategies to deal with conflicts resulting from unfair contribution and reward distributions in groups and an inexpensive way to improve cooperative behaviors. Moreover, the theory can be utilized to develop hypotheses in other social science areas. For instance, contribution can be operationalized as work performance or productivity in organizational justice research, or as money in economics. Similarly, rewards can take the form of promotions or commercial goods.

9.2 FUTURE RESEARCH

The findings from this dissertation and limitations suggest several ideas for future research. One extension would be using different manipulations to test the theory. Although I have partial supports for title framing in the experimental study, I did not find strong results supporting that framing created different expectations for contribution. Subsequent work may try different frames emphasizing different social comparisons.

Different measurements encouraging participants to answer reliably may also be beneficial. For instance, I found one of my items measuring participants' own fairness evaluation was highly unreliable (which was omitted from the scale used in the analyses). When I look at my data closer, I found that some participants were satisfied with their favorable outcome and evaluated the situation as fair and some participants' answers were inconsistent each other. I conclude that differently designed measurements may force participants to evaluate their own behaviors reliably, and revising measurements may provide stronger results for future research.

Finally, I only tested my theory in hypothetical and experimental public goods settings, the more real world testing may provide more support for the theory. Also, the theory developed in this dissertation can be applicable to broader context; therefore, more tests in different settings (e.g. resource management dilemma) are required.

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APPENDIX A

PILOT VIGNETTE STUDY SURVEY

Thank you for your participation. Please read the following and try to imagine yourself in the situation described. A few questions will follow.

COMMUNITY / WALL STREET/ DECISION-MAKING GAME

The Community / Wall Street / Decision-Making game consists of several joint decision-making tasks that involve decision making by a two-person group. In the Community / Wall Street / Decision-Making game, each group member must decide how to spend a pool of money that he or she has (in his or her "personal account").

The basic directions are as follows: each group member will be given $5.00 which can be kept in their personal account or contributed to the group account. Any amount that is contributed to the group account will be multiplied by 1.5. Then, the group money will be divided equally between two group members, regardless of their individual contributions to the group account.

Each group member's total earning per round will be his/her half of the earnings from the group account, plus whatever he or she did not invest (i.e., whatever is left in his or her personal account).

To better understand of how the Community / Wall Street / Decision-Making game works, consider the following four examples.

(1) Imagine one of the group members (Person A) invests $2.00, and the second group member (Person B) invests $4.00. Thus, there is $6.00 in the group account which is multiplied with 1.5

(2) to give $9.00 in the group account. Then, $9.00 gets divided into two so that A and B each get $4.50 from the group account. Person A, who invested $2.00, ends the round with $7.50 ($4.50 from the group account + $3.00 kept in the personal account). Person B, who invested $4.00, ends the round with $5.50 ($4.50 from the group account + $1.00 kept in the personal account).

(3) Imagine one of the group members (Person A) invests all of his/her $5.00, and the second group member (Person B) invests none. Thus, there is $5.00 in the group account which is multiplied with 1.5 to give $7.50 in the group account. Then, $7.50 gets divided into two so that A and B each get $3.75 from the group account. Person A, who invested $5.00, ends the round with $3.75 ($3.75 from the group account + 0 kept in the personal account). Person B, who invested none, ends the round with $8.75 ($3.75 from the group account + $5.00 kept in the personal account).

(4) Imagine both group members (Person A and Person B) invest all of their $5.00. Thus, there is $10.00 in the group account which is multiplied with 1.5 to give $15.00 in the group account. Then, $15.00 gets divided into two so that A and B each get $7.50 from the group account. Since both group members invested all of their money, both end the round with $7.50 ($7.50 from the group account + 0 kept in the personal account).

(5) Finally, imagine neither of the two group members invests in the group account. Thus, there will be no money to multiply or divide. In this situation, both group members end the round with $5.00 (0 from the group account + $5.00 kept in the personal account).

Compensation for the Community / Wall Street / Decision-Making game is based on the amount of money that each member will have in their personal account at the end of the Community / Wall Street / Decision-Making game.

Imagine that you are one of the group members randomly matched with another participant to work together. Please answer the following questions in the order in which they appear.

1. Please indicate how much of your $5.00 endowment you would contribute to the group account.

____ (anywhere from $0.00 to $5.00)

2. What do you think most people would do in the Community / Wall Street / Decision-Making game?

	Very Likely	Likely	Somewhat Likely	Undecided	Somewhat Unlikely	Unlikely	Very Unlikely
Everyone will contribute as much as they can to the group account	○	○	○	○	○	○	○
Everyone will tend to keep their money in their private accounts	○	○	○	○	○	○	○
Everyone will try to contribute as much as they expect the other group member to contribute	○	○	○	○	○	○	○

3. Imagine that the other person with whom you were paired contributed half of what you contributed to the group account in the Community / Wall Street / Decision-Making

game. How fair would you consider the other member's contribution to the group account?

Very Unfair	Unfair	Somewhat Unfair	Neutral	Somewhat Fair	Fair	Very Fair
1	2	3	4	5	6	7

4. Then imagine that you were paired with the same other group member for another round of the Community / Wall Street / Decision-Making game. Would you change your contribution for future rounds? (circle one response)

   A. Yes, I would give less B. No, I would not change C. Yes, I would give more

5. Now imagine that you had the opportunity to change your group member for another round of the Community / Wall Street / Decision-Making game. To what extent would you prefer to change group members and work with a different person for future rounds?

No Preference for Switching		Moderate Preference for Switching				Strong Preference for Switching
1	2	3	4	5	6	7

6. What do you think would explain the other person's low contributions in the Community / Wall Street / Decision-Making game?

S/he contributed little because…	Very Likely	Likely	Somewhat Likely	Undecided	Somewhat Unlikely	Unlikely	Very Unlikely
S/he was selfish	○	○	○	○	○	○	○
The Game structure led her/him to do so	○	○	○	○	○	○	○

Thank you for your participation. Please return this form to the research assistant.

APPENDIX B

VIGNETTE STUDY SURVEY

Thank you for your participation. Please read the following and try to imagine yourself in the situations described. A few questions will follow.

Imagine that you have been randomly paired with another person, whom we will refer to simply as "Other". Other is someone you do not know and that you will not knowingly meet in the future. Both you and Other will be making choices by circling either the letter A, B, or C. Your choice will determine points that your and Other will receive. Likewise, Other's choices will determine points for him/her and for you. Points have value, so the more points you receive, the better for you, and the more points for Other, the better for him/her.

Here's an example of how this task works.

	Choice		
	A	**B**	**C**
Your Points	500	500	550
Other's Points	100	500	300

In the diagram, if you chose A, you would receive 500 points and Other would receive 100 points; if you chose B, you would receive 500 points and Other 500; and if you chose C, you would receive 550 points and Other 300. So, you see that your choice influences both the number of points you receive and the number of points Other receives.

Before you begin making choices, keep in mind that there are no right or wrong answers. You may choose the option that you prefer most, whatever the reason. Also, remember that the more points you accumulate, the better for you. Likewise, the more points Other accumulates, the better for him/her.

For each of the four situations below, please circle A, B or C, depending on which column you prefer most.

①	**Choice**		
	A	**B**	**C**
Your Points	560	500	500
Other's Points	300	500	100

②	**Choice**		
	A	**B**	**C**
Your Points	480	540	480
Other's Points	80	280	480

③	**Choice**		
	A	**B**	**C**
Your Points	520	520	580
Other's Points	520	120	320

④	**Choice**		
	A	**B**	**C**
Your Points	510	560	510
Other's Points	510	300	110

Please see the next page…

THE COMMUNITY / WALL STREET / DECISION TASK

The Community / Wall Street / Decision Task involves a set of Community / Wall Street / Decision-making tasks in a two-person group. In the Community / Wall Street / Decision Task, you get to decide how to spend $10 which has been placed into your "personal account." You may choose to keep this money in your account, or to contribute some or all of it to a "group account." Any amount you and the Other contribute to the group account will be multiplied and then divided equally between the two of you, regardless of your

individual contributions to the group account. Your total earnings per round will be your half of the earnings from the group account, plus whatever amount you didn't contribute to the group account. Consider the following four examples.

Example	*Person A contributes*	*Person B contributes*	*Money in the group account*	*Person A earns*	*Person B earns*
1	**$10.00**	**$10.00**	**$30.00** (10+10) x 1.5	**$ 15.00** ($15 from group account + 0 from personal account)	**$15.00** ($15 from group account + 0 from personal account)
2	**$10.00**	**$0.00**	**$15.00** (10+0) x 1.5	**$7.50** ($7.50 from group account + 0 from personal account)	**$17.50** ($7.50 from group account + $10 from personal account)
3	**$2.00**	**$7.00**	**$13.50** (3+6) x 1.5	**$14.75** ($6.75 from group account + $8 from personal account)	**$9.75** ($6.75 from group account + $3 from personal account)
4	**$0.00**	**$0.00**	**$0.00** (0+0) x 1.5	**$10.00** (0 from group account + $10 from personal account)	**$10.00** (0 from group account + $10 from personal account)

Compensation for the Community / Wall Street / Decision Task is based on the amount of money that each member has earned at the end of the session.

Imagine that you are one of the group members randomly matched with another participant to work together. Please answer the following questions in the order in which they appear.

1. Please indicate how much of your $10.00 you would contribute to the group account.

_____ (enter an amount between $0.00 - $10.00)

2. What do you think **most people** would do in the Community / Wall Street / Decision Task?

	Very Unlikely	Unlikely	Somewhat Unlikely	Unsure	Somewhat Likely	Likely	Very Likely
contribute as much of their $10 to the group as they can	○	○	○	○	○	○	○
keep their $10 in their personal accounts	○	○	○	○	○	○	○
contribute as much of their $10 as they expect Other to contribute	○	○	○	○	○	○	○

3. Imagine that after you contribute the amount that you indicated in the first question, the Other contributes only **half** of what you contributed to the group account. How fair would you consider **the other person**'s contribution to the group account?

Very Unfair	Unfair	Somewhat Unfair	Indifferent	Somewhat Fair	Fair	Very Fair
1	2	3	4	5	6	7

4. Now imagine it is the second round of the Community / Wall Street / Decision Task. You are again paired with that same Other who contributed half of what you contributed. How much of your $10.00 will you contribute to the group account for the second round?

_____ (enter an amount from $0.00 - $10.00)

5. To what extent would the other person's low contribution in the first round influence your contribution to the group account in the second round?

Not at all Influential		Moderately Influential				Strongly Influential
1	2	3	4	5	6	7

6. Now imagine that you have the opportunity to work with someone else. To what extent would you prefer to switch group members and work with a different person for future rounds?

No Preference for New Partner		Moderate Preference for New Partner				Strong Preference for New Partner
1	2	3	4	5	6	7

7. Again, imagine that the person with whom you were paired contributed half of what you contributed. What do you think would explain the other person's low contribution in the Community / Wall Street / Decision Task?

S/he contributed little because…	Very Unlikely	Unlikely	Somewhat Unlikely	Unsure	Somewhat Likely	Likely	Very Likely
s/he was selfish	○	○	○	○	○	○	○
the nature of the task led her/him to do so	○	○	○	○	○	○	○

Thank you for your participation. Please return this form to the research assistant.

APPENDIX C

SOCIAL VALUE ORIENTATION TEST

"In this set of questions, please imagine that you have been randomly paired with another person, whom we will refer to simply as the "other." Other is someone you do not know and that you will not knowingly meet in the future. Both you and Other will be making choices by circling either the letter A, B, or C. Your own choices will produce points for yourself and Other. Likewise, Other's choice will produce points for him/her and for you. Every point has value: The more points you receive, the better for you, and the more points Other receives, the better for him/her.

Here's an example of how this task works.

	A	*B*	*C*
You get	*500*	*500*	*550*
Other gets	*100*	*500*	*300*

In this example, if you chose A) you would receive 500 points and Other would receive 100 points; if you chose B), you would receive 500 points and Other 500; and if you chose C), you would receive 550 points and Other 300. So, you see that your choice influences both the number of points you receive and the number of points the other receives. Before you begin making choices, keep in mind that there are no right or wrong answers – choose the option that you, for whatever reason, prefer most. Also, remember that the points have value: The more of them you accumulate, the better for you. Likewise, from the Other's

point of view, the more points s/he accumulates, the better for him/her. For the following questions, please choose as you see fit. Remember, there are no right or wrong answers.

For each of the nine choice situations below, please click on A, B or C, depending on which column you prefer most."

(((Next page)))

1.

	A	B	C
You get	480	540	480
Other gets	80	280	480

2.

	A	B	C
You get	560	500	500
Other gets	300	500	100

3.

	A	B	C
You get	520	520	580
Other gets	520	120	320

4.

	A	B	C
You get	500	560	490
Other gets	100	300	490

5.

	A	B	C
You get	560	500	490
Other gets	300	500	90

6.

	A	B	C
You get	500	500	570
Other gets	500	100	300

7.

	A	B	C
You get	510	560	510
Other gets	510	300	110

8.

	A	B	C
You get	550	500	500
Other gets	300	100	500

9.

	A	B	C
You get	480	490	540
Other gets	100	490	300

APPENDIX D

CONSENT FORM

"Decision/Community/ Stock Market Study"

Investigator: Hatice Atilgan, Ph.D. Candidate

Introduction and Purpose:

You are invited to participate in a research study being conducted by a researcher, Hatice Atilgan, from Department of Sociology. This study is sponsored by the Department of Sociology. The purpose of the study is to investigate how people make decisions in small groups. This form explains you what you will be asked to do if you decide to participate in this study. Please read it carefully and feel free to ask any questions you like before you make a decision about participating.

Description of Study Procedures:

During the study, you will interact with other participants using the computer. You and other participants will be required to make some decisions, and answer some questions about your experience. For each decision, you and other participants will each decide whether or not to contribute to a "joint task". The study will last approximately one hour.

As explained during the study, the compensation for this study will be based on points gained during the study. The points will be converted to raffle tickets for the chance to win a $50 Amazon.com gift card. The more points you get, the more raffle tickets you will receive. The points you and other participants earn from each joint task will differ based on your and others' decisions to contribute or not to the group account. The compensation

you receive will therefore depend on your decisions as well as the decisions of others with whom you are paired during the study. You will also earn extra credit in applicable courses. The experiment is computer mediated; thus, you will not see other participants who you work with at any point during or after study.

Risk of Participation:

Your name or other identifying information will not be used in any way in reports of the research findings. There are no known risks associated with participating in this research except a slight risk of breach of confidentiality, which remains despite steps that will be taken to protect your privacy.

Benefits of Participation:

As mentioned above, you will get a chance to receive a monetary prize ($50 Amazon.com gift card) for participation in today's study. In addition, participation in this study may qualify you for extra credit and/or research participation credit in some sociology courses you may be taking. Otherwise, taking part in this study is not likely to benefit you personally. However, this research may help us understand how people make decisions in group settings. Also, you may gain some insight into how social and behavioral research is conducted.

Cost:

There is no cost to you for participating in this research (other than your time).

Payments:

As noted above, you will be given raffle tickets for your performance at the conclusion of today's experiment. You will therefore have a chance to win a $50 gift card. The number of raffle tickets you receive depends on choices made by you and the choices of others with

whom you are paired during the study. Additionally, you may be eligible to receive extra credit for participating in this study.

Confidentiality of Records:

Participation will be confidential. A number will be assigned to each participant at the beginning of the project. This number will be used on project records rather than your name or any identifying information. Study records/data will be stored in locked filing cabinets and protected computer files at the University of South Carolina. The results of the study may be published or presented at professional meetings, but your identity will not be revealed.

Contact Persons:

For more information concerning this research, you should contact Hatice Atilgan at 803 777-3123 or akca@email.sc.edu.

Questions about your rights as a research subject are to be directed to, Lisa Marie Johnson, IRB Manager, Office of Research Compliance, University of South Carolina, 1600 Hampton Street, Suite 414D, Columbia, SC 29208, phone: (803) 777-7095 or email: LisaJ@mailbox.sc.edu. The Office of Research Compliance is an administrative office that supports the University of South Carolina Institutional Review Board (USC IRB). The Institutional Review Board consists of representatives from a variety of scientific disciplines, non-scientists, and community members for the primary purpose of protecting the rights and welfare of human subjects enrolled in research studies.

Voluntary Participation:

Participation in this study is voluntary. You are free not to participate or to withdraw at any time, for whatever reason, without negative consequences. In the event that you do

withdraw from this study, the information you have already provided will be kept in a confidential manner.

Participation is not related to regular course work and participation or withdrawal will have no impact on grades. If you are participating with the goal of earning extra credit or research credit for a class, and decide you do not wish to participate (or you decide to withdraw) your professor will provide alternative means of you satisfying this extra credit or research participation requirement.

Signatures /Dates:

I have read (or have had read to me) the contents of this consent form and have been encouraged to ask questions. I have received answers to my questions. I give my consent to participate in this study, although I have been told that I may withdraw at any time without negative consequences. I have received a copy of this form for my records and future reference.

Signature: _____

Printed Name: _____

Date: _____

Please Note: A copy of this form must be provided to you.

APPENDIX E

PROGRAM SCRIPT FOR LABORATORY EXPERIMENT

Participant ID

--

Press “Enter” to continue

((NEXT PAGE))

Participant SVO

--

Press “Enter” to continue

((NEXT PAGE))

Welcome to the “**Community/Stock Market Study**"..._

Click "Continue" when you are ready_

((NEXT PAGE))

First, we would like to ask some **background questions** about you

--continue--

((NEXT PAGE))

What is your ethnic- or race-category?

- White
- African-American
- Hispanic
- Asian-American
- Other

--continue--

((NEXT PAGE))

What is your gender?

- Male
- Female

--continue--

((NEXT PAGE))

What is your age group?

- Under 18
- Between 18-23
- Over 23

--continue--

((NEXT PAGE))

What is your academic status?

- Freshman
- Sophomore

- Junior
- Senior
- Graduate

--continue--

((NEXT PAGE))

What is your Major?

____

Press “Enter” on keyboard when you are done.

((NEXT PAGE))

Thank you for completing **the background questions** portion of **the Community/Stock Market Study.**

--continue--

((NEXT PAGE))

INSTRUCTIONS

Your compensation in today's study will partly depend on how well you read and understand the instructions. Therefore, **please read all instructions and examples carefully.**

The basic directions are as follows: The study involves deciding how to spend a personal fund (**20 points**). You will be completing this study with at least one other participant in the lab. To maintain anonymity, we will refer to this other participant as **Other**. You will

not meet Other at any time, nor will you learn any identifying information about him/her. Likewise, s/he will not learn any identifying information about you.

---Previous---Continue---

((NEXT PAGE))

The study consists of several rounds. At the start of each round, each participant (you and Other) will receive a **20-point** fund. You can contribute anywhere from **0** to **20** points of this found to a "**group account**." Any points you do not contribute to the group account will remain in your "**personal account**" for you to keep. The same goes for Other.

Anything that is contributed to the group account by you and/or Other will be multiplied by **1.5**. Then, the group points will be divided between You and Other equally, regardless of the specific amount each of you contributed to the group account.

Your total gains per round are your share of the points from the group account, plus whatever you did not contribute to the group account. The same goes for Other.

---Previous---Continue---

((NEXT PAGE))

Bonus Rounds: For some rounds, one participant from each group will be randomly chosen to distribute a **group bonus** (**10 points**). The member who has been selected to distribute the bonus will be free to keep the bonus points for his/her personal account or send any amount of them to Other.

---Previous---Continue---

((NEXT PAGE))

Compensation for the study will be based on the total number of points that each member has in their personal account at the end of the study (that is, the points that he or she keeps,

plus the points that he or she has earned from his/her share of the group accounts). The points will be converted to the **raffle tickets** to win a **$50 Amazon.com gift card**. More points provide more raffle tickets, and more raffle tickets increase your chance of winning the gift card.

Make sure you have carefully read and understand the instructions. If anything is unclear, please feel free to quietly open your door and a research assistant will be with you in a moment.

If you understand the instructions, click "Continue" and you will read over a few examples.

---Previous---Continue---

((NEXT PAGE))

Let's go over an example.

Imagine that each group member invests all **20** points. Thus, there are now **40** points in the group account. Since all investments in the group account are multiplied by **1.5**, the total points in the group account becomes **60**. Then, the group account is divided by two (half for each of the members). This results in each group member receiving **30** points. Since everyone invested all of their points to the group account, each player finishes the period with **30** points (**30** earned from the group account + **0** kept in the personal account).

If you have any questions about this example, please quietly open your door and a research assistant will be with you in a moment.

If you understand the example, click "Continue."_

---Previous---Continue---

((NEXT PAGE))

Here's another example:

Imagine that each group member invests **none** of their points. Now, there are **zero points** in the group account. Since there are no points in the group account to multiply, and no points to divide between the group members, everyone receives **20 points** for this round (**0** from the group account + **20** kept in the personal account).

If you have any questions, please quietly open your door and a research assistant will be with you in a moment.

If you understand the example, click "Continue."_

---Previous---Continue---

((NEXT PAGE))

One more example:

Imagine that one of the group members invests all **20** points, and the other group member invests **none**. Thus, there are **20** points in the group account which is multiplied by **1.5** to become **30** total points. Then, those **30** points are divided by two so that each group member receives **15** points.

The first group members who invested his/her **20** points ends the round with **15** points (**15** from the group account + **0** kept in the personal account). The second group member who invested nothing ends the round with **35** points (**15** from the group account + **20** kept in the personal account).

If you have any questions, please quietly open your door and a research assistant will be with you in a moment.

If you understand the example, click "Continue."_

---Previous---Continue---

((NEXT PAGE))

Now, we would like to ask you some questions to make sure you understand the instructions so far.

--continue--

((NEXT PAGE))

If you and Other both contribute all of your personal funds (**20** points each), then the group account will equal **40** points. After multiplying **40 x 1.5**, the group account will equal **60**. This means that each of you will receive **30** points.

- True
- False

Incorrect! When you and Other both contribute **20** points, the group account will equal **40** points. After multiplying by **1.5**, the points in the group account will be **60** points. Each of you will receive **30** points from the group account and **0** from the personal account. Please try again.

--continue--

((NEXT PAGE))

If you contribute **8** points and Other contributes **12** points, the group account will equal **20**. After multiplying by **1.5**, the group account will be **30**. This means that each of you will receive **15** points from the group account. Considering how much you and Other kept in your personal accounts, who will have a total of **27** points at the end?

- You
- Other

Incorrect! When you contribute **8** points and Other contributes **12** points, then the points in group account will be **20**. After multiplying by **1.5**, the group account will be **30**. This means that each of you will receive **15** points from the group account. Since you already have **12** points in your personal account, you will receive **27** (15 + 12) points at the end. Since Other already has **8** points in his/her personal account, s/he will receive **23** (15 + 8) points at the end. Please try again. _

--continue--

((NEXT PAGE))

If you and Other each contribute nothing to the group account, there will be no group points to share. Who will end this round with **20** points?

- You
- Other
- None of You
- Both of You

Incorrect! When both of you contribute nothing to the group account, then both of you end the round with **20** points each (i.e. your initial endowment). Please try again.

--continue--

((NEXT PAGE))

You have completed the **questions** successfully. You will now be paired with the Other participant, so that we can begin the **first round** of **the Community/Stock Market Study.**

--continue--

((NEXT PAGE))

Please decide how much to contribute to the group account and then wait for the Other's decision. As mentioned before, each participant is given a **20**-point fund.

Please indicate the exact amount (any number from **0** to **20**) you would like to contribute to the group account.

____

You have typed an invalid entry. Please enter an INTEGER between 0 and 20.

Press "Enter" on keyboard to submit.

((NEXT PAGE))

Your contribution has been entered. While you are waiting for Other's decision, we would like to ask you some questions.

--continue--

((NEXT PAGE))

To what extent were you motivated to contribute as much as you could to the group account?

Not at all Motivated | Moderately Motivated | Very Motivated

1----------2----------3----------4----------5----------6----------7

--continue--

((NEXT PAGE))

To what extent were you motivated to keep as much as possible in your personal account?

Not at all Motivated | Moderately Motivated | Very Motivated

1----------2----------3----------4----------5----------6----------7

--continue--

((NEXT PAGE))

Other's decision has been entered. Other contributed **{X-10}** (or **{X+10}** for high conditions) points, which makes the total group points equal **{X+(X-10)}** (or **{X+(X+10)}**) for high conditions). After multiplying by **1.5**, each of you will receive: **{[X+(X-10)]/2}** (or **{[X+(X+10)]/2}**) for high conditions) from the group account. Here is a summary of results and earnings for the first round:

Since You already have **{(20-X)}** points in your personal account, **your total: {(20-X) + {[X+(X-10)]/2}** (or **{{(20-X) + [X+(X+10)]/2}}**) for high conditions)

Since Other already has **{20-(X-10)}** (or **{20-(X+10)}** for high conditions) in his/her personal account, **his/her total**: **{[20-(X-10)] + {[X+(X-10)]/2}}** (or **his/her total**: **{[20-(X+10)] + {[X+(X+10)]/2}}** for high conditions).

--continue--

((NEXT PAGE))

You have completed **the first round of the Community/Stock Market Study**.

Before you continue to the next round, we would like to ask you some more questions about your experience up to this point.

--continue--

((NEXT PAGE))

We would like to know how you feel about the amount **You** contributes to the group account. Please indicate this based on the following scale. My contribution was___.

- Much too low
- Too low
- Somewhat too low
- About right
- Somewhat too high
- Too high
- Much too high

--continue--

((NEXT PAGE))

We would like to know how you feel about the amount **Other** contributes to the group account. Please indicate this based on the following scale. Other's contribution was___.

- Much too low
- Too low
- Somewhat too low
- About right
- Somewhat too high
- Too high
- Much too high

--continue--

((NEXT PAGE))

How fair was **YOUR contribution** to the group account?

- Very unfair
- Unfair
- Somewhat Unfair
- Fair

--continue--

((NEXT PAGE))

How fair was **OTHER's contribution** to the group account?

- Very unfair
- Unfair
- Somewhat Unfair
- Fair

--continue--

((NEXT PAGE))

Now you and Other have been given another **20** points each to start **the second round of the Community/Stock Market Study**. Please decide how much you would like to contribute to the group account.

____

You have typed an invalid entry. Please enter an INTEGER between 0 and 20.

Press "Enter" on keyboard when you are done4.

((NEXT PAGE))

Thank you for your submission. While you are waiting for Other's decision, we would like to ask you some more questions.

--continue--

((NEXT PAGE))

To what extent did Other's contribution in the first round influence your contribution to the group account in the second round?

Not at all Influential			Moderately Influential			Strongly Influential
1	**2**	**3**	**4**	**5**	**6**	**7**

--continue--

((NEXT PAGE))

Some participants will have the opportunity to switch his/her partner with a different one for future rounds. Please indicate to what extent you would prefer to work with a different person for future rounds.

No Preference for Switching			Moderate Preference for Switching			Strong Preference for Switching
1	**2**	**3**	**4**	**5**	**6**	**7**

--continue--

((NEXT PAGE))

Thank you for your responses. Later we will let you know if a new person becomes available and you will get to decide whether to switch at that time. For now, you will continue interacting with the same person.

--continue--

((NEXT PAGE))

As noted earlier, one participant from each group will be randomly chosen to distribute a **group bonus** for some rounds. **You** have been selected to distribute the bonus of **10** points between you and Other. You are free to keep the bonus for your personal account or share any amount (from **0** to **10** points) with Other. Other will only be informed about the bonus if you decide to share some of it with him/her. Otherwise, s/he will not be informed of it.

--continue--

((NEXT PAGE))

Please indicate the amount (any number from **0** to **10**) you would like to give to Other. Any points you not give to Other will be automatically placed in your personal account.

Bonus for **Other**:___

You have typed an invalid entry. Please enter an INTGER between 0 and 10.

Press "Enter" on your keyboard to submit your decision for **Other**

((NEXT PAGE))

- Bonus for Other: X
- Bonus for You: 10-X

--continue--

((NEXT PAGE))

While you were answering our questions, Other also finished his/her part. Other contributed **{X-1}** (or **{X+1}** for high conditions) points, which makes the total group points **{X + (X-1)}** (or **({X + (X+1)}** for high conditions). After multiplying by **1.5**, each of you

will receive **{[X+(X-1)]/2}** (or **{[X+(X+1)]/2}** for high conditions) point(s) from the group account. Since you already have **{20-X}** points in your personal account, your total will be **{{20-X} + {[X+(X-1)]/2}}** (or **{{20-X} + {[X+(X+1)]/2}}** for high conditions). Since Other already has **{20-(X-1)}** in his/her personal account, his/her total will be **{[20-(X-1)] + {[X+(X-1)]/2}}** (or **{{20-(X+1)} + {[X+(X+1)]/2}}** for high conditions).

(THEN, TABLE DISPLAY FOR SUMMARY)

--continue--

((NEXT PAGE))

You have completed **the Community/Stock Market Study.** Now we would like to ask you some final questions about the study.

--continue--

((NEXT PAGE))

Did you find anything about the procedure odd, confusing, or hard to believe?

- Yes
- No

If "yes", have your behaviors been affected?

- Yes
- No

If "yes", please explain how.

_____

Press "Enter" to continue.

((NEXT PAGE))

Do you think there may have been more to this experiment than meets the eye?

- Yes
- No

If "yes", have your behaviors been affected?

- Yes
- No

If "yes", please explain how.

_____

Press "Enter" to continue.

((NEXT PAGE))

Do you have any questions or comments about the others in the study (e.g., the person with whom you were paired)?

- Yes
- No

If "yes", please give us more detail.

_____

Press "Enter" to continue.

((NEXT PAGE))

Were you told about any of the details of this study prior to today (e.g., by other students who participated before **you**)?

- Yes
- No

If "yes", have your behaviors been affected?

- Yes
- No

If "yes", please explain how.

_____

Press "Enter" to continue.

((NEXT PAGE))

Was everything about the procedure clear and did all aspects of the procedure make sense?

- Yes
- No

If "No", please explain how.

_____

Press "Enter" to continue.

((NEXT PAGE))

People react to things in different ways and it would be very useful for our research group to know about your feelings, thoughts or reactions to the experiment. If anything comes to mind that you feel like sharing, please indicate?

_____

Press "Enter" to continue.

((NEXT PAGE))

When this study has been completed, we plan to send an email to all participants providing details about the study purpose and goals. We expect the study to take approximately 3 months to complete. In the meantime, we would greatly appreciate you not discussing this experiment with those students who have not yet participated. The reason for this is that students who are informed about the study beforehand enter the study with existing bias and preconceived expectations that have a harmful effect on the study results. We appreciate your efforts to help us gain the most from this study by keeping your participation confidential.

--continue--

((NEXT PAGE))

You have successfully completed this study. Thanks again for your participation. Please open your door and wait for the researcher.

APPENDIX F

DEBRIEFING STATEMENT

DESCRIPTION OF STUDY (Emailed to participants at conclusion of study)

Dear Mr./Ms.,

You participated in a study in the sociology laboratory between 10/17/2016 and 12/2/2016. After you were finished, we promised that we would write to you at the conclusion of the study with a fuller description of the study. This is that description.

We were interested in a number of questions we couldn't discuss with you in advance. We couldn't discuss these things in advance because it likely would have impacted your actions during the study and thus skewed the research findings.

We conducted the study to answer questions about how different types of social frames influence justice evaluations and subsequent behaviors. Thus, we were interested in comparing the behaviors of participants who were given different study titles. For instance, we wanted to compare whether people were more likely to experience stronger injustice when study is called community study versus stock market study. Whether they contribute differently across differently named studies.

There was one deceptive aspect of the study. Specifically, you were told that you were interacting with other participants. But, in reality, the other participants were simulated. By simulating other participants, we were able to more carefully look at how different types of information leads to different behaviors.

Although we stated that earnings depended on what you and others did during the study, because you were interacting with simulated others, rather than real participants, every participant was given the same opportunities to win the monetary prize. The winners were chosen through a random selection process and received a notification email.

The results of the study that you took part in suggest that people are more likely to make decision about contributing or not contributing to the group account by relying on their fairness experiences and social environment they were in. Calling a study as a community study or stock market led people to behave differently. For instance, people in the community group were more sensitive their partner's contribution compared to people in the stock market group.

We hope this clarifies the purpose of the research, and the reason we needed to use deception. Again, if you have any questions or would like more details about the study, please do not hesitate to contact me. We would be happy to answer any questions you have about the study, or to hear any comments, thoughts, or suggestions.

Finally, we would like to personally thank you for participating in the study. Only through conducting studies like this can social scientists better understand what leads to people to act morally even when they have no risk of getting caught acting immorally. For this reason, your participation was very important.

Thanks again and please let me know if you have any questions.

Sincerely,

Hatice Atilgan

PhD Candidate, University of South Carolina