SELFISH, EXCESSIVE, GREEDY: THE PSYCHOLOGICAL CAUSES AND CONSEQUENCES OF PERCEPTIONS OF GREED

by

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SIGNED: Jennifer S. Anderson
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Abstract

Perceptions of greed permeate the popular business and management environment, yet the scholarly literature in these areas has given scant attention to greed and perceptions of greed. In three laboratory studies, I investigated both the antecedents and consequences of perceived greed. Contrary to a number of literatures’ treatment of greed as simply a synonym for selfishness, I proposed that the three antecedents of perceived greed are distributive injustice, inference of a selfish motive to acquire, and relative deprivation. I then explored four key outcomes of perceived of greed: personal anger, moral outrage, punishment behaviors, and social distancing behaviors. Results demonstrated that perceptions of greed are formed when an individual experiences a distributive injustice, combined with an inference of a selfish motive to acquire, and that each of personal anger, moral outrage, punishment behaviors and social distancing are consequences of perceiving others as greedy. Relative deprivation contributed to perceptions of greed, but in a manner different from the hypothesized model.
Selfish, excessive, greedy: The psychological causes and consequences of perceptions of greed

The recessionary economic climate present in the United States for the past several years has prompted a public outlashing against perceived greed (Sarna, 2010) and dominated the business press (Anderson & Gilliland, 2014). Corporate scandals involving nearly two dozen major U.S. firms (Patsuris, 2002) have plagued a number of the nation’s commercial sectors, most notably Wall Street investment banking and other related banking sectors. Outrage at the actions of both these organizations and the individuals who helm them prompted increased press coverage of “greedy” behavior (Anderson & Gilliland, 2014) and spawned the Occupy movement. This latter phenomenon is particularly interesting in that it is one of the largest grassroots protest campaigns since demonstrations related to racial equality in the 1960’s (Walters, 2011), involving millions of citizens in over 95 cities in 82 countries (Adam, 2011). Another notable recent protest event was the 2006 nationwide (U.S.) effort protesting immigration reforms passed by the U.S. House of Representatives (Engler, 2009). This protest action also involved millions of individuals. Not surprisingly, the racial issues of the 1960’s, the social issues surrounding immigration and the economic issues driving the Occupy movement share a common theme of fairness.

These protest movements offer vivid testimony to the strength with which individuals react to injustice and perceptions of greed, yet despite this dramatic showing, the United States’ culture is conflicted on the topic of greed. Perhaps articulated best by Dr. Milton Friedman, the Nobel-prize winning economist, the notion that greed is a productive motivation benefitting society as a whole is embraced in the U.S. (Weiner, 1979). Whether considered a necessary evil or an outright crime, reactions to perceptions of greed are generally not positive.
What is currently missing from the discourse regarding greed is an understanding of the social psychological underpinnings that lead people to form perceptions of greed, as well as how these perceptions result in certain attitudes and behaviors directed at greedy others (Gilliand & Anderson, 2011). In many ways and in many contexts, it is almost taken for granted that “we know it when we see it” when it comes to greed, and that greed is a unidimensional concept synonymous with selfishness. To date the management literature has not formally addressed the antecedents and consequences of perceptions of greed (for exceptions, see Gilliand & Anderson, 2011 and Wang & Murnighan 2011) and given the association that greed has with business and managerial settings, this gap is surprising.

In an effort to shed light on our reactions to perceptions of greed, I conducted a series of studies testing a model that proposes three antecedents to perceptions of greed. These studies also tested four separate outcomes of perceptions of greed. In order to understand our reactions to perceived greed toward any target, it is important to first understand how individuals arrive at perceptions of greed, and how they treat individuals that they perceive to be greedy. This knowledge will provide a foundation for understanding the social psychological processes behind any assessment of greed and subsequent reaction to any target. The proposed antecedents are distributive injustice, inference of a selfish motive to acquire, and relative deprivation, and the four outcomes are personal anger, moral outrage, punishment behaviors, and social distancing behaviors. These studies were conducted in a laboratory setting, using a common-pool resource dilemma as the platform for exploring the relationships between the key variables. This research represents the first empirical test of how perceptions of greed are formed, as well as the first direct empirical test of how we react to others’ greedy behavior.
Understanding greed perceptions is important to both organizational behavior researchers and the larger business community. The proliferation of business scandals and public admonishment of greedy individuals, companies, and industries means that organizational behavior researchers need to understand both the social psychological bases for perceptions of greed, as well as the consequences of perceptions of greed. This research begins that investigation. The notion that greed is simply synonymous with selfishness or self-interest does little to explain why people react to perceptions of greed with denigration (Sarna, 2010) and protest (Adam, 2011). Reactions such as these are divisive; both greedy behavior and reactions to greedy behavior threaten to disrupt interpersonal relationships as well as undermine the social norms of fairness and reciprocity that benefit society as a whole.

Greed is mentioned in a wide variety of literatures, yet a coherent or even clear definition of the construct is only now being established in the scholarly literature (Gilliland & Anderson, 2011; Wang & Murnighan, 2011). In surveying these various literatures, it becomes clear that the term “greed” is used with an assumption that the word is self-evident. I agree with Davis (1959) in that any assumptions made about a construct “can be confirmed or rejected only when they have been spelled out.” (p. 280). To this end, I will briefly survey these literatures, highlighting key aspects of the use of the word greed, before defining the term for the purposes of this study and outlining a model of reactions to perceived greed.

The spiritual literature explores greed, not surprisingly, as one of the seven “deadly” sins, suggesting that the remaining six sins spring from greed, and indeed that greed is synonymous with some of the other sins such as gluttony and lust (Tickle, 2004). Here, the domain and the topic both carry a heavy emphasis on the immorality of greed.
In the political science literature, perceived greed is offered as an antecedent to feelings of grievance against state entities, which if unchecked, can lead to war and revolution (Collier, 2000). Implied in this use of the word greed is the notion that government officials are exploiting the citizens they are supposed to serve.

In its treatment of greed, the experimental economics literature also highlights the tension between exploitation and cooperation. This literature conceptualizes greed in terms of both an active behavior and a passive behavior, specifically profit maximizing and free riding behaviors respectively. Samuelson, Messick, Rutte & Wilke (1984) suggest that there are three motivational mechanisms at work when individuals are faced with a decision about the acquisition of resources: greed, fairness and a desire for efficiency in the use of resources. Wilke (1991) further refined this model to suggest that greed is the dominating motivation, attenuated by fairness and/or efficiency, and this model is supported by later empirical studies. Eek and Biel (2003) found that fairness and a desire for efficiency did constrain greedy behavior, however the process by which behavior is deemed greedy is nowhere in either their empirical studies or in the theoretical foundations that lead to their work. Further, there is a clear contrast between greed and fairness implied in Wilke’s (2001) greed-efficiency-fairness (GEF) hypothesis.

Finally, the social psychology literature also addresses the topic of greed, notably in recent years. Crossley’s (2009) investigation into reactions to social undermining includes perceived greed as an antecedent to victim’s responses to undermining, suggesting that perceptions of greed may be associated with feelings of exploitation. He defines greed as a “selfish effort” and implies that this selfish effort benefits one individual at the expense of another, as expressed by social undermining (Crossley, 2009; p. 17). Grégoire, Laufer and Tripp
(2010) examined perceived firm greed as an antecedent to customer revenge behaviors. Drawing on the larger body of customer revenge literature, they note that customers who experience an injustice and who also form blame attributions toward the organization experience a desire for revenge and engage in revenge behaviors.

It is interesting to note that in the treatment of greed in these various literatures, exploitation is implied, yet rarely expressly stated. One of the issues in distinguishing greed from selfishness may be driven by an inattention to exploitation as a specific facet of greed. Examining the use of greed in these literatures suggests that the difference between selfish behavior and greedy behavior is, at least partially, rooted in whether or not someone else loses out or is otherwise exploited (Crossley, 2009; Lupia, McCubbins & Popkin, 2000; Wang & Murnighan, 2011; Wilke, 1991). Free-riding, for example, is considered greedy in the experimental economics literature specifically because it implies that the free rider is taking advantage of others.

Webster’s defines greed as “excessive or reprehensible acquisitiveness” (1977; p. 504). The use of the word “reprehensible” suggests that a violation of moral norms accompanies the behavior. Robertson (2001) further suggests that greed is a combination of selfishness and a “moral judgment” about the acquisitive behavior (p. 5). I offer a definition of greed that is a synthesis of several themes drawn from the literatures discussed above. I define greed as a selfish motivation to acquire an unfairly excessive amount of a resource, at the expense of others. This definition touches on the themes of selfishness, acquisitive motivation, (im)morality and injustice, and exploitation, all of which are key components in the treatment of greed in other areas of research.
It is perhaps appropriate that the topic of greed is beginning to garner attention in the management literature. Currently, it is enmeshed in our perceptions of individuals, organizations, and even whole professions, such as investment banking. Leaving aside the question of whether or not greed is good, both the scholarly literature and public opinion thus far demonstrate that reactions to perceived greed are not positive. On a large scale, we see conflict, war, revolution (Collier, 2000), and protest (Adam, 2011) on a global basis. On an interpersonal scale, we see revenge and punishment behaviors (Crossley, 2009; Grégoire, Laufer & Tripp, 2010), avoidance behaviors (Crossley, 2009) and denigration (Sarna, 2010).

Building on the definition of greed as a selfish motivation to acquire an unfairly excessive amount of a resource at the expense of others, I relate the following social psychological constructs to perceptions of greed: organizational justice, inferences of ulterior (selfish) motive, and relative deprivation. In doing so, I develop a model of how perceptions of greed form. This model in turn represents the social psychological process driving four theoretically-derived outcomes: personal anger, moral outrage, punishment behaviors, and social distancing behaviors. The studies described here explore how perceptions of greed are formed and the relationship between perceptions of greed and these outcomes.
Antecedents of Perceived Greed

Distributive Justice and Perceptions of Greed

At its core, perceptions of the greedy behavior of both individuals and businesses are interpreted as an effort to acquire more of a resource than is fair. Most often, greed is associated with a desire for excessive materialistic gains, such as with money or the accumulation of valuable possessions. If a key component of greed is broadly conceptualized as an unfairly gained outcome, then organizational justice provides a relevant theoretical foundation for understanding how perceptions of greed form, specifically distributive justice. I follow Gilliland and Anderson (2011) in setting perceptions of greed within a framework of distributive (in)justice.

Organizational justice is broadly concerned with fairness in organizations. The justice literature spans almost 50 years, and as a testament to the importance of fairness to individuals, it is a robust body of literature. The origins of organizational justice lie in Adams’ (1965) equity theory, which suggests that individuals make comparisons between a ratio of their inputs to outcomes and others’ ratios of inputs to outcomes. If an individual determines that his or her own ratio is not as favorable as the ratio of another, they will perceive inequity and injustice. Equity theory became the foundation for distributive justice (Deutsch, 1975), which deals with the fairness of outcomes. Recognizing that individuals perceive fairness along a number of dimensions, the field expanded to include procedural, interpersonal and informational justice. Procedural justice refers to the fairness of the procedures used to distribute outcomes (Leventhal, 1980), interpersonal justice refers to the respect and empathy afforded to individuals in interpersonal interactions (Bies & Moag, 1986) and informational justice refers to the transparency with which information is shared with individuals (Greenberg, 1993). As greedy
behavior involves the pursuit of a materialistic outcome, perceptions of greed are most closely tied to experiences of distributive injustice.

As the foundation for distributive justice, equity theory can be conceptualized as an evaluation of comparative deservingness. Indeed, Deutsch’s (1975) distributive justice rules build on equity theory and elaborate the bases for judgments of deservingness. The first rule is taken directly from the roots of distributive justice: equity. The equity rule suggests that outcomes should correspond with inputs; for example, that bonuses should be awarded based on performance metrics achieved by the individual. The second distributive justice rule is equality, which states that outcomes should be distributed on an equal basis to everyone. A holiday bonus that is given to every employee in an organization is distributed according to the equality rule. The last rule is need. This rule states that outcomes should be distributed according to the needs of the individual. Accommodations for deaf individuals in the workplace, such as TTY telephones and interpreting services are resources that are allocated on the basis of need.

Gilliland and Anderson (2011) outline a model describing how an observed overcompensation that violates one or more of the three justice rules will be interpreted as a distributive injustice and, in turn, contribute to perceptions of greed. In a qualitative study, they found that violations of all three distributive justice rules were associated with perceptions of greed (Anderson & Gilliland, 2014). Their study asked respondents to describe situations in which the respondents themselves were greedy, and in which the respondents observed greedy behavior in others. Content analysis revealed a strong relationship between distributive injustice and perceptions of greed (Anderson & Gilliland, 2014). I support and extend their research by investigating this same relationship in a laboratory setting, which allows me to demonstrate a causal connection between distributive justice and perceptions of greed.
So far, the model proposed herein has only been tested on a limited basis, once examining the correlations between distributive injustice and perceptions of greed (Anderson & Gilliland, 2014), and once examining a causal relationship between perceived fairness and perceived firm greed (Grégoire et al., 2010). It is therefore reasonable to suspect that the causal relationship may be reversed from the one proposed here; that is, that perceptions of greed lead to perceptions of a distributive injustice. There is evidence to suggest that the direction of the relationship is in fact as proposed here. Grégoire, et al. (2010) investigated a model of customer revenge with perceptions of firm greed as a mediator between perceptions of fairness and retaliatory behaviors. They tested both causal directions of the relationship and found that unfairness led to perceptions of greed and not the other way around.

**Inference of Motive and Perceptions of Greed**

A distributive injustice is a necessary, but not sufficient condition in order to ascribe greedy behavior to an actor. The act of being greedy cannot be characterized solely as the presence of an unfair outcome; the actor must pursue the over-reward. If an individual is granted overcompensation without pursuing it, we may deem that individual lucky, and view the situation as unfair, but it is unlikely that we would perceive that individual as greedy. Gilliland and Anderson (2011) frame this motive as an attribution made by the observer of the greedy actor. They draw on attribution theory (Weiner, 1985) and outline how attributions related to locus of causality and controllability lead to judgments of responsibility for pursuing or taking an over-reward, and how attributions of stability shift perspective from that of a greedy act to that of a greedy individual or organization.

Gilliand and Anderson (2011) proposed that both the internal / external locus of causality and controllability attributions focus on attributions about the behavior of an actor, and combined
together may be interpreted as an attribution of intentionality. In a qualitative study, Anderson and Gilliland (2014) found support for the assertion that the pursuit or the taking of an unfair over-reward is a necessary condition for the formation of perceptions of greed. However, this study did not test the components of attribution theory; the focus instead was on the pursuit or taking of the over-reward as opposed to actors who were granted an over-reward without pursuing it. Similarly, Grégoire et al. (2010) demonstrate that a more general attribution of blame assigned to an organization leads to customers’ perceptions of organizational greed. This research supports the notion that perceptions of greed are associated with an attribution made by the perceiver, however there are limitations to the use of attribution theory in this context. While attributions may be conceptualized as inferences, and are based on a variety of individual and situational factors both within and external to the observer, attributions do not address the question of motive. The intentionality inherent in pursuing or taking an over-reward implies motive, and upon closer look it becomes clear that the conceptual fit of a model drawing on attributions is not ideal.

For example, locus of causality refers to either internal or external causes for behavior (Weiner, 1985). An individual whose trait personality is highly neurotic is likely to have an internal locus of causality for observed anxious behavior. In contrast, a parent pacing the floor in a children’s hospital waiting room has an external locus of causality for observed anxious behavior. Locus of causality as defined in attribution theory refers only to the location of the antecedent for observed behavior. While it may be argued that motivations in general may have an internal or an external locus, motivations are only a subset of the antecedents that may be categorized with an internal or external locus.
Gilliland and Anderson (2011) further argue that controllability attributions contribute to perceptions of greed, such that to the extent that an actor has control over the situation, they will be more likely to be perceived as greedy. While greater control may facilitate expression of greed and enhance the likelihood of the greedy actor attaining their desire, the question of motive is separate from that of control. Put another way, at issue here is the assumption that the motive to acquire is related to the controllability of the situation by the greedy actor. I propose that while controllability and the motive to acquire in excess may both impact greedy behavior, they are distinct from each other. Indeed it is possible for an actor to be quite greedy, yet have no control over the situation.

Consider an organization that has several manufacturing plants, each producing a similar range of products. One of the plant managers may lobby aggressively to produce a narrower range of products, based on the facility’s efficiency or location in the distribution channel. In increasing the production efficiency at one particular plant by reducing the number of different products manufactured, the plant manager will be much more likely to reach the performance metrics that will lead to a bonus, particularly if the change in manufacturing schedule happens after the budgeted productivity has been set at the more unfavorable mix of products for that plant. The plant manager in this situation may be attempting to “game” the system in order to increase his or her compensation. In organizations that have multiple manufacturing facilities producing the same product, however, production is typically both planned and executed on a system-wide basis. As such, the plant manager may seem greedy by lobbying for a different, more favorable production mix, but the decision will be made at the corporate level, out of control of the plant manager.
I argue that the process of motive inference provides a more parsimonious explanation for the perception that an actor is greedy. An explanation for greedy behavior that is based on attribution theory requires extending locus of causality and controllability beyond their theoretical foundations thus exposing issues with the fit of the theory to the application. Motive inference, specifically inference of ulterior motive, provides a narrow, targeted theoretical foundation that is directly applicable to the motivation to pursue an over-reward.

The study of inferring motive evolved from the study of attribution processes. Early ideas about motive inference were concerned with intentionality attributions; that is, whether or not there was any intentionality to an individual’s actions (Forguson, 1989). In other words, was a motive even present? Fein (1996) extended this to examine the role that suspicion plays in determining how individuals discern altruistic from ulterior motives in others. He hypothesized and found support for the notion that suspicion triggers a more sophisticated and nuanced attribution process, one that is focused on motive, and one that takes in both trait and situational information in formulating conclusions about an individual’s motive. Other evidence supports the view that once intentionality is determined, a secondary sense-making process occurs in an effort to determine the exact nature of the underlying motive (Vonk, 1998).

More recently, researchers have acknowledged that the inference process is not only complex, but represents a back-and-forth relationship between individual and situational factors and the development of an inference about a target individual’s motives. Whereas Fein’s (1996) suspicion-based inference mechanism is concerned with the distinction between altruistic and ulterior (selfish) motives, the multiple inference model (MIM) developed by Reeder, Vonk, Ronk, Ham, and Lawrence (2004) is concerned with the content of inferences that individuals make. Specifically, they extend Fein’s concept by proposing that once an individual infers an
ulterior motive, that the resultant nuanced attributions lead the perceiver to identify a second-order motive, based on either or both of situational factors or individual trait factors combined with an ulterior motive. They found support for the MIM in a series of studies designed to separate the determination of an altruistic or ulterior motive from the determination of a second-order motive. They specifically found that once perceivers conclude that an ulterior motive is present, they look to situational and individual trait clues to determine the second-order motive.

More evidence is provided by Hughes and Trafimow (2012), who found support for what they call a “coherence perspective of social perception” (p. 671). This perspective suggests that individuals take in information from any number of relevant sources, such as the situational context, personal history with the actor, inferred motives and the actor’s known traits among others, and combine them with intentionality inferences in determining the reasons behind observed behavior.

I follow Reeder et al.’s (2004) MIM process and Hughes and Trafimow’s (2012) notion that inferential processes are influenced by a number of simultaneously present and interactive factors. In the case of perceptions of greed, these simultaneous and interactive factors are the presence or possibility of an unfair over-reward (i.e., distributive injustice), and an inference of a selfish motive to acquire that salient over-reward. The circumstances as I have stated them are explicitly supported by the findings of Reeder et al. (2004). They found that the presence of an ulterior motive combined with the opportunity for the actor to benefit from a selected course of action, lead to an inference of a selfish motive when the actor chose to carry out that selected course of action. To state my hypothesis more clearly, I propose the following, which is illustrated in Figure 1.
Hypothesis 1: The interaction of a distributive injustice and a perceiver’s inference of an actor’s selfish motive to acquire causes perceptions of greed.

Figure 1. Antecedents to Perceptions of Greed

Relative Deprivation and Perceptions of Greed

Another feature common to the treatment of greed in several areas of both the literature and the popular vernacular is the idea that while one person or entity is pursuing an over-reward, others are losing out. Gilliland and Anderson (2013) identify this, and call out relative deprivation as an important mechanism contributing to perceptions of greed. As a construct grounded in distributive (in)justice, it is appropriate that perceptions of greed involve relative deprivation. Indeed, relative deprivation (Stouffer, Suchman, DeVinney, Star & Williams, 1949) proved to be an important foundation for the development of distributive justice as a construct (Adams, 1965; Colquitt, Greenberg & Zapata-Phelan, 2005; Homans, 1961). Despite this relationship, the conceptualization of perceptions of greed as a reaction to a distributive injustice is enhanced by integrating relative deprivation into the model.
Gilliland and Anderson (2013) theorize that inherent to the process of perceiving greedy behavior, observers are categorizing the referent greedy actor as a “have” and subsequently themselves as a “have-not”, and that it is this categorization that is related to feelings of relative deprivation. In turn, they propose that the relative deprivation experienced when an actor pursues or attains an over-reward informs perceptions of greed. I agree with this assertion and extend their work in offering a deeper examination of the theory of relative deprivation as it impacts perceptions of greed. I next present a discussion on the concept, origins and development of relative deprivation theory and argue that it is particularly relevant to understanding reactions to perceptions of greed.

There are social comparison processes embedded in many of the areas of scholarly literature that feature perceptions of greed. The use of the term greed in the political science literature specifically refers to a social comparison between the general populace and an exploitative government (Collier, 2000). Similarly, the tension between those overharvesting and those who are not as demonstrated in the experimental economics literature, is essentially a social comparison of cooperative and exploitative behaviors; that is, fairness and greed respectively (Wilke, 1991). The Grégoire et al., (2010) research study also features social comparisons; Grégoire and colleagues find that customers sharply contrast themselves with greedy organizations. Lastly, these comparisons can be seen in public discourse as well. The slogan “we are the 99%” associated with the Occupy movement explicitly pits 99% of the population, the have-nots, against the 1% who hold the majority of wealth, the have.
deprivation. More specifically, relative deprivation refers to the feelings experienced by a party that occupies or is placed in an undesirable condition, state or outcome, while relative gratification refers to the feelings that a party is experiencing when occupying or moving to a preferable condition, state or outcome. These parties are referred to as deprived and non-deprived, respectively (Davis, 1959). In order to understand how a social comparison process results in relative deprivation, some key assumptions need to be satisfied. There are three that are particularly relevant in associating relative deprivation with perceptions of greed; that one state in the dichotomy is preferred and the other is not, that individuals perceive the differences in deprivation status between themselves and others, and lastly that differences in states of deprivation will lead to differential feelings about being in that particular state.

The first is that at least one of the states in the dichotomy is considered by social consensus to be a preferred state (Davis, 1959). For example, if all of the plant managers in our fictional multi-facility organization consider higher compensation to be a preferred state, then those who receive bonuses will be the non-deprived, and those who do not receive bonuses will be deprived. The importance of money in Western society is virtually undisputed (Lea & Webley, 2006), as is the acquisition of material possessions. The mandate for profit maximization in businesses is also indicative of a culture where possession of money and other material assets is highly valued. As such, it is reasonable to conclude that individuals and entities in possession of material assets occupy the preferred state and those who do not, occupy the deprived state. I have argued thus far that perceptions of greed form when an observer notes that an actor is selfishly motivated to pursue a distributive over-reward. This pursuit places the greedy actor either in a position of seeking relative gratification, or of actually achieving it.
The next assumption that Davis (1959; p. 283) makes is that a “person experiencing *either* relative gratification or relative deprivation will also experience a feeling that his deprivation status is different from that of his peers” (emphasis in the original). Thus, *individuals who perceive their status to be the same will not experience either relative gratification or relative deprivation*. In other words, this assumption states that if two parties, the actor and the observer, are both either experiencing a preferred state or experiencing a non-preferred state, that this will not lead to experiences of relative gratification and relative deprivation.

The third assumption relevant to perceptions of greed is that if two individuals differ in their state of deprivation, that *difference in states will lead to differing feelings* in reaction to the differences in level of deprivation (Davis, 1959). Continuing with the plant manager illustration, this assumption suggests that plant managers who earn bonuses feel what Davis (1959) terms relative gratification, and thus the individual(s) who do not earn bonuses will feel relative deprivation, as their respective states are in opposition to each other. More generally, the individual who is, comparatively speaking, at a loss as a result of that comparison, will feel the relative deprivation. As above, if an actor is pursuing or achieving an over-reward, this places the actor in a position of either seeking or achieving relative gratification as compared to the observer who is not.

In terms of perceiving greedy behavior, these three assumptions together suggest that the observer feels a difference between their status and the actor’s status, that this difference is attributable to an undesirable status and a preferred status respectively, and lastly that this difference will result in relative deprivation for the observer and relative gratification for the greedy actor.
The theory of relative deprivation as outlined by Davis (1959) has been studied extensively. In their meta-analytic review, Smith and Ortiz (2002) resolve inconsistent findings in earlier research on relative deprivation by identifying the source of the inconsistency as a mismatch between the comparison group referenced in determining relative deprivation and the target of reactions to relative deprivation. Previous research sought to tie individual perceptions of relative deprivation to collective action, but this mismatch between personal and group perspectives on relative deprivation received mixed support due to both theoretical and methodological problems associated with mixing levels of analysis (Smith & Ortiz, 2002).

Smith and Ortiz (2002) subsequently articulated differing forms of social comparison relevant to relative deprivation: comparisons of individual states to that of an in-group; comparisons of individual states to that of an out-group; and comparisons of the state of one group to that of another group. In doing so, they reinforced Runciman’s (1966) bifurcation of relative deprivation into fraternal relative deprivation and egoistic relative deprivation. Fraternal relative deprivation refers to feelings of relative deprivation when it is relevant to the observer’s self-categorization within a group, or relevant to another social category that the observer perceives to experience relative deprivation (Runciman, 1966). In other words, the observer feels relative deprivation as projected to their own group membership, or on behalf of another group that they perceive to be experiencing relative deprivation. The Occupy movement represents a striking example of reactions to fraternal relative deprivation. Movement supporters categorize themselves and a large constituency of the population into “the 99%” and position this socio-economic category against “the 1%”. The guidance that Smith and Ortiz (2002) provide in terms of matching levels of analysis is supported by the collective action of movement members against the relative deprivation experienced by a socio-economic category of individuals.
In contrast, egoistic relative deprivation refers to a social comparison of oneself as an individual to either groups or to other individuals (Runciman, 1966). Egoistic relative deprivation may be experienced if an individual perceives themselves to be disadvantaged relative to peers, relative to an out-group, or relative to other individuals. Extending egoistic relative deprivation to the plant managers’ example mentioned above, one plant manager may experience egoistic relative deprivation if all of the other plant managers receive bonuses, yet they do not, or if only one of the other plant managers receives a bonus and they do not. In terms of perceptions of greed, egoistic relative deprivation suggests that these perceptions may be formed if an individual observer feels relative deprivation. Crossley’s (2009) research implies egoistic relative deprivation in that individuals’ perceptions of greed were associated with targeted social undermining behaviors from other individuals that resulted in an unfavorable position for the observer. The research by Grégiore et al.’s (2010) also implies feelings of individual customers’ egoistic relative deprivation at the hands of greedy organizations. Neither of these studies, however, explicitly incorporates the theory of relative deprivation.

In order to understand the relationship between a distributive injustice and perceptions of greed, it is important to draw on theory to account for the element of self or others losing out. I suggest that the perception of self or others losing out is a social comparison process, specifically a perception of relative deprivation. Davis (1959) explains that the greater the status difference between two parties, the greater the relative deprivation. Thus to the extent of the experienced magnitude of the difference between the two parties in a situation of relative deprivation, the greater the feeling of losing out as a result of a distributive injustice, and the stronger the perceptions of greed.
While either fraternal or egoistic relative deprivation may be associated with perceptions of greed, for the purposes of these studies, I focused on egoistic relative deprivation in reaction to another individual’s actions. In summary, I propose that the egoistic relative deprivation resulting from an actor’s pursuit of an over-reward will enhance perceptions of greed, whereas if the observer and actor are situated in similar states of deprivation, perceptions of greed will be attenuated. This relationship is presented visually in Figure 2 and formally hypothesized in Hypothesis 2.

_Hypothesis 2_: Relative deprivation (egoistic) will moderate the relationship between the interaction of a distributive injustice and an inference of a selfish motive to acquire and perceptions of greed, such that the stronger the relative deprivation, the stronger the relationship between the interaction of a distributive injustice and an inference of a selfish motive to acquire and perceptions of greed.

**Figure 2.** Moderating Influences on the Relationship Between Distributive Injustice, an Inference of a Selfish Motive to Acquire, and Perceptions of Greed
Figure 2. A schematic model depicting the role of relative deprivation in moderating the relationship between the interaction of a distributive injustice and an inference of a selfish motive to acquire, and perceptions of greed.

Taken together, these hypotheses outline a process by which perceptions of greed form. I propose that perceptions of greed are a specific form of distributive injustice, one that is accompanied by an inference of selfish ulterior motive, and further that the relationship between the distributive injustice and perceptions of greed is strengthened by relative deprivation.

In the following sections, I will discuss the theoretical connections between the antecedents of perceptions of greed and these outcomes.
Consequences of Perceived Greed

Having identified the antecedents of perceived greed, I now turn attention to the consequences that result from these perceptions. Specifically, I examine four distinct consequences: personal anger, moral outrage, punishment behaviors, and social distancing.

Personal Anger and Moral Outrage

Before proceeding, I offer brief definitions for generalized anger, personal anger, and empathic anger, in part to clarify the distinction between these forms of anger and moral outrage. Generalized anger is a negatively-valenced, approach-oriented emotion (Lerner & Keltner, 2000), which could stem from a variety of sources. Examples of sources of generalized anger include injustice and the thwarted efforts of self and others (Smith & Ellsworth, 1985). Personal anger differs from generalized anger in that the individual experiencing personal anger is directly and personally affected; that is, their own personal efforts are thwarted by circumstances or others’ efforts (Forgas & Smith, 2003). In contrast, empathic anger is characterized by anger specifically at circumstances that are disadvantageous to others (Batson, 1994).

The appraisal-theory framework for explaining emotional reactions (Scherer, 1984; Smith & Ellsworth, 1987) is helpful in understanding how individuals distinguish from the variety of foci that produce certain emotional outcomes, including anger. Briefly, the appraisal-theory perspective suggests that when emotional reactions happen, a cognitive appraisal of the circumstances that the individual is experiencing is triggered, resulting in specific reactions, such as personal anger or empathic anger. For example, in the case of perceived greed, if the observer themselves materially loses out as a result of a
greedy actor’s behavior, they are likely to experience personal anger rooted in perceptions of injustice.

Although it will be explained in further detail in the method section, the methodological design and experimental manipulations used in each of the three studies conducted as part of this investigation will result in certain individual participants receiving lower monetary payouts as a result of another’s greedy actions. As individuals experiencing a distributive injustice at the hands of another, participants would therefore be expected to experience personal anger stemming from perceptions of greed. This relationship is presented in Hypothesis 3 and visually represented in Figure 3.

Hypothesis 3: Perceptions of greed will have a positive relationship with personal anger.

Returning to the appraisal-theory mechanism for eliciting emotions, this theory suggests that moral outrage should be associated with circumstances that trigger cognitions related to morality; that is, there must be a moral standard or principle violated in the relevant situation in order for moral outrage to occur. Moral outrage is defined as the anger experienced as a result of the violation of a moral standard (Batson et al., 2007; Montada & Schneider, 1989). In order to properly define and operationalize moral outrage, it is important to distinguish it from anger in general, as well as personal anger or empathic anger (Batson et al., 2007). It is quite conceivable that an observer to a greedy act may feel both moral outrage and personal anger if they directly lose out as a
result of the greedy act (as suggested and tested in this research), or both moral outrage and empathic anger if they empathize with others who are directly losing out.

In order to link perceptions of greed to moral outrage, then, it is important to establish greed as a morally reprehensible act. While this may seem like an obvious assertion, to a certain extent, Western business culture includes an assumption that greed motivates behaviors that ultimately yield benefits to all. As mentioned earlier, this idea is perhaps best articulated by Dr. Milton Friedman (Weiner, 1979). It is, however, instructive to challenge the meaning of the word “greed” in this context.

As an economist, Friedman’s provocative use of the word “greed” in his discussion with Phil Donahue may mask another related motivation, the maximization of self-interest. The benefits derived from the maximization of self-interest were first articulated by Adam Smith (1776/1990). In *Wealth of Nations*, he describes the mechanism by which the individual pursuit of maximizing self-interest forces efficiency into the market, thereby elevating the standard of living for all members of society. As noted earlier, research generally distinguishes self-interest from greed along one important dimension: whether or not the actor focuses only on his or her own objectives, or on his or her objectives at the expense of others (Crossley, 2009; Lupia, McCubbins & Popkin, 2000; Wang & Murnighan, 2011; Wilke, 1991).

This distinction between greed and self-interest highlights the moral transgression inherent in greed. Wang and Murnighan’s (2011) statement that “a moral approach to greed focuses primarily on the conflict that greed creates between the self and others” (p. 290-291) is supported by a large amount of evidence suggesting the immoral nature of greed. This evidence comes from a variety of sources. Directly supporting the proposed
model, the justice literature has long associated unfairness with immorality on theoretical grounds (Bies, 1987; Cropanzano, Goldman & Folger, 2003), and this association is supported by empirical evidence that those who perceive justice violations react with moral outrage (Rupp & Aquino, 2009) and descriptions of immorality (Mikula, Scherer & Athenstaedt, 1998). Both spiritual and religious doctrine and scholarly research on these subjects condemn greed as an immoral act (e.g. Tickle, 2004). Lastly, our culture’s near-universal vilification of greed and greedy actors is widely evident in the popular press (Anderson & Gilliland, 2014) as well as general scholarly ruminations on the state of morality (Robertson, 2001).

Theoretical and empirical evidence suggests that the concept of greed includes a strong moral component. As such, anger experienced as a result of perceptions of greed may take the form of moral outrage. Previous research into moral outrage has yielded mixed results for a construct that has been given a lot of attention in the literature (O’Mara, Jackson, Batson & Gaertner, 2011). Specifically, distinguishing moral outrage from a broader conceptualization of anger has proven to be problematic. This research may help to clarify the relationship between moral outrage and anger, in particular personal anger. Given widespread sanctioning of both unjust and greedy behavior, it is likely that there is a positive relationship between perceptions of greed and moral outrage. This relationship is stated in Hypothesis 4 and visually represented in Figure 3.

_Hypothesis 4: Perceptions of greed will have a positive relationship with moral outrage._
Figure 3. Attitudinal Consequences of Perceptions of Greed

Punishment Behaviors

The study of punishment and revenge behaviors has a long history in both the organizational justice (Bies & Tripp, 1996) and experimental economics literatures (Chaudhuri, 2010). Webster’s (1977) defines punishment as a “…loss that serves as retribution…a penalty inflicted” (p. 936). Revenge in turn refers to an act intended to “inflict injury in return…an instance of retaliating…” for a wrongdoing (p. 991). Finally, retaliation is defined as a “repayment (as an injury) in kind” (p. 988). There is a considerable amount of overlap in these definitions that is reflected in the varied use of these three terms in various literatures (e.g., justice, Bies & Tripp, 1996; marketing, Bechwati & Morrin, 2003; experimental economics, Fehr & Gachter, 2000). Given the substantial overlap present, it is reasonable to state that for the purposes of this research
the terms punishment, revenge and retaliation are interchangeable. I will refer to this behavior as punishment.

It is useful to distinguish two types of punishment described in the literature – costly punishment and non-costly punishment. Costly punishment refers to punishment that results in a cost to the punisher, and this cost is not offset by material benefit for the punisher (Fehr & Gachter, 2002). Costly punishment is traditionally conceptualized and operationalized in monetary terms, such that the punisher literally pays to punish the transgressor. More recently, researchers have speculated that there may be other, non-monetary costs to punishers, such as reputation, or time and effort (Feinberg, Chen & Willer, 2012). Costly punishment among human beings is a widespread phenomenon, and contributes to the broader explanation for human cooperative behaviors (Henrich et al., 2006). A widely-studied example of costly punishment is the rejection of low offers in an ultimatum game. In this situation, the proposer has control of an allotment of money to be distributed between themselves and a responder. The responder in turn may either accept or reject the proposer’s offer. If the responder accepts the offer, then the proposer gives the responder the proposed amount and keeps the rest. If the responder rejects the offer, neither participant receives any of the allotment. Studies have shown that if a proposer offers such a small portion of the allotment that the responder perceives the offer to be unfair, the responder will reject the offer on the basis of unfairness (Balliet, Mulder, & Van Lange, 2011). In rejecting any low offer, the responder incurs a cost to themselves; the rational perspective would predict that responders should accept any positive sum greater than zero.
Non-costly punishment refers to punishment behavior that carries no direct cost to the punisher. Examples of non-costly punishment include reputation denigration (Piazza & Bering, 2008), surveillance or monitoring behaviors (Price, 2006), reproach (Guala, 2012) and ridicule, ostracism and gossip (Feinberg et al., 2012). Researchers have noted that non-costly punishment mechanisms are more prevalent in field situations as opposed to laboratory situations, primarily driven by practical considerations (field situations) and the absence of other means of punishment (laboratory situations; Guala, 2012). While the majority of punishment tasks designed for experiments involving social dilemmas are costly, there is mounting evidence that non-costly forms of punishment are equally if not more effective (Chaudhuri, 2010).

Recent research suggests that the relationship between the severity of a transgression and the costly nature of the resultant punishment is dependent upon a number of factors related to the perceptions and reactions of the punisher, and it is difficult to determine whether a punisher, if given a choice, would select costly or non-costly punishment in a given situation (Espin, Brañas-Garza, Herrmann, & Gamella, 2012). Other lines of research into peer punishment schemes have shown that participants are highly sensitive to the ratio of fee-to-fine in the structure of punishment options available, such that the lower the fee to fine the transgressor, the more participants are likely to punish (Casari, 2005). Decreasing requests to punish at higher levels of cost to the punisher suggests a problem with range restriction in measuring punishment behaviors.

More broadly speaking, there is ample evidence that moral violations, injustice, and more specifically greed each lead to both costly and non-costly punishment
behaviors. Darley, Carlsmith, and Robinson (2000) examined non-costly punishment behaviors in reaction to traditional moral violations such as theft, assault and even homicide, finding that participants varied criminal sentencing punishments according to the severity of the violation. Kurzban, DeScioli and O’Brien (2007), on the other hand, found evidence that individuals were willing to incur costly punishment in the form of a monetary penalty in response to violations of expected trust and reciprocal behavior.

Punishment and retaliatory behaviors have been extensively studied in the organizational justice literature (e.g., Bies & Tripp, 1996). Research in this domain shows that experiences of injustice or unfairness lead to both costly and non-costly punishment in the form of monetary penalties (e.g., Fehr & Fischbacher, 2004), rejected offers in ultimatum and other economic games of strategy (e.g., Boles, Croson & Murnighan, 2000; Camerer, 2003; Henrich et al., 2006), and retaliatory behaviors including company theft and other malicious counterproductive work behaviors (e.g., Barclay, Skarlicki & Pugh, 2005).

Lastly, insomuch as greed is a moral violation, it may be met, at least in principle, with any costly or non-costly punishment behaviors, depending on the situation. Evidence from a number of different literatures demonstrates that this is indeed the case. Crossley (2009) measured more general, unspecified retaliatory behaviors in reaction to perceptions of greed, and more specifically, Ouwerkerk, Kerr, Gallucci and van Lange (2005) were able to show that greedy behavior elicited ostracizing behaviors. In addition, Grégoire et al. (2010) studied customers’ perceptions of firm greed and found that perceptions of greed lead to a number of punishment behaviors, including complaining,
aggression toward the firm, and negative word-of-mouth spread both in person and over the internet.

I have argued here, across a number of fronts, that both costly and non-costly punishment behaviors may be expected following moral violations, perceptions of unfairness or injustice. I have chosen to focus on non-costly punishment for the purposes of these studies out of concern for the sensitivity of the ratio of fee-to-fine in driving or inhibiting punishment behaviors. By eliminating any fee-to-fine concerns, this removes a disincentive to using punishment as a response to perceptions of greed.

Given the justice antecedents to and immoral nature of greedy behavior, it is reasonable to assume that perceptions of greed will be associated with punishment behaviors. This relationship is represented in Hypothesis 5, and visually presented in Figure 4.

**Hypothesis 5:** Perceptions of greed will have a positive relationship with punishment behaviors.

**Figure 4.** Behavioral Consequences of Perceptions of Greed
Social Distancing

Social distancing, documented for centuries and observed across a wide array of species, has received concerted attention in the social psychology literature in the past 25 years (Williams, 2007). Several terms found in the literature fall under the broad category of social distancing, including ignoring, exclusion (Twenge, Catanese & Baumeister, 2002), rejection (Prinstein & Aikens, 2004), shunning and ostracism (Williams, 1997). Although subtle differences exist between some of these terms, they all refer to exclusionary behavior directed at an individual or group, share common antecedents and lead to common consequences (Robinson, O’Reilly & Wang, 2013; Williams, 2007), and therefore can be considered interchangeable. For the purposes of this research, I will refer to these behaviors as social distancing.

One of the primary motives for engaging in social distancing behavior is to use distancing as a means of socially sanctioning an actor (Robinson et al., 2013). Some of these behaviors are passive, such as ostracism, and others are more active, such as rejection. Whether passive or active, social distancing behaviors are a reaction to perceived harm to the self or a relevant group (Robinson et al., 2013). Others characterize social distancing as an interpersonal mechanism for avoiding or reducing current and future conflict (Sommer, Williams, Ciarocco & Baumeister, 2001).

Interestingly, Kramer (2001) theorizes that in addition to a perception of harm, assumptions of intentionality on the part of the actor will lead to distancing behaviors. Social distancing therefore also allows individuals to protect themselves from further
harm by isolating a transgressor who exhibits harmful intentions. Social distancing derives its effectiveness as a sanctioning mechanism from the human need for belonging (Tajfel & Turner, 1979).

An evolutionary perspective on the function of social distancing reveals the high cost of incurring it. Earlier in human history, sanctioned individuals would have been denied access to opportunities for food sharing, protection and access to reproductive mates, possibly resulting in death (Kurzban & Leary, 2001; Williams, 2007). Thus over time, the functional and adaptive nature of social distancing resulted in a high sensitivity to either actual or potential social distancing (e.g., Spoor & Williams, 2006) as a protective mechanism.

Indeed research supports the position that social distancing behaviors are an evolutionarily-adapted sanction in reaction to immoral, unfair, and exploitative behaviors. Broadly speaking, Haidt, Rosenberg and Hom (2003) have demonstrated that perceptions of moral transgressions lead to a lower desire for interaction with transgressing actors. Kurzban and Leary (2001) found that humans are evolutionarily predisposed to avoid people who do not contribute fairly in dyadic exchanges. As both a moral transgression and an act of intentional and unfair exploitative behavior, perceptions of greedy actions are likely to be met with social distancing in an effort to sanction and deter the greedy actor. This relationship is presented in Hypothesis 6 and visually in Figure 5.

_Hypothesis 6: Perceptions of greed will have a positive relationship with social distancing._
Figure 5. Further Behavioral Consequences of Perceptions of Greed

![Diagram of Figure 5](image)

Figure 5. A schematic model depicting the relationship between perceptions of greed and social distancing.

**In-group and Out-group Membership**

Social categorization and the formation of in-groups and out-groups among humans is a widespread phenomenon. Since the topic first emerged in the field of social psychology (Tajfel, 1970), research into social categorization confirms that individuals will differentially respond to in-group and out-group members along a number of dimensions (Ahmed, 2007). Interestingly, even when group formation is spontaneous, absent any interaction among group members, and lacking the dynamics normally associated with groups (Tajfel, 1978; Tajfel, Billig, Bundy & Flament, 1971), individuals have been shown to exhibit in-group preferences and out-group discrimination (e.g., Dobbs & Crano, 2001; Hertel & Kerr, 2001; Otten & Wentura, 1999; Petersen & Blank, 2003; Reynolds, Turner, Haslam, Ryan, Buzumic & Subasic, 2007). Beyond the idea that in-group members are preferred over out-group members, group membership drives differential social and psychological processes resulting from the same stimulus (e.g.,
Elder, Douglas & Sutton, 2006; Iyer, Jetten & Haslam, 2012; Novelli, Drury & Reicher, 2010). In other words, group membership may have a moderating effect on the relationships between variables, leading to differential outcomes.

In-group dynamics, even those formed on the basis of minimal categorization (Billig & Tajfel, 1973; Tajfel, 1970) include such hallmarks as intragroup preference, cooperation and cohesion (e.g., Billig & Tajfel, 1973), intragroup regulation (e.g., Benard, 2012; Levine, Lowe, Best & Heim, 2012), intragroup protection (e.g., Miller, Zielaskowski, Maner & Plant, 2012), and the maintenance of positive intragroup impressions (e.g., Iyer et al., 2012). The effort required to maintain these social processes is offset by a number of benefits associated with group membership, including a positive self-concept (Greil & Rudy, 1984), respect from the group (Lind & Tyler, 1988), self-identity enhancement (Stryker & Serpe, 1982) and psychosocial safety (Dollard & Bakker, 2010).

Because of the enhanced social connectivity and interdependence perceived and experienced by in-group members, regulatory behaviors such as norm enforcement (Benard, 2012), behavior regulation (Levine, et al., 2012), close physical and psychological distance (Turner & West, 2011) and, notably, punishment and other retributive behaviors (Iyer et al., 2012; Levine et al., 2012; Okimoto & Wenzel, 2012) are more functional and therefore more prominent on an intragroup basis than on an intergroup basis. These mechanisms serve to enforce the cooperative and associative attitudes and behaviors of in-group members, thereby maintaining the social benefits that accrue from group membership.
Out-group dynamics, on the other hand, are characterized by stigmatization (Kurzban & Leary, 2001; Swim et al., 1999), derogation (Robinson et al., 2013; Williams, 2007), and avoidance behaviors characterized by both social and physical distance (Ahmed, 2007; Elder et al., 2006; Miller et al., 2012; Novelli et al., 2010). The reasons that individuals engage in these types of negative and distancing behaviors are varied, and include self-protection, both individual (Miller et al., 2012) and group (Ahmed, 2007), identity and self-image management (Swim et al., 1999), and poor social exchanges (Kurzban & Leary, 2001).

Indeed, evidence supports the presence of differential outcomes for transgressors who have in-group status versus those who have out-group status. Gollwitzer and Keller (2010) found that in-group members were more severely punished for theft than out-group members. Notably, a number of studies demonstrate empirical support for different types of social distancing as a reaction to out-group membership. Miller et al., (2012) found that participants displayed rapid avoidance behaviors when exposed to members of an out-group in an experimental setting where group membership was manipulated. Novelli et al., (2010) found that when individuals were exposed to others belonging to a traditional out-group category (differing race), they exhibited an increased ‘personal space’ distance, but that this effect was eliminated and ‘personal space’ was significantly reduced once a minimal group categorization was implemented that included those of differing races. Lastly, Elder et al. (2006) manipulated ‘us’ versus ‘them’ language in an experimental setting and found that social distance was greater for individuals exposed to ‘them’ language than those exposed to ‘us’ language.
Taken together, these two streams of discussion suggest that in-group members who commit violations are more likely to be punished than out-group members, as a means of maintaining the cooperative and associative ties between in-group members. Similarly, out-group members who transgress are more likely to experience social distancing as a means of discouraging further contact that may be harmful to in-group members. These relationships are stated in Hypotheses 7 and 8, and visually represented in Figure 6.

**Hypothesis 7:** Group status will moderate the relationship between perceptions of greed and punishment behaviors such that in-group status will lead to a stronger relationship between perceptions of greed and punishment behaviors than out-group status.

**Hypothesis 8:** Group status will moderate the relationship between perceptions of greed and social distancing such that out-group status will lead to a stronger relationship between perceptions of greed and social distancing than in-group status.
Figure 6. Moderating Influences on Selected Behavioral Consequences of Perceptions of Greed

Figure 6. A schematic model depicting the moderating role of in-group / out-group status on the relationship between perceptions of greed and each of punishment and social distancing.

Figure 7 summarizes all of the hypothesized outcomes predicted to occur as a result of perceptions of greed in the studies included in this dissertation: personal anger, moral outrage, punishment, social distancing, and the moderating influence of group membership status on punishment and social distancing behaviors.
**Figure 7.** The Consequences of Perceptions of Greed

![Diagram of the Consequences of Perceptions of Greed]

Figure 7. A schematic model representing the full set of attitudinal and behavioral consequences of perceptions of greed. This model also depicts the moderating role that in-group / out-group status has on the relationship between perceptions of greed and the two behavioral consequences; punishment and social distancing.

**A Comprehensive Model of Perceptions of Greed and Selected Outcomes**

Figure 8 depicts all of the relationships hypothesized in this research. Owing to the complexity of the full model, the specific aims of this research and the associated constraints related to the design of the three studies, it is not possible to test this model in its entirety within the context of this research. The full model is shown here as an aid in conceptualizing the set of hypotheses presented.
**Figure 8.** The Antecedents and Consequences of Perceptions of Greed

![Diagram of relationships between distributive injustice, inference of selfish motive, perceptions of greed, personal anger and moral outrage, punishment and social distancing, and relative deprivation.]

**Figure 8.** A schematic model representing the full set of relationships hypothesized. First, that the interaction of a distributive injustice and an inference of selfish motive to acquire will lead to perceptions of greed, and be moderated by relative deprivation. Then, that perceptions of greed will be associated with personal anger and moral outrage. Further, that perceptions of greed will be associated with punishment and social distancing and that this relationship is moderated by in-group / out-group status.
General Method

Overview

As this research project explores relationships that have heretofore not been empirically tested, I chose to initially focus on the internal validity of the model as proposed. In an effort to isolate the effects of the independent variables on the dependent variables of interest, I chose a laboratory setting and have conducted a series of experiments to explore these relationships. After outlining the study setting in more general terms, I will explain each study in more detail.

Study Setting

All three studies utilized a common-pool resource (CPR) dilemma as the setting for conducting the experiments. There are several features of CPR dilemmas that are suited to exploring distributive injustice, relative deprivation, the inference of ulterior motives, and perceptions of greed. Here, I will briefly explain CPR dilemmas and those features, leaving more specific information pertinent to each individual experiment for further on in the Methods section.

A common-pool resource (CPR) dilemma consists of a group of two or more decision makers who independently and simultaneously decide how much of a resource to extract from a common pool of resources. In general terms, the amount that any one individual draws from the resource pool reduces the total amount of resources available to other individuals utilizing the pool, and thereby reduces the value of future withdrawals. Indeed, a key feature of CPR dilemmas is the condition that whatever amount of the resource is left in the pool after initial withdrawal decisions will propagate at some rate for withdrawal in the future. To the extent that the resource pool is expected to grow over time, any initial withdrawals at time $T = 0$ diminish the amount that might have been gained by leaving the pool intact.
Using the parameter values from the three studies I conducted, I will demonstrate the features of this dilemma with a specific example. Consider a situation where the initial resource pool for a two-person dilemma is set at a value of $16. Given the two-person structure, the maximum amount of the resource that each person can withdraw is set at $8, and any initial withdrawal made is kept by the person withdrawing. Any remaining amount in the pool is then multiplied by 1.5, and subsequently this new amount is split equally between the two individuals. Note that regardless of what the other person does, each individual is better off withdrawing all $8 initially, but both individuals will receive $12 if they both initially withdraw nothing. Recall that decisions are made independently and simultaneously; that is, without the ability to communicate or form binding agreements between participants. This setting is thus characterized by a tension between self-interests and the collective interests of both individuals who are eligible to draw resources from the pool.

To illustrate the tension between individual interests and community interests in more specific terms, imagine that one person withdraws $6 from the pool and the other person makes no initial withdrawal. The remaining pool of $10 will then increase to $15 and each person will receive $7.50. This results in the first person receiving a total of $13.50 and the second person receiving a total of $7.50. If both people withdraw $6 from the pool, the $4 remaining will grow to $6 and be split equally, resulting in $9 each for both. However, if both people decide to not make any initial withdrawal, the $16 pool will grow to $24, and $12 will be distributed to each person.

In this way, it is evident that the nature of the structure of CPR dilemmas results in an individual incentive to withdraw amounts from the pool that maximize individual payoffs at the expense of the collective payoff possible for all who have access to the pool. The fact that this
dilemma pits actions that are beneficial to the individual against actions that are collectively beneficial makes the CPR setting well-suited for manipulating proportionately large withdrawals that may be perceived as greedy.

This dilemma has a number of analogues in the business environment. For example, it may occur in investment partnerships where an individual investor elects to withdraw principal from a pooled investment that accrues interest, dividends, or other income earnings to the partners as a group. A partner who withdraws principal from the investment pool realizes an immediate benefit while at the same time reducing the principal upon which future earnings will grow. This impairs the ability of the remaining partners to realize future earnings.

In the studies described below, participants engaged in an experiment consisting of one round of a CPR dilemma. The initial pool amount was selected to be large enough to be a meaningful amount of money to the sample population, lending credibility to the motive to acquire and possibly enhancing perceptions of greed.
Study 1

The purpose of this study was to test both the proposed antecedents to perceptions of greed and two attitudinal outcomes in a laboratory setting where participants engaged in a common-pool resource (CPR) dilemma. This study tested Hypotheses 1, 2, 3 and 4. Hypothesis 1 states that the interaction\(^1\) of a distributive injustice and an inference of selfish motive to acquire will cause perceptions of greed. Hypothesis 2 states that relative deprivation will moderate the relationship between the interaction of a distributive injustice and an inference of a selfish motive to acquire and perceptions of greed. Hypotheses 3 and 4 state that perceptions of greed will be positively associated with both personal anger and moral outrage, respectively.

Participants

170 students from the University of Arizona general population of undergraduate students participated in this study (50% females, 50% males). Participants were paid contingent on the decision they made during the experiment and also received class credit in an amount determined by their instructors.

Design

The study employed a 2 (motive / no motive) x 2 (low / high acquisition behavior) between-subjects study design, resulting in four conditions: low acquisition behavior – no motive to acquire, low acquisition behavior – motive to acquire, high acquisition behavior – no motive to acquire, and high acquisition behavior – motive to acquire. Participants were randomly assigned to the four conditions, with 39 to 46 independent observations in each condition.

\(^1\) The use of the term “interaction” throughout the Method and Discussion sections specifically refers to a moderating relationship, rather than a purely statistical use of the term “interaction.”
Procedure and Manipulations

Procedures. Upon arrival at the laboratory, participants were told that they would be randomly paired with another person for the purposes of the study. In actuality, all participants engaged in the experiment in the same role; that is, as one of the two participants. For each focal participant, the role of the second participant was enacted by manipulating the study parameters as noted in the Design and Manipulations sections described here. Participants were escorted to individual rooms, given instructions, and then told that they would engage in a 2-person CPR experiment. Once participants made their decisions about how much to withdraw from the pool, an experimenter entered the room and calculated the participant’s final payout on a worksheet, which was left with the participant. Participants then answered a series of questions measuring their reactions to the person they thought was the other participant (referenced as the “other participant” from here onward), their own feelings, and their experiences in the laboratory session.

The initial pool available to participants for the experiment was $16. Each individual participant was able to make an initial withdrawal of any non-negative integer amount up to $8. Any remaining amount in the pool was multiplied by a factor of 1.5 and half of that amount was added to the participant’s initial withdrawal, concluding the activity.

Manipulations. The first factor manipulated in this study was distributive justice. This was manipulated through the acquisition behavior ascribed to the other participant. In the low acquisition (fair) conditions, the withdrawal of the other participant was a small amount ($2) from the pool and in the high acquisition (unfair) conditions, the amount withdrawn was the full amount possible, $8. In order to test whether participants perceived the high acquisition condition as a distributive injustice, after completing the experiment, participants were asked to
indicate the extent to which they felt that the outcome they received as a result of the experiment was fair.

The second manipulated factor was the (no) motive to acquire. In the motive-to-acquire conditions, participants were informed that the other participant in the experiment would personally make his or her decision regarding how much to withdraw from the resource pool. This was communicated both orally and in written instructions to participants.

In the no motive-to-acquire conditions, participants were informed that the amount that the other participant would withdraw would be decided by a lottery. Participants were told that the other participant would roll an eight-sided die to determine how much s/he withdrew from the pool. Participants were informed of the lottery procedure in the same manner as the motive-to-acquire condition, via both oral and written instructions for the experiment. As a manipulation check, after the experiment participants indicated whether the other participant acted with a selfish motive during the experiment.

After participants made their decisions and any payout resulting from the experiment was calculated, participants were informed of the results of the experiment and given a post-experimental questionnaire (PEQ, details following in the Measures section and in the Appendices) including measures of relative deprivation, perceptions of greed, personal anger, moral outrage, outcome fairness, the number of economics classes taken, and demographic information. The order of the measures was counterbalanced within the study. The money due to the participant as a result of the experiment was paid after the PEQ was completed and as

\footnote{Approximately one week into the study, the manipulation was subsequently enhanced by adding two features to the interaction between the experimenters and participants. First, when calculating the final payout, each experimenter specifically mentioned that the other participant rolled either an 8 or a 2, determining his/her withdrawal. Second, each experimenter carried a die into the participant’s room and set it on the table as they calculated the final payout. These changes resulted in a stronger manipulation, and the first week’s data was discarded and replaced by an additional week of data gathered to ensure there were enough participants in these conditions.}
participants exited the laboratory. The study debriefing was administered when all three studies were completed and all data collected in an effort to control subject pool contamination.

Measures

Perceptions of greed. Perceptions of greed were assessed with two measures. The first is a 4-item scale developed by Grégoire et al. (2010) to measure firm greed. This scale is reported to have acceptable reliability at $\alpha = .90$. The items from their scale were modified to refer to the other participant in the experiment rather than the firm. For example, “The firm did not intend to take advantage of me.” was modified to read “The other participant did not intend to take advantage of me.” These items were measured on a 1 (strongly disagree) to 5 (strongly agree) scale. The full text of these items is included in Appendix 1.

The second measure was developed by Anderson and Gilliland (2014) to measure perceptions of greed directly. These items were modified from the original to account for the laboratory setting. An example from the original scale states “How greedy was the [target actor]?” The three items used in this study were “How greedy was the other participant in this experiment,” “Compared to the average person, how greedy would you say the other participant was in this experiment,” and “How greedy do you think most other people would say the other participant was in this experiment?” The original items have shown an acceptable reliability of $\alpha = .78$ to .90 across multiple studies (Anderson & Gilliland, 2014). These items were rated on a 1 (not at all greedy) to 5 (very greedy) scale.

Relative deprivation. Relative deprivation was measured by both an objective and a subjective measure. The objective measure consisted of calculating the difference between the

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3 The items in the Grégoire et al. (2010) scale do not measure greedy directly; that is, the words “greed” or “greedy” do not appear in these items. Rather, the wording of these items is suggestive of aspects of greed, such as exploitation and bad intentions. As the relationship between these suggested characteristics of greed and actual perceptions of greed had not been previously established, I felt it necessary to include another measure to more directly assess perceptions of greed, as shown below.
manipulated withdrawal from the resource pool and the participant’s withdrawal from the resource pool. When the manipulated withdrawal was more than the participant’s, the participant was put in a state of relative deprivation. In the low acquisition conditions, there was the possibility for the participant to experience relative gratification if their withdrawal from the pool was larger than the manipulated amount. In order to focus this measure on the relative deprivation experienced by the participant, any relative gratification was coded as zero.

To assess subjective relative deprivation, participants were asked one question regarding their experienced relative deprivation, “To what extend do you feel as if you lost out as compared to the other participant?” This item was measured on a 1 (not at all) to 5 (a great deal) scale.

**Personal Anger.** Studies have shown that responses to unfair actions toward the self may result in personal anger, but may or may not result in moral outrage (O’Mara et al., 2011). As the setting for this study includes conditions where participants will personally experience unfair outcomes as well as potentially perceive the other participant as greedy, it is important to measure both personal anger and moral outrage, as argued above. Anger was measured using the anger subscale from the Positive and Negative Affect Scale (PANAS; Watson, Clark & Tellegen, 1988). This subscale asks participants to rate the degree to which they feel mad, irritated and angry and is measured on a 1 (do not feel at all) to 10 (feel stronger than ever have) scale. Participants completed the entire PANAS scale (see Appendix 1).

**Moral outrage.** Measuring moral outrage is problematic due to the significant amount of overlap between responses of moral outrage and responses of anger (Fehr & Fischbacher, 2004; Martin, Brickman & Murray, 1984; O’Mara, Jackson, Batson & Gaerter, 2011). It is possible that moral outrage is simply a subset of anger, and therefore difficult to separate from anger,
either conceptually or in measurements. In this study, moral outrage was assessed using two separate measures. The first is an adaptation of Beaugré’s (2012) 4-item moral outrage subscale. Moral obligation, moral accountability and moral outrage comprise Beaugré’s deontic justice scale (DJS). This scale and its component subparts have demonstrated convergent and discriminant validity, along with an acceptable reliability ($\alpha = .85$). Because the original moral outrage scale as initially written references a general concept of others, the scale items were modified to reference the participant themselves. For example, “I feel sad when I see others being unfairly treated” was modified to read “I feel sad when I see that I am being unfairly treated.”

A second measure was created for this study, and also consists of four items. An example item reads, “It makes me angry when I witness a moral violation”. Since this measure is new, analysis was conducted to ensure that the measure was a reliable indicator of moral outrage. A full list of the items in both of the measures is in Appendix 1. All items in both measures were measured on a 1 (strongly disagree) to 5 (strongly agree) scale.

**Control variable and manipulation checks.** Recent research examining attitudes toward greed suggests that individuals who have more exposure to economics education classes may have more favorable attitudes toward greedy behavior (Wang, Malhotra & Murnighan, 2011). Thus, it is reasonable to suggest that those who have taken economics classes may respond differently to a greedy actor than those who have not. In order to control for this exogenous variable, I recorded the number of economics classes participants had taken.

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4 Throughout this project, I had concerns regarding the nature of the wording in the Beaugré (2012) DJS scale; each item references fairness, sadness and concern rather than anger or outrage at a moral violation or injustice. From a conceptual standpoint, I am unsure as to whether or not this measure accurately represents a measure of moral outrage or deontic anger, despite the evidence that Beaugré (2012) presents. Therefore, in addition to administering the DJS, I administered a second measure intended to more directly probe moral outrage.
Manipulation checks for distributive injustice and inference of motive were included as well. The text for all manipulation checks and the control variable is in Appendix 1.

Results and Analyses

Preliminary analysis. I first performed several analyses to determine the data’s suitability for hypothesis testing. The first of these was a manipulation check for the (no)motive conditions, which showed significant, albeit small, differences between the motive and no-motive conditions. The mean value for the motive conditions is $M = 3.20$ and the mean value for the no motive conditions is $M = 2.44$ ($t = 3.61; p = .000$). In addition to the manipulation check, the distribution of all variables of interest for this study were examined and all showed a normal distribution.

Factor analyses were conducted for all each separate measure developed for this study, and reliability (Cronbach’s alpha) were computed for all measures used to assess the variables of interest. In addition, a confirmatory factor analysis (CFA) was performed to assess the factor structure and operationalization of all constructs and measures used in this theoretical model.

Initial factor analyses. A principal components analysis (PCA) was conducted on the perceptions of greed and the moral outrage scales developed for this study. The items in the perceptions of greed scale developed for this study loaded onto one factor, with an eigenvalue of 2.50, explaining 83% of the variance in the loadings. A similar PCA was conducted on the Grégoire et al. (2010) perceptions of greed measure, as well as a combination of the two measures of perceptions of greed. The Grégoire et al. measure loaded onto one factor (eigenvalue = 3.56) and explained 71% of the variance in loadings, and the combined measure also loaded onto one factor (eigenvalue = 5.49) but explained only 68% of the variance in the
loadings. Because the measure developed for this study explained the greatest amount of variance in perceptions of greed, it was the one retained for use in analysis.

The items in the moral outrage scale developed for this study loaded onto one factor, with an eigenvalue of 2.39 (explaining 59% of the variance in the loadings), however one of the items showed poor inter-item correlations and was dropped from the measure. The dropped item reads, “When I hear about people or organizations committing moral violations, it makes my blood boil.” Conceptually, this item is less direct than the others, an example being, “Moral violations make me angry.” This might explain the weaker factor loading. The revised, 3-item measure shows one factor, with an eigenvalue of 2.25, and explaining 75% of the variance in the loadings. Therefore, the revised, 3-item measure of moral outrage developed for this study was used in subsequent analyses.

As noted earlier, I had concerns regarding the Beaugré (2012) DJS measure. Thus, I conducted a Principal Components Analysis (PCA) on the combination of the moral outrage scale developed for this study, which included language explicitly addressing moral outrage, and the Beaugré (2012) measure. Factor analysis (PCA) of these two scales combined resulted in two factors with eigenvalues greater than one (3.27 and 2.10). Owing to the differences in wording between the two measures, and in consideration of this analysis, the Beaugré (2012) DJS scale was not used to measure moral outrage for subsequent analyses.

All scales, whether derived from previous literature, or developed for this study, demonstrated acceptable reliability. The reliability for the measure of perceptions of greed that was developed and used for this study is $\alpha = .89$. The reliability of the anger measure was $\alpha = .87$, and the reliability of the measure of moral outrage developed for this study was $\alpha = .82$. 
Confirmatory factor analysis (CFA). In addition to examining the factor structure of the measures developed for this study and conducting preliminary analyses supporting the use of the other measures, I conducted a CFA using a maximum likelihood estimation in order to examine the factor structure of the constructs as hypothesized in Study 1. Figure 9 shows the hypothesized factor structure, including latent variables (factors) and the correlations between them, and the factor loadings of scale items associated with those latent variables.

For the purposes of this analysis, the measures used for the two manipulated variables, distributive justice and an inference of a selfish motive were participants’ actual reported feelings of outcome fairness and perceptions of a selfish motive on the part of the other participant, respectively, instead of coded variables designating the manipulations.

Correlations between the constructs can, and should be considered in light of the theoretical model (Cabrera-Nguyen, 2010). For example, the strong correlation (r = .81) between an inference of motive and perceptions of greed supports the hypothesized condition that an inference of a selfish motive to acquire is necessary for perceptions of greed to form. On the other hand, the moderately strong correlation between personal anger and moral outrage (r = .61) indicates the potential for problems with discriminant validity between these two constructs.
Figure 9. Confirmatory factor analysis shows moderate to strong correlations between latent variables and generally strong factor loadings, with some exceptions as discussed below.

Goodness of fit indices demonstrate that while acceptable, the model as specified is not a strong fit ($X^2 = 100.8, df = 53; \text{GFI} = .92, \text{AGFI} = .86, \text{CFI} = .97, \text{and RMSEA} = .07$). In order for model fit to be considered strong, values for the GFI, AGFI and CFI should all be above .90,
and the RMSEA index should not be greater than .10 (Gaskin, 2011). While these indices appear to be nearly demonstrating strong results, the AGFI index and lower GFI index both suggest that further analysis should be done to examine fit. Both information in Figure 9 and further analysis demonstrates that the moral outrage measure is problematic, and this appears to be the source of the issues with fit. Two items in the moral outrage measure show weak factor loadings (JAMO2 at .65 and JAMO4 at .13) and high residual covariances between these two items and several other items (above .40) also reveal these items to be problematic from a statistical standpoint. Conceptually, the moral outrage items do not appear to address state moral outrage, rather trait or propensity for moral outrage, as the wording does not address the specific situation participants were experiencing in the experiment (see Appendix 1). For these reasons, I respecified the model, dropping the two items from the moral outrage scale that did not load strongly onto the moral outrage factor. Despite the problems inherent with a two-item measure, the respecified model does demonstrate stronger fit indices. Figure 10 shows the respecified model.
Figure 10. Confirmatory factor analysis shows moderate to strong correlations between latent variables and generally strong factor loadings, with improved fit as discussed below.

In this model, fit indices demonstrated acceptable levels across every index. The Chi-squared measure of model fit was weaker ($\chi^2 = 42.0, df = 32$), however each of the other indices shows a stronger fit. The GFI for this model is .96, the AGFI is .92, the CFI is .99 and the
RMSEA is .04. As in the original model, the correlation between the personal anger and moral outrage latent variables is moderately strong, at \( r = .64 \). Factor correlation guidelines in assessing issues of discriminant validity differ, and range from greater than or equal to \( r = .80 \) to greater than or equal to \( r = .60 \) (Cabrera-Nguyen, 2010; Gaskin, 2011, respectively). Given the trait-oriented wording of the moral outrage items, the fact that the scale has not been developed with rigorous inductive and confirmatory research, and the general conceptual overlap in anger and moral outrage (Fehr & Fischbacher, 2004; Martin, Brickman & Murray, 1984; O’Mara, Jackson, Batson & Gaerter, 2011), results related to moral outrage reported here should be interpreted cautiously.

On the other hand, information from this analysis supports strong factor loading for items in the perceptions of greed and personal anger measures, and provides additional support for the relationships hypothesized through the correlations between factors.

**Study results.** Table 1 shows the bivariate, Pearson correlations between the variables of interest. Distributive (in)justice was coded as 0/1, with zero (0) signifying a distributive injustice and one (1) signifying distributive justice. Motive was similarly coded as 0/1, with zero (0) indicating no motive and one (1) indicating motive. Since the proposed control variable, the number of Economics classes taken, was not correlated with any of the variables of interest, it was dropped from further analyses.

Table 1

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<td>.82</td>
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</table>

*Note: Numbers along the diagonal in parentheses note scale reliability (Cronbach’s alpha), where appropriate

** p < .01
**Hypothesis testing.** Hypothesis 1 states that the interaction of a distributive injustice and an inference of motive to acquire will lead to increased perceptions of greed. This hypothesis was tested using a 2 ([no]motive) x 2 (high / low acquisition behavior) between-subject analysis of variance (ANOVA) comparing perceptions of greed across the four conditions. Figure 11 presents the average greed perceptions in the four conditions.

**Figure 11.** Perceptions of Greed as a Function of Distributive Injustice and an Inference of Motive to Acquire

![Table showing average greed perceptions](image)

Results show a strong main effect of distributive justice (Cohen’s $d = 1.46$; $F(1, 168) = 40.08$, $p < .000$), a moderate main effect of motive (Cohen’s $d = .55$; $F(1, 168) = 2.95$, $p < .001$), and a significant interaction ($F(3, 166) = 44.82$, $p < .000$), also with a moderate effect size ($\eta^2 = .45$). Individuals who experience a distributive injustice are more likely to perceive an actor as greedy than those who do not ($M = 3.39$ and $M = 1.75$ for distributive injustice and distributive justice, respectively). In addition, individuals who infer a selfish motive to acquire on the part of another are more likely to perceive that person as greedy than those who do not infer this motive ($M = 2.93$ and $M = 2.19$ for motive and no motive, respectively). The significant interaction
demonstrates that those who experience a distributive injustice at the hands of an individual they perceive to have a selfish motive to acquire report the strongest perceptions of greed \( (M = 4.04) \). These results support Hypothesis 1; the interaction of a distributive injustice and an inference of a selfish motive to acquire causes perceptions of greed.

Perceptions of greed in the distributive injustice / no motive condition \( (M = 2.81) \), despite being significantly different from the distributive injustice / motive condition \( (M = 4.04) \), were stronger than anticipated. It is possible that despite the strength of the motive / no-motive manipulations, some participants were unable to separate their experience of an unfair outcome from some inference of motive. This is in spite of a possible range restriction in motive judgments related to the operationalization of the motive / no motive manipulation. For practical purposes, the manipulation was somewhat one-sided in that participants were either told that the other participant made the same choice that the focal participant did, or that the other participant’s withdrawal amount was decided by a lottery. Focal participants could have assumed a variety of motives on the part of the other participant, such as a need for some extra money. While the potential for the inference of a motive other than selfishness makes for a conservative test of Hypothesis 1, it does not help in understanding why perceptions of greed were higher when participants experienced an unfair outcome that was clearly not associated with a selfish motive on the part of the other participant. Further strengthening of the manipulation used, or structuring the experiment in a way that makes a motive, or lack thereof, more transparent may help to resolve this issue.

Hypothesis 2 proposes that relative deprivation will moderate the relationship between the interaction of a distributive injustice and an inference of motive to acquire and perceptions of greed such that the greater the relative deprivation, the stronger the relationship between the
interaction of a distributive injustice and an inference of motive to acquire and perceptions of greed. This hypothesis was tested using hierarchical multiple regression. The model depicting these relationships is duplicated in Figure 12 for reference, and results are reported in Table 2.

**Figure 12.** The Antecedents of Perceived Greed

*Figure 12.* A schematic model depicting the antecedents to perceptions of greed as introduced earlier, including distributive injustice, an inference of a selfish motive to acquire, and relative deprivation as a moderating influence.
Table 2

Hierarchical Linear Regression Analysis Predicting the Moderating Effect of Relative Deprivation on the Relationship Between Distributive Injustice and Inference of Motive to Acquire and Perceptions of Greed

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<td>-.59**</td>
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<td>Inference of Motive</td>
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</tr>
<tr>
<td>Distributive Justice</td>
<td></td>
<td>-.27**</td>
</tr>
<tr>
<td>Inference of Motive</td>
<td>.43**</td>
<td></td>
</tr>
<tr>
<td>Relative deprivation</td>
<td>.32**</td>
<td></td>
</tr>
<tr>
<td>Distributive Justice x Motive</td>
<td>.03**</td>
<td>-.32**</td>
</tr>
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<td>Step 5</td>
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<td></td>
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<tr>
<td>Distributive Justice</td>
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<td>-.29**</td>
</tr>
<tr>
<td>Inference of Motive</td>
<td>.43**</td>
<td></td>
</tr>
<tr>
<td>Relative deprivation</td>
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<td></td>
</tr>
<tr>
<td>Distributive Justice x Inference of Motive</td>
<td>-.31**</td>
<td></td>
</tr>
<tr>
<td>Distributive Justice x Inference of Motive x Relative Deprivation</td>
<td>.00</td>
<td>.04</td>
</tr>
<tr>
<td>Total R-squared</td>
<td>.52**</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td></td>
<td>170</td>
</tr>
</tbody>
</table>

**p < .01

The main effects of each of the three key variables were entered in Steps 1 through 3 respectively, and each are significant predictors of perceptions of greed in the presence of the others. The interaction of a distributive injustice and an inference of motive to acquire was entered in Step 4, and was also significant in the presence of the main effects of the three variables. The three-way interaction of distributive justice, inference of motive, and relative
deprivation\textsuperscript{5} was added in Step 5 and results indicate that there is no support for the hypothesis that relative deprivation will moderate the relationship between the interaction of distributive justice and an inference of motive to acquire and perceptions of greed. It is interesting to note that the main effect of relative deprivation is still significant in Step 5 of the regression. This indicates that relative deprivation has some role to play in influencing perceptions of greed, however its relationship to the other predictor variables in the model is not clear in this analysis.

This study also tested Hypotheses 3 and 4, which propose a positive relationship between perceptions of greed and personal anger and moral outrage, respectively. The model depicting the relationships between the variables of interest is duplicated in Figure 13 for reference.

\textbf{Figure 13.} Attitudinal Consequences of Perceptions of Greed

\begin{center}
\includegraphics[width=0.8\textwidth]{figure13.png}
\end{center}

\textit{Figure 13.} A schematic model depicting the attitudinal consequences of perceived greed as outlined, including personal anger and moral outrage.

\textsuperscript{5} The measure of relative deprivation included in Table 2 is the subjective measure, however results showed the same pattern and were similarly unsupportive when using the objective measure alone and when using a standardized combination of the two measures of relative deprivation.
As perceptions of greed were not directly manipulated, it is only possible to test correlational relationships between perceptions of greed and personal anger and moral outrage. Referring back to Table 1, the correlation between perceptions of greed and personal anger is \( r = .53 \), and the correlation between perceptions of greed and moral outrage is \( r = .41 \). Both of these correlations are significant at \( p < .000 \), supporting both Hypotheses 3 and 4; there is a positive relationship between perceptions of greed and both personal anger and moral outrage.

**Mediation analyses.** The model presented in this study suggests that perceptions of greed will mediate the relationship between the interaction of a distributive injustice and an inference of motive to acquire and each of personal anger and moral outrage. I tested these relationships using the PROCESS procedure\(^6\) (Hayes, 2013). Figure 14 depicts the relationships tested.

**Figure 14.** Perceptions of Greed as a Mediator

![Diagram](image)

*Figure 14. A schematic model depicting perceptions of greed as a mediator between the interaction of a distributive injustice and an inference of a selfish motive to acquire and each of personal anger and moral outrage.*

---

\(^6\) The PROCESS procedure (Hayes, 2013) is a path analysis technique that employs macros programmed for SPSS that can be used to analyze a wide variety of moderating, mediating and combined moderating and mediating relationships.
I tested the mediating relationship for each outcome variable (i.e. personal anger and moral outrage) separately. Simple mediation analyses using ordinary least squares path analysis demonstrates that the effect of the interaction of a distributive injustice and an inference of motive to acquire on personal anger is fully mediated by perceptions of greed. When participants experience a distributive injustice and infer a motive to acquire on the part of another related to that distributive injustice, they perceive greed ($a = -.86, p < .000$) and perceptions of greed in turn drive personal anger ($b = .76, p < .000$). A bias-corrected bootstrap confidence interval for the indirect effect ($ab = -.65$) does not include zero (-1.00 to -.37) and the direct effect of the interaction of a distributive injustice and an inference of motive to acquire on personal anger is not significant in the presence of the mediator ($c' = .21, p = .50$).

As with personal anger, the effect of the interaction of a distributive injustice and an inference of motive to acquire on moral outrage is fully mediated by perceptions of greed. The same analysis was performed with moral outrage as the dependent variable. Results indicate that when participants experience a distributive injustice and infer a motive to acquire on the part of a salient other, they perceive greed ($a = -.86, p < .000$) and perceptions of greed in turn drive moral outrage ($b = .26, p < .000$). A bias-corrected bootstrap confidence interval for the indirect effect ($ab = -.22$) does not include zero (-.36 to -.12) and the direct effect of the interaction of a distributive injustice and an inference of motive to acquire on moral outrage is not significant in the presence of the mediator ($c' = -.02, p = .89$).

As the role of relative deprivation remained uncertain at this point, I conducted further analysis to explore whether or not relative deprivation may serve as a mediator in the relationships explored in Study 1. In general terms, researchers recognize that it may be difficult to ascertain the exact nature of variables presented as either moderators or mediators (Hayes,
2013). I argued, on theoretical grounds, that relative deprivation would moderate the relationship between the interaction of a distributive injustice and an inference of a selfish motive to acquire and perceptions of greed, but this was not supported. Given its relationship with perceptions of greed, as well as with other key variables in this study, it is possible that relative deprivation may play another role in explaining how perceptions of greed form or in how perceptions of greed impact attitudinal and behavioral outcomes. Past research suggests that relative deprivation is an experience intimately tied to a distributive injustice (Colquitt et. al, 2005), so it is possible for relative deprivation to serve a mediating role in the model explored in these studies, rather than a moderating role.

As a preliminary step, I tested two initial models: a model showing that relative deprivation mediates the relationship between a motivated distributive injustice and perceptions of greed, and one showing that perceptions of greed mediate the relationship between a motivated distributive injustice and relative deprivation. Both of these models were tested using the Hayes (2013) PROCESS procedure.

Simple mediation analyses using ordinary least squares path analysis demonstrates that the effect of a motivated distributive injustice on relative deprivation is fully mediated by perceptions of greed. When participants experience a motivated distributive injustice, they perceive greed ($a = -.86, p < .000$) and perceptions of greed in turn drive relative deprivation ($b = .53, p < .000$). A bias-corrected bootstrap confidence interval for the indirect effect ($ab = -.46$) does not include zero ($-.71$ to $-.26$) and the direct effect of the motivated distributive injustice on relative deprivation is not significant in the presence of the mediator ($c' = -.12, p = .61$).

In turn, simple mediation analyses using ordinary least squares path analysis demonstrates that the effect of a motivated distributive injustice on perceptions of greed is not
mediated by relative deprivation. When participants experience a motivated distributive injustice, they experience relative deprivation \((a = -.57, p = .02)\) and relative deprivation predicts perceptions of greed \((b = .48, p < .000)\). A bias-corrected bootstrap confidence interval for the indirect effect \((ab = -.27)\) does not include zero \((- .51 to - .03)\) however the direct effect of the motivated distributive injustice on perceptions of greed remains significant in the presence of the mediator \((c' = -.59, p < .01)\).

In an effort to further understand the role of relative deprivation, I tested the possibility of serial mediation in determining anger as an outcome. I chose anger rather than moral outrage as anger presented a stronger relationship with perceptions of greed in earlier analyses. Results from prior analyses suggest that perceptions of greed mediate the relationship between a motivated distributive injustice and anger, and that perceptions of greed mediate the relationship between a motivated distributive injustice and relative deprivation. Thus, I tested a model of serial mediation as depicted in Figure 15.

**Figure 15.** Serial Mediation in Determining Anger Responses

Figure 15. A schematic model that depicts perceptions of greed and relative deprivation, respectively, serially mediating the relationship between a motivated distributive injustice and anger.
Serial mediation analyses using ordinary least squares path analysis demonstrates that the effect of a motivated distributive injustice on anger is partially mediated by perceptions of greed and relative deprivation in that sequence. When participants experience a motivated distributive injustice, they experience perceptions of greed ($a_1 = -.86, p < .001$) and perceptions of greed predict relative deprivation ($d_{12} = .53, p < .000$). Relative deprivation in turn predicts anger ($b_2 = .64, p < .000$). The direct effect of the motivated distributive injustice on anger is not significant in the presence of the mediators ($c' = .28, p = .30$). The bias-corrected bootstrap confidence interval for the indirect effect ($a_1 \cdot d_{12} \cdot b_2 = -.29$) does not include zero (-.55 to -.16). In and of itself, however, this information does not confirm full mediation in the sequence presented. Ideally, each of paths $a_2$ and $b_1$ would need to be non-significant in order to demonstrate full serial mediation. In this case, the path $a_2$ is not significant ($a_2 = -.12, p = .61$), however the path $b_1$ remains significant ($b_1 = .42, p < .000$), suggesting partial serial mediation.

In order to reinforce the sequence as modeled, the same analysis was performed with the sequence of the mediators switched; that is, with relative deprivation as the first mediator in sequence, and perceptions of greed as the second. Each of the indirect paths ($a_1, a_2, b_1, b_2$ and $d_{12}$) demonstrated significance while the direct path ($c'$) was non-significant, supporting both relative deprivation and perceptions of greed as mediators, but leaving no suggestion as to the sequence of the two.
Study 2

This study examines punishment reactions\textsuperscript{7} to perceptions of greed in a laboratory study using the same common-pool resource dilemma (CPR) experiment as in Study 1. This study tested Hypotheses 5 and 7. Hypothesis 5 states that perceptions of greed will have a positive relationship with punishment behaviors. Hypothesis 7 states that group status will moderate this relationship such that the relationship between perceptions of greed and punishment will be stronger for in-group members than for out-group members. In other words, greedy behavior by an in-group member will result in more severe punishment than the same behavior from an out-group member.

Participants

174 participants (61% males, 39% females) drawn from the University of Arizona general population of undergraduates participated in this study. Participants were paid contingent on the decision they made during the experiment and some also received class credit in an amount determined by their instructors. None of the participants in Study 2 participated in Study 1.

Design

Since the results of Study 1 demonstrated that the strongest perceptions of greed were associated with an inference of motive to acquire, the motive to acquire / no motive to acquire manipulation was eliminated and all conditions for Study 2 were “motive” conditions. The distributive justice manipulation was maintained, however. This study included one additional manipulation, for the in-group / out-group membership of the “other participant”, resulting in

\textsuperscript{7} Due to the potential for confounding if both behavioral measures were investigated in the same study, separate studies were developed assessing punishment behaviors (Study 2) and social distancing behaviors (Study 3). It is conceivable that participants may engage in social distancing behaviors not as a reaction to perceptions of greed, but to the opportunity (whether taken or not) to punish the other participant in the experiment.
four experimental conditions: high acquisition – in-group status, high acquisition – out-group status, low acquisition – in-group status, and low acquisition – out-group status. Participants were randomly assigned to conditions, with 40 to 47 observations in each condition.

**Procedures and Manipulation**

Participants engaged in a 2-person CPR experiment in a laboratory setting just as described in Study 1. Focal participants were told that they would be paired with another participant, but in actuality, the other participant was represented behaviorally by the manipulated acquisition behavior. All participants in Study 2 engaged in the CPR experiment in the same role.

**Procedures.** The procedures for the CPR experiment in Study 2 were identical to those in Study 1 with the following exceptions. An in-group / out-group manipulation was conducted prior to the start of the CPR experiment, and an unannounced punishment stage followed the CPR experiment.

**Manipulation.** The in-group / out-group manipulations were administered during the initial instructions that participants were given prior to engaging in the CPR experiment. These manipulations are intended to position focal participants and their perceived other partner in the experiment into either the same group (in-group condition) or into different groups (out-group condition).

The in-group manipulation was conducted as follows. As participants entered the lobby of the laboratory, they were encouraged to physically gather together in a small group and informed that the experiment they were about to participate in would make more sense to them if they understood that they had all been designated as members of one group for the purposes of their particular session. In approximately half of the experiment sessions in Study 2, participants
were told that they were all members of group G. In the rest of the experiment sessions, participants were told that they were members of group X. Two different letter designations were used in an effort to mask the extent of the manipulations should participants from different sessions speak to one another about their participation. Verbal instructions given at the beginning of the lab session included associating the letter G (or X) with a color or pop culture reference (i.e. “G for green” and “X for X-Men” respectively). Participants were told that they would be paired with someone else from group G (or X) for the experiment. In addition, all documentation that participants saw and worked with during the experiment was labeled with the appropriate letter (G or X). This included experiment instructions and logistical documents, task sheets, the PEQ, and the payout calculation worksheets.

The out-group manipulation was accomplished by grouping participants into two groups as they entered the laboratory lobby. Groups were physically separated from each other in the lobby area and a specific research assistant was assigned to their group (e.g. “Group A will be working with Julia and Group B will be working with John”). Participants were designated as either members of Group A or of Group B in all of the out-group sessions. The positioning of groups A and B as distinct groups was reinforced by telling participants that they would be randomly assigned to a person from the other group for the experiment (i.e. “Someone from Group A will be randomly paired with someone from Group B once everyone is settled into their rooms”). As with the case in the in-group conditions, all experimental documentation was labeled with either Group A or Group B, and participants were placed in rooms designated as “Group A rooms” and “Group B rooms.” In practical terms however, all participants were “participant A” and the role of “participant B” was enacted through the study’s acquisition manipulation.
The in-group / out-group manipulation was checked by asking participants to report his or her group designation and was included in the study PEQ. Note that this check is not intended to measure the strength of group (dis)identification or membership, as the basis for the manipulation was a minimal group paradigm design rather than a richer set of interconnected activities designed to promote stronger feelings of group membership. A manipulation check after the first week of Study 2 indicated that the manipulation was working as planned.

**Punishment task.** Immediately after the CPR experiment was over and participants’ payouts had been calculated for them, participants were told that they would have the opportunity to punish the other participant in the experiment. This opportunity to punish was not announced to participants ahead of time. Participants were given written instructions on the punishment task, and time to decide whether or not to punish the other participant.

**Measures**

**Punishment.** Punishment was measured by participants’ responses to a non-costly, monetary punishment task. Participants were given the opportunity to dock between $0 and $3 from the other participant’s payout, at no cost to the participant themselves. This created a 4-point measure for punishment behavior. The full text of this measure is in Appendix 2.

**Study variables.** Measures for perceptions of greed and the number of economics classes taken are in Appendix 1. A manipulation check to test the group membership manipulation was included in this study, the full text of which is in Appendix 2.

**Results and Analyses**

**Preliminary analyses.** Before conducting hypothesis testing, the manipulations were checked and the distribution of variables was assessed. The manipulation check demonstrated that the in-group / out-group designations were successful. Recall that groups were designated
with letters, so that participants could identify themselves with a group easily. Participants reported their group designation (A, B, G or X) as part of the PEQ, which included a series of letters from which to choose. The percentage of participants reporting the correct group for in-group sessions was 100%. The percentage of participants in the out-group sessions reporting the correct group designation were 100% for A group members and 100% for B group members. In addition, the variables for perceptions of greed, punishment behaviors and the number of economics classes were all normally distributed.

The reliability of the perceptions of greed measure developed for these studies was tested, resulting in a Cronbach’s alpha of $\alpha = .89$. Group membership was coded 0/1 with zero (0) indicating out-group membership and one (1) indicating in-group membership. In addition, Table 3 presents the bivariate, Pearson correlations between the variables of interest for this study.

Table 3

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Perceptions of Greed</td>
<td>2.65</td>
<td>1.38</td>
<td>.89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Punishment</td>
<td>2.01</td>
<td>1.29</td>
<td>.44**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Group Membership</td>
<td></td>
<td></td>
<td>.03</td>
<td>.15*</td>
<td></td>
</tr>
<tr>
<td>No. of Economics classes taken</td>
<td>1.79</td>
<td>1.13</td>
<td>.14</td>
<td>.05</td>
<td>.00</td>
</tr>
</tbody>
</table>

Note: Numbers along the diagonal in parentheses note scale reliability (Cronbach’s alpha), where appropriate. **p < .01. * p < .05.

Since the control variable, the number of Economics classes taken, was not correlated with any of the variables of interest, it was dropped from further analysis.

Hypothesis testing. This study tests Hypotheses 5 and 7. Hypothesis 5 states that there will be a positive relationship between perceptions of greed and punishment behaviors. Note that Hypothesis 5 is phrased in correlational terms rather than causal terms. As I was unable to
directly manipulate perceptions of greed in this study, it is not possible to test causal relationships. However, it is possible to test whether or not perceptions of greed are related to punishment behaviors. Hypothesis 7 states that group membership status will moderate the relationship between perceptions of greed and punishment behaviors such that greedy actor in-group status will lead to a stronger relationship between perceptions of greed and punishment behaviors than greedy actor out-group status. The model depicting the relationships between the variables of interest is duplicated in Figure 16 for reference.

**Figure 16. Behavioral Consequences of Perceptions of Greed**

Since the control variable, the number of Economics classes taken, was not correlated with the variables of interest, Hypothesis 5 was tested using the bivariate, Pearson correlation
between perceptions of greed and punishment behaviors. This correlation is $r = .44$ and is significant at $p < .000$, supporting Hypothesis 5.

The study design used to test Hypothesis 7 is a 2 (high / low acquisition behavior) x 2 (in / out group membership) between-subject design. Hypothesis 7, however, proposes that perceptions of greed, not distributive (in)justices (here, acquisition behavior), are associated with greater punishment behaviors toward in-group members than toward out-group members. In order to fully understand whether or not perceptions of greed affect punishment behaviors differentially based on group membership, it must first be established that distributive injustices generate significantly stronger perceptions of greed than distributive justices across in-group and out-group conditions. Recall that for this study, the (no) motive conditions from Study 1 were eliminated and all conditions were “motive” conditions. Figure 17 presents perceptions of greed across the four conditions.

**Figure 17.** Perceptions of Greed Among In-group and Between Out-group Members

<table>
<thead>
<tr>
<th>Distributive Injustice</th>
<th>In-Group</th>
<th>Out-Group</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.73</td>
<td>3.63</td>
<td>M = 3.68</td>
</tr>
<tr>
<td>n = 47</td>
<td></td>
<td>n = 41</td>
<td></td>
</tr>
<tr>
<td>Distributive Justice</td>
<td>1.63</td>
<td>1.56</td>
<td>M = 1.59</td>
</tr>
<tr>
<td>n = 46</td>
<td></td>
<td>n = 40</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.69</td>
<td>2.61</td>
<td>M = 2.65</td>
</tr>
</tbody>
</table>

**Figure 17.** A model depicting the main and interactive effects of distributive (in)justice and in-group and out-group status on perceptions of greed.

Results show a strong main effect of distributive justice ($M = 3.68$ and $M = 1.59$ for distributive injustice and distributive justice respectively; Cohen’s $d = 2.33$; $F (1, 172) = 31.11,$
p < .000) on perceptions of greed, but no main effect of group membership on perceptions of greed (M = 2.69 and M = 2.61 for in-group and out-group membership, respectively; Cohen’s d = .06; (F (1, 172) = .08, p = .70)). Additionally, there is no difference in perceptions of greed among in-group members and between out-group members (M = 3.73 and M = 3.63 for in-group members and out-group members, respectively; (F (1, 86) = .72, p = .69)) who experience a distributive injustice. Having established that in-group and out-group members perceive greed to the same extent according to whether they experience an injustice or not, the question now is whether or not these perceptions differentially lead to punishment behaviors based on group membership. Figure 18 presents the average measure of punishment for each condition.

**Figure 18.** Punishment Behavior Among In-Group and Between Out-Group Members

<table>
<thead>
<tr>
<th></th>
<th>In-Group</th>
<th>Out-Group</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distributive Injustice</td>
<td>2.91</td>
<td>2.05</td>
<td>2.51</td>
</tr>
<tr>
<td></td>
<td>n = 47</td>
<td>n = 41</td>
<td></td>
</tr>
<tr>
<td>Distributive Justice</td>
<td>1.46</td>
<td>1.55</td>
<td>1.50</td>
</tr>
<tr>
<td></td>
<td>n = 46</td>
<td>n = 40</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M = 2.19</td>
<td>M = 1.80</td>
<td>M = 2.01</td>
</tr>
</tbody>
</table>

*Figure 18. A model depicting the main and interactive effects of distributive (in)justice and in-group and out-group status on punishment behavior.*

These results exhibit a strong main effect of distributive justice (M = 2.51 and M = 1.50 for distributive injustice and distributive justice, respectively; Cohen’s d = .86; (F (1, 172) = 74.95, p < .000)), a significant and moderate main effect of group membership (M = 2.19 and M = 1.80 for in-group and out-group membership respectively; Cohen’s d = .30; (F (1, 172) = 6.05, p = .05)), and a significant and moderate interaction between the two terms (η² = .21; F (3, 170)
In general terms, individuals who experience a distributive injustice are more likely to punish others than those who experience a distributive justice. Participants also seem more likely to punish in-group members than out-group members on an overall basis, although this finding was only marginally significant. The significant interaction between distributive justice and group membership demonstrates that despite equivalent perceptions of greed (see Figure 15), participants are significantly more likely to punish in-group greedy actors than out-group greedy actors, supporting Hypothesis 7. In terms of actual dollars docked from the other participant’s payout, those punishing in-group members docked nearly twice as much (M = $1.91) as out-group members (M = $1.05). The maximum amount that participants could dock was $3.

In addition to a 2 (high / low acquisition behavior) x 2 (in / out group membership) ANOVA, I performed regression analysis with perceptions of greed, group membership and an interaction term as independent variables predicting punishment behavior. Results of the regression analysis demonstrate the same pattern as in the ANOVA. There is a main effect of perceptions of greed (β = .44, p < .000), a marginally significant main effect of group membership (β = .14, p = .04) and a significant interaction between the two variables (β = .40, p = .02). When all terms are entered into the regression equation, the main effect of group membership loses significance (β = -.17, p = .24). These results also support Hypothesis 7, the results of which are included in Table 4.
Table 4

Hierarchical Linear Regression Analysis Predicting the Moderating Effect of Group Membership on the Relationship Between Perceptions of Greed and Punishment

<table>
<thead>
<tr>
<th>Predictor</th>
<th>ΔR-squared</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 Perceptions of Greed</td>
<td>.19**</td>
<td>.44**</td>
</tr>
<tr>
<td>Step 2 Perceptions of Greed</td>
<td>.43**</td>
<td></td>
</tr>
<tr>
<td>Group Membership</td>
<td>.02*</td>
<td>.14*</td>
</tr>
<tr>
<td>Step 3 Perceptions of Greed</td>
<td>.26*</td>
<td></td>
</tr>
<tr>
<td>Group Membership</td>
<td>-.17</td>
<td></td>
</tr>
<tr>
<td>Perceptions of Greed x Group Membership</td>
<td>.03*</td>
<td>.40*</td>
</tr>
<tr>
<td>Total R-squared</td>
<td>.24**</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>173</td>
<td></td>
</tr>
</tbody>
</table>

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

Mediation analyses. The model presented above suggests that perceptions of greed will mediate the relationship between a motivated distributive injustice and punishment behaviors toward in-group members. I tested these relationships using the PROCESS procedure (Hayes, 2013), and Figure 19 depicts the relationships tested.

Figure 19. Perceptions of Greed as a Mediator

![Figure 19.](image)

*Figure 19*. A schematic model depicting perceptions of greed as a mediator between a motivated distributive injustice and punishment behavior.
Simple mediation analyses using ordinary least squares path analysis demonstrates that the relationship between a distributive injustice (already combined with an inference of motive to acquire) and punishment behavior is fully mediated by perceptions of greed. When participants experience a distributive injustice, they form perceptions of greed ($a = -2.09, p < .000$) and perceptions of greed in turn drive punishment behavior ($b = .30, p < .01$). A bias-corrected bootstrap confidence interval for the indirect effect ($ab = -.63$) does not include zero (-1.13 to - .11) and the direct effect of a distributive injustice on punishment behavior is not significant in the presence of the mediator ($c' = -.38, p = .16$).
Study 3

This study examines social distancing in reaction to perceptions of greed in a laboratory study where participants engaged in a common-pool resource dilemma (CPR), using the same general procedure as in Studies 1 and 2. This study tested Hypothesis 6, which states that perceptions of greed will be positively associated with social distancing, and Hypothesis 8, which states that group status will moderate this relationship such that out-group status will be more strongly associated with social distancing than in-group status.

Participants

144 participants (54% males, 46% females) recruited from the University of Arizona general population of undergraduates participated in this study. Participants were paid contingent on the decision they made during the experiment and some also received class credit in an amount determined by their instructors. None participated in either of the previous studies.

Design

For this study, the motive to acquire / no motive to acquire manipulation was again removed and all conditions for Study 3 were “motive” conditions. The distributive justice manipulation was executed as it was in Study 2. In addition this study included the same in-group / out-group manipulation as in Study 2, resulting in four experimental conditions: high acquisition – in-group status, high acquisition – out-group status, low acquisition – in-group status, and low acquisition – out-group status. Participants were randomly assigned to conditions, with 34 to 38 observations in each condition.

Procedures and Manipulations

Procedures. The procedures for the CPR experiment in Study 3 were identical to those in Study 2, with two exceptions. First, the punishment stage was eliminated and attitudinal and
behavioral measures of social distancing were added to the study. Social distancing attitudes were measured as part of the post-experimental questionnaire (PEQ) and the behavioral social distancing stage was conducted after the conclusion of the CPR experiment and PEQ.

Second, multiple confederate participants were deployed in order to provide a focus for participants’ social distancing behavior. Each in-group session had one focal confederate (i.e., one for Group G) and each out-group session had two focal confederates (i.e., one for Group A and one for Group B). Confederates were recruited from the principal investigator’s current and previous classes taught, and in one case a confederate was a research assistant borrowed from another, unrelated research project. Confederates recruited from the principal investigator’s currently running class were offered extra credit in exchange for their participation. All confederates were blind to the study’s hypotheses and initially told to arrive at the laboratory and join the group of people that would be congregated outside of the laboratory. No other information about their role was communicated at this stage. There were 27 confederates in total, 11 female and 16 male. Confederates were assigned to sessions in a manner that counterbalanced gender across in-group sessions and within and across out-group sessions.

All confederates used in Study 3 sessions participated exactly as focal participants did, up until the point in time that they were escorted back to their individual rooms. As focal participants were making their initial withdrawal decisions, the principal investigator gave instructions to the confederate(s). Confederates were given “dummy” forms appropriate to the manipulations relevant to the particular study session, told that they would be escorted to the lobby area, and to remain quiet and act as naturally as possible while seated at the table in the lobby area. After three to four focal participants indicated that they had made their initial withdrawal decisions, the confederate was brought out of their own individual room and
instructed to sit at a chair placed at the table at which focal participants would shortly be paid out. The confederate’s “dummy” materials were placed in front of them so that the group designation and other participant’s acquisition amount was visible to focal participants should they choose to look at the confederate’s paperwork. All confederates were seated at the same place and in the same position at the table, with their personal belongings and paperwork positioned in the same manner in all conditions.

Once all focal participants associated with the particular confederate were paid and processed out of the laboratory, the confederate was instructed to refrain from discussing their participation and allowed to leave the laboratory.

**Manipulations.** The in-group / out-group manipulation was conducted exactly as described in Study 2 and prior to the CPR experiment.

The PEQ included two questions allowing participants to express social distancing. After completing the PEQ, participants were brought into the lobby area of the laboratory and observed for physical social distancing from a confederate, as specified above and below. Money paid to participants was paid out immediately after the social distancing stage at the conclusion of the experiment session. The study debriefing was administered when all three studies were completed and all data was collected in an effort to control subject pool contamination.

**Measures**

**Social distancing.** Social distancing can occur by a variety of means, including both verbal and physical expressions of distancing. Examples include expressing attitudes or beliefs dissimilar to the target of distancing (Swim, Ferguson & Hyers, 1999) and physical distancing
I measured attitudinal social distancing through survey items and behavioral social distancing by measuring interpersonal space in a naturalistic setting.

One of the ways that social distancing can be measured is through assessing whether or not a focal individual is interested in associating with a target individual (Exline, Zell & Lobel, 2013; Haidt et al., 2003). I asked participants two questions designed to assess their desire to interact with the person they were paired with in the experiment. One of the questions was modified from Exline et al.’s (2013) study examining awkward encounters. This question reads: “Would you like to meet the other participant in this experiment?” Responses for this item range from 1 (no, definitely not) to 5 (yes, definitely). The second question was developed for this study and is intended to probe whether or not participants would like to interact further with the other participant in the experiment. This question reads: “If given the chance, would you want to work with the same person in another round of this experiment?” Responses for this item range from 1 (no, definitely not) to 5 (yes, definitely).

The second measure of social distancing was to provide participants the opportunity to distance themselves through their choice of seating proximity to a confederate (Nagar, 2006; Novelli et al., 2010) who participated in the experiment. As noted in the “Procedures” section, confederates were assigned to laboratory sessions and followed the same procedures as participants did, entering the laboratory, participating in the in / out group manipulation, listening to instructions, and being placed in an individual room for the experiment task. In this way, participants were able to recognize the confederate(s) as another participant in their experiment session. After the experiment concluded, the confederate was brought out and seated in a specified location at the experiment payout table located in the lobby of the laboratory, as described above. Once the confederate was settled, participants were brought one-by-one to the
lobby area of the laboratory, which contained a stack of chairs. In the in-group conditions, only one confederate was needed, and all focal participants saw a confederate who was assigned to the same group as themselves. In the out-group conditions, there was one confederate for each group, such that ‘B’ participants saw a member of the ‘A’ (out) group seated at the table when they emerged from their individual rooms, and ‘A’ group participants saw a ‘B’ group member seated at the table when they returned to the lobby for payout. As participants were brought out to the lobby area, they were instructed to take a chair from the stack and be seated at the payout table. Participants were then paid according to the results of the experiment and told that they were free to leave. If the participant directed any question to the confederate that may have compromised the experiment, I interjected on behalf of the confederate and re-directed the conversation. Once the participant left the laboratory, the distance between the center of the participant’s chair and the center of the confederate’s chair was measured with a tape measure. Two experimenters verified the distances, which were linked to participants through their session date and time, and room number. For this measure, the greater the physical distance between the chairs, the greater the social distancing.

**Study variables.** Perceptions of greed, outcome fairness, and the number of Economics classes taken were all measured, the full text of which is included in Appendix 1, and all manipulation checks were measured in the same way as outlined in Study 2. The full text of the manipulation checks is in Appendix 2. Gender was included in demographic variables, and the text of this item is included with the demographic measures in Appendix 1.

**Control variables.** Gender effects have been noted in physical distance measures of social distancing (Gifford, 1982) and I therefore controlled for gender in this analysis.
Specifically, female participants in Gifford’s (1982) study demonstrated choice of social distance closer than male participants, all else being equal.

**Results and Analyses**

**Preliminary analyses.** Before conducting hypothesis testing, the manipulations were checked and the distribution of variables was assessed. The manipulation check demonstrated that the manipulation of the in-group / out-group designation was successful. One hundred percent (100%) of the participants assigned to the in-group sessions correctly reported their group designation, and 100% of the participants in the out-group sessions correctly reported their group designations. In addition, the variables for perceptions of greed, punishment behaviors and the number of economics classes all demonstrated a normal distribution. The distribution of males to females is generally in line with the general population of undergraduate males and females attending the University of Arizona (48% male and 52% female as of Fall semester 2013; University of Arizona, 2013)

The reliability of the perceptions of greed measure developed for these studies was also computed with the data from Study 3, resulting in a Cronbach’s alpha of \( \alpha = .88 \). Group membership was measured on a 0/1 basis with zero (0) indicating out-group membership and one (1) indicating in-group membership. Gender was also coded on a 0/1 basis with females coded zero (0) and males coded one (1). Table 5 presents the bivariate, Pearson correlations between the variables of interest for this study.

**Table 5**

**Bivariate, Pearson Correlations, Study 3**

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Perceptions of Greed</td>
<td>2.73</td>
<td>1.41</td>
<td>(.88)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Social Distancing Attitudinal</td>
<td>3.14</td>
<td>1.14</td>
<td>-.32**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Social Distancing Behavioral</td>
<td>35.25</td>
<td>4.73</td>
<td>.03</td>
<td>-.08</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Group Membership</td>
<td></td>
<td></td>
<td>-.12</td>
<td>.03</td>
<td>-.18*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Gender</td>
<td></td>
<td></td>
<td>.10</td>
<td>-.26**</td>
<td>-.13</td>
<td>-.08</td>
<td></td>
</tr>
<tr>
<td>No. of Economics classes taken</td>
<td>1.56</td>
<td>1.21</td>
<td>.06</td>
<td>-.08</td>
<td>.12</td>
<td>.04</td>
<td>-.26**</td>
</tr>
</tbody>
</table>

Note: Numbers along the diagonal in parentheses note scale reliability (Cronbach’s alphas), where appropriate

**p < .01. *p < .05.**
**Hypothesis testing.** This study tests Hypotheses 6 and 8. Hypothesis 6 states that there will be a positive relationship between perceptions of greed and social distancing. As with Hypothesis 5, because I was unable to directly manipulate perceptions of greed in the laboratory setting, I am prevented from making causal hypotheses about the relationship between perceptions of greed and social distancing. However, it is possible to demonstrate that perceptions of greed are associated with social distancing. Hypothesis 8 states that group membership will moderate the relationship between perceptions of greed and social distancing such that greedy actor out-group status will lead to a stronger relationship between perceptions of greed and social distancing than greedy actor in-group status. The model depicting the relationships between the variables of interest is duplicated in Figure 20 for reference.

**Figure 20.** Further Behavioral Consequences of Perceptions of Greed

![Figure 20](image)

*Figure 20.* A schematic model, as outlined earlier, depicting the relationship between perceptions of greed and social distancing, including the moderating role of in-group / out-group status.
Hypothesis 6. As the physical measure of social distancing was not correlated with perceptions of greed, only the attitudinal measure of social distancing was tested for Hypothesis 6. The lack of correlation between perceptions of greed and the physical measure of social distancing may be due to limited variation in the behavior itself; all participants tended to sit at a similar distance from the confederate throughout the study. The research team, however, noticed a number of interesting behaviors during the physical social distancing phase. Systematic recording and coding of other behaviors indicating social distance (e.g., looking away from the confederate, approaching one’s own chair from a position away from the confederate, talking to the confederate [R]) would have provided additional information that may have resulted in a stronger relationship. Gender is correlated with attitudinal social distancing (see Table 5), so Hypothesis 6 was tested with hierarchical linear regression. The number of Economics classes taken was retained as a control variable as it is correlated with gender (again, see Table 5). Table 6 reports these results.

Table 6

Hierarchical Linear Regression Analysis Predicting the Relationship Between Perceptions of Greed and Social Distancing

<table>
<thead>
<tr>
<th>Predictor</th>
<th>ΔR-squared</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td># of Economics classes taken</td>
<td>.09**</td>
<td>-.16</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td># of Economics classes taken</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceptions of Greed</td>
<td>.08**</td>
<td>-.29</td>
</tr>
<tr>
<td>Total R-squared</td>
<td>.17**</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>144</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01

Note that the attitudinal social distancing items are on a 1 (would not like) to 5 (would very much like) scale, meaning that a lower number indicates higher social distancing, therefore a negative correlation indicates a positive relationship with the predictor variable and social distancing and a positive correlation indicates a negative relationship between the predictor and social distancing.
Results indicate that perceptions of greed do have a significant, positive relationship with attitudinal social distancing in the presence of gender and number of Economics classes taken as controls, supporting Hypothesis 6. In contrast to other research examining gender and social distancing (e.g. Gifford, 1982), the significant regression coefficient for gender shows that females expressed greater attitudinal social distancing than males.

**Hypothesis 8.** The study design used to test Hypothesis 8 is a 2 (high / low acquisition behavior) x 2 (in / out group membership) between-subject design. Hypothesis 8, however, proposes that perceptions of greed, not distributive (in)justices (here, acquisition behavior), are associated with social distancing in general and greater social distancing toward out-group members than toward in-group members. In order to fully understand whether or not perceptions of greed affect social distancing differentially based on group membership, I must first establish that distributive injustices generate significantly stronger perceptions of greed than distributive justices. Recall that for this study, the (no) motive conditions from Study 1 were removed and all conditions were “motive” conditions. Figure 21 presents perceptions of greed across the four conditions.

**Figure 21.** Perceptions of Greed Among In-group and Between Out-group Members

<table>
<thead>
<tr>
<th></th>
<th>In-Group</th>
<th>Out-Group</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Distributive Injustice</strong></td>
<td>3.52</td>
<td>3.87</td>
<td>M = 3.70</td>
</tr>
<tr>
<td></td>
<td>n = 34</td>
<td>n = 37</td>
<td></td>
</tr>
<tr>
<td><strong>Distributive Justice</strong></td>
<td>1.67</td>
<td>1.87</td>
<td>M = 1.78</td>
</tr>
<tr>
<td></td>
<td>n = 38</td>
<td>n = 35</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M = 2.56</td>
<td>M = 2.90</td>
<td>M = 2.72</td>
</tr>
</tbody>
</table>

*Figure 21.* A model depicting the main and interactive effects of distributive (in)justice and in-group and out-group status on perceptions of greed.
Results exhibit a strong main effect of distributive justice (M = 3.70 and M = 1.78 for distributive injustice and distributive justice respectively; Cohen’s $d = 1.89$; ($F(1, 142) = 14.78$, $p < .000$)), but no significant main effect of group membership on perceptions of greed (M = 2.56 and M = 2.90 for in-group and out-group membership respectively; Cohen’s $d = .25$; ($F(1, 142) = .56$, $p = .15$)). While distributive injustice contributes to higher perceptions of greed, there is no difference in perceptions of greed among in-group members and between out-group members (M = 3.52 and M = 3.87 for in-group and out-group members respectively; ($F(1, 71) = 1.56$, $p = .37$)) in the distributive injustice conditions. Having established that in-group members and out-group individuals perceive greed to the same extent, the question now becomes whether or not these perceptions differentially lead to social distancing behaviors based on group membership.

I used hierarchical linear regression to test Hypothesis 8. As group membership was correlated with behavioral social distancing, I tested each of attitudinal, behavioral, and a standardized combination of the two social distancing variables as dependent variables. Table 7 shows the results of these regressions, respectively.
Table 7

Hierarchical Linear Regression Analysis Predicting the Moderating Effects of Group Membership on the Relationship Between Perceptions of Greed and Social Distancing

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Attitudinal</th>
<th>Behavioral</th>
<th>Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ΔR-squared</td>
<td>β</td>
<td>ΔR-squared</td>
</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.09**</td>
<td>-.30**</td>
<td>-.10</td>
</tr>
<tr>
<td># of Economics classes taken</td>
<td>.08**</td>
<td>-.29**</td>
<td>.00</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-.27**</td>
<td>-.11</td>
<td>-.15</td>
</tr>
<tr>
<td># of Economics classes taken</td>
<td>-.14</td>
<td>.09</td>
<td>-.15</td>
</tr>
<tr>
<td>Perceptions of Greed</td>
<td>-</td>
<td></td>
<td>.00</td>
</tr>
<tr>
<td>Step 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-.27**</td>
<td>-.13</td>
<td>-.15</td>
</tr>
<tr>
<td># of Economics classes taken</td>
<td>-.13</td>
<td>.09</td>
<td>-.16</td>
</tr>
<tr>
<td>Perceptions of Greed</td>
<td>-.30**</td>
<td>.03</td>
<td>-.23**</td>
</tr>
<tr>
<td>Group Membership</td>
<td>.00</td>
<td>-.06</td>
<td>.03*</td>
</tr>
<tr>
<td>Step 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-.27**</td>
<td>-.13</td>
<td>-.15</td>
</tr>
<tr>
<td># of Economics classes taken</td>
<td>-.13</td>
<td>.09</td>
<td>-.15</td>
</tr>
<tr>
<td>Perceptions of Greed</td>
<td>-.44**</td>
<td>.06</td>
<td>-.36</td>
</tr>
<tr>
<td>Group Membership</td>
<td>-.19</td>
<td>-.15</td>
<td>-.07</td>
</tr>
<tr>
<td>Perceptions of Greed x Group Membership</td>
<td>.01</td>
<td>.20</td>
<td>.00</td>
</tr>
<tr>
<td>Total R-squared</td>
<td>.18**</td>
<td>.05*</td>
<td>.10**</td>
</tr>
<tr>
<td>n</td>
<td>144</td>
<td>144</td>
<td>144</td>
</tr>
</tbody>
</table>

Note: The "Combined" social distancing outcome is a standardized measure including both attitudinal and behavioral measures of social distancing.

Results show a main effect of perceptions of greed on social distancing attitudes, however there is no main effect of group membership, nor is there a significant interaction between perceptions of greed and group membership on social distancing attitudes. These results do not support Hypothesis 8; there appears to be no difference in social distancing attitudes between in-group members and out-group members.

In terms of social distancing behaviors, there is no main effect of perceptions of greed on the distance that participants chose to place between themselves and the confederate, however there is a main effect of group membership on social distancing behaviors. Participants were more likely to distance themselves from out-group members than from in-group members.

However, once the interaction term is included, this significant effect goes away, and the
interaction term is similarly non-significant. These results also demonstrate no support for Hypothesis 8.

Results here demonstrate that while there is a main effect of perceptions of greed on the combination of social distancing measures, there is neither a main effect of group membership, nor a significant interaction between perceptions of greed and group membership impacting social distancing more generally. Here again, there is no support for Hypothesis 8.

**Mediation analyses.** Since there was a main effect of perceptions of greed on social distancing attitudes, and it did appear as though distributive injustices contributed to perceptions of greed in this study, I wanted to test whether or not perceptions of greed mediated the relationship between a motivated distributive justice and social distancing attitudes. The overall theoretical model proposed also suggests that this mediating relationship is present. Figure 22 presents the mediated model for the variables specific to Study 3.

**Figure 22.** Perceptions of Greed as a Mediator

![Figure 22](Image)

Figure 22. A schematic model depicting perceptions of greed as a mediating factor in the relationship between a motivated distributive injustice and social distancing attitudes.

Simple mediation analyses using ordinary least squares path analysis demonstrates that the relationship between a distributive injustice (already combined with an inference of motive to acquire) and social distancing attitudes is not mediated by perceptions of greed. When
participants experience a distributive injustice, they form perceptions of greed ($a = -1.93$, $p < .000$), however perceptions of greed do not in turn drive social distancing attitudes ($b = -.14$, $p = .12$). A bias-corrected bootstrap confidence interval for the indirect effect ($ab = .27$) does include zero (-.11 to .74), suggesting that perceptions of greed are not the mechanism behind why distributive injustices are associated with social distancing attitudes. Given earlier findings suggesting that relative deprivation may also serve as a mediator, it would be worthwhile to test this relationship as well. In addition, gender did indeed have a significant relationship with social distancing attitudes in each step of the regression analysis (see Table 7); it is possible that gender may have a moderating role in the relationship between perceptions of greed and social distancing.

Additional Analyses on Social Distancing

Mixed results in Study 3 reveal two points for further analysis: the potential for gender effects in social distancing attitudes, behaviors or both, and a closer examination of the nature of social distancing as a construct.

Gender effects. Although gender was included as a control variable on the basis that females in general exhibit a tendency toward lesser social distancing from both males and females in any given situation (Gifford, 1982), results here show that females tended to express greater social distancing than males rather than lesser social distancing. This prompts the question of whether or not there are gender effects in the relationship between perceptions of greed and social distancing, and so I analyzed this relationship by gender. As before, analysis showed no relationship between perceptions of greed and behavioral social distancing, so this analysis includes only attitudinal social distancing. Table 8 shows the results of regression analysis, by gender, of the relationship between perceptions of greed and social distancing.
attitudes and Table 9 shows the regression results including the moderating effect of group membership on the relationship between perceptions of greed and social distancing attitudes.

Table 8

*Hierarchical Linear Regression Analysis Predicting the Relationship Between Perceptions of Greed and Social Distancing, by Gender*

<table>
<thead>
<tr>
<th>Females</th>
<th>ΔR-squared</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td># of Economics classes taken</td>
<td>.04</td>
<td>-.19</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td># of Economics classes taken</td>
<td></td>
<td>-.17</td>
</tr>
<tr>
<td>Perceptions of Greed</td>
<td>.04</td>
<td>-.19</td>
</tr>
<tr>
<td>Total R-squared</td>
<td>.07</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>75</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Males</th>
<th>ΔR-squared</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td># of Economics classes taken</td>
<td>.01</td>
<td>-.12</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td># of Economics classes taken</td>
<td></td>
<td>-.11</td>
</tr>
<tr>
<td>Perceptions of Greed</td>
<td>.17**</td>
<td>-.41**</td>
</tr>
<tr>
<td>Total R-squared</td>
<td>.18**</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>63</td>
<td></td>
</tr>
</tbody>
</table>

**p < .01

As can be seen in Table 8, there are indeed differing relationships between perceptions of greed and social distancing attitudes by gender. While there is no relationship for females, there is a moderately strong relationship between perceptions of greed and social distancing attitudes for males. Although not hypothesized, this analysis suggests that previous empirical research investigating social distancing may be of limited value in interpreting reactions to perceptions of greed. Further theoretical exploration of gender effects and any or all of reactions to distributive
injustices, inferences of motive and social sanctioning behaviors more generally may provide some clues as to the results seen here.

Table 9

*Hierarchical Linear Regression Analysis Predicting the Moderating Effects of Group Membership on the Relationship Between Perceptions of Greed and Social Distancing, by Gender*

### Females

<table>
<thead>
<tr>
<th>Predictor</th>
<th>ΔR-squared</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td># of Economics classes taken</td>
<td>.04</td>
<td>-.19</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td># of Economics classes taken</td>
<td>-.13</td>
<td></td>
</tr>
<tr>
<td>Perceptions of Greed</td>
<td>-.18</td>
<td></td>
</tr>
<tr>
<td>Group Membership</td>
<td>.04</td>
<td>.04</td>
</tr>
<tr>
<td>Step 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td># of Economics classes taken</td>
<td>-.13</td>
<td></td>
</tr>
<tr>
<td>Perceptions of Greed</td>
<td>-.18</td>
<td></td>
</tr>
<tr>
<td>Group Membership</td>
<td>.04</td>
<td></td>
</tr>
<tr>
<td>Perceptions of Greed x Group Membership</td>
<td>.00</td>
<td>-.04</td>
</tr>
<tr>
<td>Total R-squared</td>
<td>.08</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>75</td>
<td></td>
</tr>
</tbody>
</table>

### Males

<table>
<thead>
<tr>
<th>Predictor</th>
<th>ΔR-squared</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td># of Economics classes taken</td>
<td>.01</td>
<td>-.12</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td># of Economics classes taken</td>
<td>-.08</td>
<td></td>
</tr>
<tr>
<td>Perceptions of Greed</td>
<td>-.42**</td>
<td></td>
</tr>
<tr>
<td>Group Membership</td>
<td>.18**</td>
<td>-.09</td>
</tr>
<tr>
<td>Step 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td># of Economics classes taken</td>
<td>-.08</td>
<td></td>
</tr>
<tr>
<td>Perceptions of Greed</td>
<td>-.42**</td>
<td></td>
</tr>
<tr>
<td>Group Membership</td>
<td>-.09</td>
<td></td>
</tr>
<tr>
<td>Perceptions of Greed x Group Membership</td>
<td>.00</td>
<td>.02</td>
</tr>
<tr>
<td>Total R-squared</td>
<td>.19**</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>63</td>
<td></td>
</tr>
</tbody>
</table>

**p < .01

Table 9 reports results similar to those of Table 8; that is, males exhibit a relationship between perceptions of greed and social distancing whereas females do not. In addition, as
reported earlier, group membership does not moderate the relationship between perceptions of
greed and social distancing for either gender.

**Social distancing items.** While social distancing as a construct generally refers to any
psychological or physical distancing between and among individuals and groups based on social
psychological experiences with each other, the nature of these particular experiments has a
bearing on the validity of the established attitudinal social distancing items used in the measure
for social distancing. The two items used to measure attitudinal social distancing in Study 3 are
“Would you like to meet the other participant in this experiment?” and “If given the chance,
would you want to work with the same person in another round of this experiment?” The former
question is a more general expression of social distancing, whereas the latter is specifically
directed at the experiment participants are engaged in. For this reason, it is possible that the
relationship between perceptions of greed and each of these two questions would differ, due to
the situational context. Table 10 shows the correlation matrix for the variables of interest in
Study 3, with each of the two attitudinal items individually represented.

Table 10

*Bivariate, Pearson correlations, Study 3, with Social Distancing Items Separated*

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Perceptions of Greed</td>
<td>2.73</td>
<td>1.41</td>
<td>(.88)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Would You Like to Meet</td>
<td>3.25</td>
<td>1.46</td>
<td>.14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Participate in Another Round</td>
<td>3.03</td>
<td>1.59</td>
<td>-.59**</td>
<td>.12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Group Membership</td>
<td></td>
<td></td>
<td>-.12</td>
<td>-.05</td>
<td>.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Gender</td>
<td></td>
<td></td>
<td>-.17*</td>
<td>-.22**</td>
<td>-.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of Economics classes taken</td>
<td>1.56</td>
<td>1.21</td>
<td>.06</td>
<td>.00</td>
<td>-.12</td>
<td>.04</td>
<td>-.26**</td>
</tr>
</tbody>
</table>

Note: Numbers along the diagonal in parentheses note scale reliability (Cronbach’s alpha), where appropriate
** p < .01. * p < .05.

Table 10 shows that there is indeed a differing relationship between perceptions of greed
and each of the two attitudinal social distancing items. There is no correlation between
perceptions of greed and whether or not focal participants would like to meet the other participant in the experiment, but there is a moderately strong negative correlation between perceptions of greed and whether or not participants were open to another round of the same experiment with the same person. Gender shows a pattern similar to the one discussed earlier.

Table 11 shows the results of hierarchical linear regression with perceptions of greed predicting responses to each separate item.

Table 11

*Hierarchical Linear Regression Predicting Responses to Each Individual Social Distancing Item Based on Perceptions of Greed*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>ΔR-squared</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would you like to meet the other participant?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-.18*</td>
<td></td>
</tr>
<tr>
<td># of Economics classes taken</td>
<td>.03</td>
<td>-.05</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-.20*</td>
<td></td>
</tr>
<tr>
<td># of Economics classes taken</td>
<td>-.06</td>
<td></td>
</tr>
<tr>
<td>Perceptions of Greed</td>
<td>.03</td>
<td>.16</td>
</tr>
<tr>
<td>Total R-squared</td>
<td>.06</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>140</td>
<td></td>
</tr>
</tbody>
</table>
* p < .05

<table>
<thead>
<tr>
<th>Predictor</th>
<th>ΔR-squared</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would you want to work with the same person in another round?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-.27**</td>
<td></td>
</tr>
<tr>
<td># of Economics classes taken</td>
<td>.08**</td>
<td>-.19*</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-.20**</td>
<td></td>
</tr>
<tr>
<td># of Economics classes taken</td>
<td>-.14*</td>
<td></td>
</tr>
<tr>
<td>Perceptions of Greed</td>
<td>.31**</td>
<td>-.56**</td>
</tr>
<tr>
<td>Total R-squared</td>
<td>.39**</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>140</td>
<td></td>
</tr>
</tbody>
</table>
** p < .01, * p < .05.

As can be seen in Table 11, perceptions of greed are only associated with participants’ responses to whether or not they would like to engage in another round of the experiment with
the same other participant. This analysis is suggestive of the contextual nature of the social distancing items used, and of the transactional nature of the experiment itself. While the two social distancing items are established measures (e.g., Exline et al., 2013), the immediacy of the experience in a laboratory experiment involving a transactional economic dilemma may indeed have an effect on participants’ responses to each of the social distancing questions despite the generalized treatment of social distancing in the literature. This suggests an important situational boundary condition for the use of measures of social distancing that future research should account for. Note that since there was no correlation between group membership and any of the variables of interest, I did not perform analysis on the moderating role of group membership on the relationship between perceptions of greed and each of the social distancing items.
Discussion

The three studies reported here provide important insights into the psychological processes and reactions surrounding perceptions of greed. Results indicate that the interaction of a distributive injustice and an inference of a selfish motive to acquire cause perceptions of greed, and that perceptions of greed mediate the relationship between that interaction and three of the four outcomes explored: personal anger, moral outrage and punishment behavior. Results also suggest that rather than having a moderating effect on the relationship between the interaction of a distributive injustice and an inference of a selfish motive to acquire, relative deprivation serves as a second mediator between the interaction, perceptions of greed and personal anger, in that sequence.

Perceptions of greed have significant, positive relationships with each of personal anger, moral outrage, punishment behaviors and social distancing, as hypothesized. Group membership status, proposed as a moderator between perceptions of greed and punishment behaviors and social distancing, received mixed results. While those members of in-groups tended to punish each other more than members of out-groups, members of out-groups were not more likely to engage in social distancing than members of in-groups.

After decades of assumptions about the nature of greed and what drives perceptions of greed, this work establishes that perceptions of greed are grounded in experiences of unfair outcomes and require inferences about the selfish motives of those pursuing or achieving unfair outcomes. The association of perceptions of greed with the pursuit and attainment of unfair outcomes by others is an important one in the context of business management. Despite the generally transactional view of business relationships, competition and the drive for profitability provide an environment in which perceptions of greed may flourish.
For three out of the four hypothesized outcomes (personal anger, moral outrage and punishment behavior), perceptions of greed fully mediated the relationship between a distributive injustice coupled with an inference of selfish motive and those outcomes. Replication of this relationship across three separate outcomes demonstrates that perceptions of greed explain why these reactions occur. With a clarified definition of greed, an understanding of what leads to perceptions of greed, and evidence for the nature of reactions to perceptions of greed, it is now possible to further explore related theory and engage in additional empirical research.

**Extensions Related to Relative Deprivation and Organizational Justice**

As noted, the moderating role of relative deprivation on the relationship between a motivated distributive injustice and perceptions of greed was not supported in Study 1. While further analysis suggested that relative deprivation and perceptions of greed both mediated the relationship between a motivated distributive injustice and anger, this analysis was purely exploratory. Relative deprivation (i.e., the sense that someone is losing out) is a consistent theme across a wide variety of literatures (e.g., political science, economics) where greed appears. Conceptually, it is also tied very closely to distributive justice (e.g., Adams, 1965). These two features, combined with results suggesting that relative deprivation is part of explaining why people perceive greed, demonstrate that further theoretical development focusing on relative deprivation is important. As mentioned, the business environment is characterized by competition and a drive for profitability. To the extent that these features contribute to perceptions that the business environment is a fixed pie, it becomes an increasingly important to understand the relationship of relative deprivation to perceptions of greed.

In addition to a fundamental focus on distributive justice, it is possible that other forms of organizational justice have a role to play in explaining the strength of perceptions of greed, or in
explaining the strength of outcomes of perceptions of greed. Previous research has shown that it is possible for combinations of distributive, procedural and interactional justice to, at times, strengthen reactions to (un)fairness (e.g., Folger & Skarlicki, 1998) and attenuate reactions to (un)fairness (e.g., Brockner & Wiesenfeld, 2005). Given the necessity of an inference of a selfish motive to acquire on the part of an actor, it is not unreasonable to expect that interactional injustice, that is, unfair interpersonal treatment or a lack of information transparency on the part of an actor, may in combination with a distributive injustice lead to greater perceptions of greed. Alternatively, it is possible that procedural justice could have an effect on an individual’s inference of a selfish motive to acquire, such that a high level of procedural justice may, in theory, explain an experienced distributive injustice in more objective terms, lessening the likelihood of forming an inference of selfish motive. Of course, low procedural justice may in turn increase the chances that an individual will infer a selfish motive to acquire. If there are clearly no apparent procedures related to the distribution of an unfair outcome, this lack of objectivity may increase the chances that an inference of a selfish motive may develop.

**Extensions Related to Study Outcomes**

Another question to ask is whether social sanctioning works to check greedy behavior. Both the act of being greedy and the reactions to perceiving greed in others represent divisive attitudes and behaviors. Organizations exist in part because they confer advantages associated with cooperative, rather than competitive behaviors. This also helps to explain why fairness matters so much (e.g., Cropanzano, Bowen & Gilliland, 2007) in organizations. On the other hand, a competitive business environment focused on economic outcomes provides a potential incentive to act greedily. Applied to the question at hand, the balanced focus on economic and fairness concerns that Cropanzano, Bowen and Gilliland argue for is only possible if social
sanctioning works to check greedy behavior, thereby maintaining the fair and cooperative environment that benefits all. While there is evidence that people are extremely sensitive to social sanctioning (e.g., Spoor & Williams, 2006), the question of whether or not social sanctioning works has not been formally applied to sanctions against greedy behavior. Answering the question of whether or not punishment or social distancing as social sanctioning strategies work to change the behavior of those perceived as greedy may broaden the view of both the antecedents of, and reactions to, perceptions of greed.

In this study, two relationships did not receive the support anticipated by my theoretical arguments. The first is relative deprivation, and as discussed earlier, additional analyses clarified the nature of the role that relative deprivation plays among the variables studied and provided avenues for further study. The second relationship that did not receive support was the moderating role of group membership status on social distancing (attitudes or behaviors).

Despite the fact that the in-group / out-group manipulations were identical in Studies 2 and 3, and that manipulation checks in both studies supported the efficacy of the manipulations in leading to identifying other, paired participants as part of either an in-group or an out-group, there is some evidence for why group status may not have moderated the relationship between perceptions of greed and social distancing as hypothesized. For reference, Hypothesis 8 proposed that group status would moderate the relationship between perceptions of greed and social distancing such that out-group members would be subjected to greater social distancing from focal participants than in-group members. The theoretical basis for this argument centered on the idea that the lower level of interconnectedness between out-group members would lead to a milder form of social sanctioning in the form of social distancing, and there is research to
support the notion that a lower-cost form of social sanctioning (specifically social distancing) is effective when interconnectedness is low (e.g., Miller et al., 2012; Novelli et al., 2010).

A possible reason why results did not turn out as hypothesized could be that the in-group / out-group manipulation was not strong enough given the sample population. The sample populations for both Studies 2 and 3 were comprised of undergraduate students, a comparatively homogenous group. This was a methodological trade-off for the ability to source a large number of participants for a controlled laboratory study, which was needed to test the internal validity of the model as proposed. Even though the manipulation in Study 3 was carried out in exactly the same manner as in Study 2, the homogeneity of the sample may mean that on a broad underlying basis, participants viewed each other as members of an in-group regardless of the manipulation conducted in the laboratory. This may explain why Hypothesis 7, that participants would be more likely to punish in-group members than out-group members, was supported and Hypothesis 8 was not supported. One way to test this would be to replicate both Study 2 and Study 3 with a different design for the manipulation, one where group membership could be manipulated along stronger faultlines. If Hypothesis 7 were confirmed, and Hypothesis 8 also received support, then it is possible that the homogeneity of the sample populations used here produced the results in Study 3. This implies that greater attention needs to be paid to how participants in a sample population view themselves and others with regard to group status, especially in a laboratory situation where sample populations are likely to be more homogenous than the general population. This also implies that there are limits to the minimal group paradigm approach to generating in-group / out-group sentiments. To the extent that a sample population possesses characteristics that may serve to increase identification, sympathy, empathy or other binding
sentiments between people, the minimal group paradigm method may not be as effective in producing in-group / out-group distinctions.

If replication of Studies 2 and 3 produced the same results, produced results showing no support for Hypothesis 7 but support for Hypothesis 8, or produced results showing no support for either of Hypothesis 7 or 8, then a deeper investigation into how individuals form in-group and out-group perceptions of each other and into the sanctioning attitudes and behaviors that stem from those categorizations, needs to be done. Despite or because of prior theoretical and empirical evidence supporting Hypotheses 7 and 8 as stated, any evidence that does not support earlier work should prompt an investigation in an attempt to resolve the discrepancy.

**Next Steps in the Research Program**

There are four areas that deserve attention in the next steps of this research program. Each of these allows for an opportunity to replicate the findings reported here and clarify relationships between the variables of interest. First, the motive / no motive manipulation should be strengthened. In practical terms, the design of this manipulation resulted in a one-sided manipulation in that the motive conditions were not constructed to explicitly convey a selfish motive to acquire on the part of the other participant. Rather, the actual nature of the motive inferred was left to the judgment of the focal participant. Although perceptions of greed were high (M = 4.04) in the motive / distributive injustice condition in Study 1, they were higher in the no motive / distributive injustice condition (M = 2.81) than expected. These means are significantly different from each other, but the higher-than-expected mean in the latter condition may indicate a possible confound between the high acquisition conditions and participants’ inference of a selfish motive. Without explicitly manipulating a selfish motive to acquire, it is
not possible to understand the full extent to which inferences of motive (or lack thereof) impact perceptions of greed.

This in turn may be related to another issue; the reported perceptions of greed were not as strong once the no motive conditions were removed in Studies 2 and 3. In these studies, the motive manipulation from Study 1 was carried forward intact, again, leaving open the possibility for inferences of other motives, such as need. Reported mean perceptions of greed in Studies 2 and 3 generally rested in the mid- to high 3’s (e.g., 3.45, 3.67) on a 5-point scale; noticeably lower than in Study 1 despite the identical manipulation procedure. In conceptual terms, these means are at best only moderate indicators of perceptions of greed. Although this may represent a conservative test of the impact of perceptions of greed on the outcomes tested, the intent of the manipulation was to generate stronger perceptions of greed.

Both of these issues may be resolved by either making changes to the motive / no motive manipulations, or by observing the natural variation in inferences of motive among a sample population. If the manipulated selfish nature of the motive were more transparent to participants, perceptions of greed should, theoretically, be stronger. This could be accomplished by openly communicating a selfish motive on the part of the “other participant” or a confederate to focal participants as part of the study protocol. Alternatively, participants may engage in the same CPR activity without any manipulations, paired with another actual participant, and asked questions probing the nature of any inferences of motive they may have as a result of engaging in the activity with another person. Each of these approaches has advantages and disadvantages. Strengthening a manipulation to the point of such transparency, while efficient, may lead to participant cynicism about the laboratory experience, which may in turn reduce the meaning of any results from the experiment. Any experiment that allows natural variation in the sample
population’s behavior represents a truer measure of actual behaviors, but also means that the sample size will need to be increased in order to capture enough variation in behavior to establish valid relationships between the variables of interest. In the latter case, participants may also need to be asked to specify not only whether or not they form an inference of intentionality, but the exact nature of that inference, which may be a difficult judgment for participants to make absent any specific situational or personal cues related to the other, paired participant.

The third area that needs additional attention is discerning the relationship of relative deprivation to perceptions of greed. Post hoc analysis described in the Method section suggests that relative deprivation may join perceptions of greed in mediating the relationship between a motivated distributive justice and anger, however the mediation was partial, and this analysis was not replicated with moral outrage or punishment behaviors, for which perceptions of greed also served as a mediator. A preliminary step could be made by testing serial mediation with moral outrage and punishment behaviors, however in order to better understand how relative deprivation impacts perceptions of greed, more extensive research into the construct of relative deprivation and its antecedents and outcomes should be conducted. Information from a deeper investigation of relative deprivation should provide a better theoretical grounding for how to incorporate relative deprivation into a model involving perceptions of greed and subsequently inform an appropriate methodological design for testing. Given the close association between distributive justice and relative deprivation and the consistent association between perceptions of greed and either the self or others losing out, it is important to pursue this particular line of research.

The last near-term issue impacting these results that needs attention deals with the in-group / out-group manipulation used in Studies 2 and 3. As discussed earlier, the homogeneity
of the sample populations in these two studies may have impacted group membership perceptions among participants, despite the evidence demonstrating the efficacy of a minimal group paradigm approach (e.g., Tajfel et al., 1971) and the evidence supporting differential reactions to in-group and out-group members (Ahmed, 2007). Replication of both studies with a manipulation designed for greater differentiation between groups is likely the best option for addressing this issue. The vast number of ways that individuals differentiate themselves from each other presents a logistical challenge in allowing research participants to naturally group themselves along lines that are meaningful enough to each person in the group to elicit differential reactions to in- and out-group members. This approach would also necessitate a much larger sample size than an approach incorporating a stronger manipulation. Rather than approaching the manipulation from a minimal group paradigm perspective, group membership manipulations could be enhanced by having participants engage in activities designed to foster cooperation among the group as a whole (in-group), or competition between two subgroups within the laboratory session (out-group). In this way, the manipulation itself has a direct connection to the theoretical bases for Hypotheses 7 and 8, as engaging in activities within a group requires developing interconnected relationships and competition between groups emphasizes the lack of interconnectedness across groups.

**Long-Term Considerations**

On a longer term basis, avenues for future research include exploring other outcomes of perceptions of greed that are theoretically tied to its antecedents, such as retributive behaviors, which have been associated with experiences of distributive injustice (Greenberg, 1990). Another avenue for possible research is to investigate whether or not there is a difference in the factors that contribute to attitudinal reactions and behavioral reactions. Approach and avoidant
personality traits may differentially predict attitudinal and behavioral reactions to perceptions of greed; research has demonstrated that this simple distinction in personality does drive active and passive reactions, respectively (Carver & White, 1994). On a broader scope, researchers have just begun to investigate reactions to firm greed (Grégoire et al., 2010), and given the potential image management issues faced by firms and industries that may be perceived as greedy, as well as public reaction to perceived firm and industry greed (Adam, 2011), this issue is at once important to businesses and currently untended.

The results of these studies provide a great deal of information regarding how perceptions of greed form and how people react when they perceive greed in others. Developing and examining the internal validity of the model presented here is an important first step, and further theoretical and empirical research into greed and perceptions of greed is a wide open field. It is my hope that the work presented in this dissertation contributes to the emergent dialogue about greed in the management literature.
Appendices

Appendix I

Full text of the scale measuring perceptions of greed (Gregoire, Laufer & Tripp, 2010), modified for this study

The other participant did not intend to take advantage of me (1) … intended to take advantage of me (7)

The other participant was primarily motivated by my interest (1)…their own interest (7)

The other participant did not try to abuse me (1)…tried to abuse me (7)

The other participant had good intentions (1)…had bad intentions (7)

Full text of the PANAS, with introduction and anger subscale highlighted (*)

Please rate very carefully the degree to which you are currently experiencing each of the following feelings (circle one number on each scale):

Joyful, Afraid, Appreciative, Guilty, Scared, Mad*, Self-fulfilled, Grateful, Irritated*, Blue, Thankful, Delighted, Angry*, Successful, Gloomy, Sorry, Nervous, Remorseful, Happy, Proud, Sad

These items were measured on a 1 (do not feel at all) to 10 (feel stronger than ever have) scale.

Full text of the moral outrage measure (Beugré, 2012), modified for this study

I feel sad when I see that I am being unfairly treated

It bothers me when I see that I am not being fairly treated

I feel saddened by injustices done to me

I am concerned by unfairness done to me

All items in this scale were measured on a 1 (strongly disagree) to 5 (strongly agree) scale.
Full text of the moral outrage measure developed for this study (items interspersed)

It makes me angry when I witness a moral violation

If I see someone commit a moral violation, I get angry

Moral violations make me angry

When I hear about people or organizations committing moral violations, it makes my blood boil

All items in this scale were measured on a 1 (strongly disagree) to 5 (strongly agree) scale.

Perceptions of selfishness measure used as a manipulation check for motive conditions

To what extent did the other participant act selfishly?

This scale was measured on a 1 (not at all selfish) to 5 (very selfish) scale.

Demographic and control variables

Participants were asked their gender (a control), age, ethnicity and the number of economics classes they have taken (a control).

Appendix II

Full text of punishment measure

“At this time, you are now aware of the amount of money the other participant has withdrawn from the pool, and the resulting payouts to both you and the other participant. At this stage of the activity, you can reduce or leave the same the payout to the other participant. The other participant does not have the ability to reduce your payout, and there is no cost to you if you decide to reduce the payout to the other participant. Any reduction you choose to make to the other participant’s payout will be completely anonymous.
You must now decide how much to reduce the other participant’s payout. You can choose to reduce their payout by $0, $1, $2, or $3.

Please indicate the amount that corresponds to how much you would like to reduce the other participant’s payout. Remember, there is no cost to you, the other participant does not have the ability to reduce your payout, and any reduction you choose to make will be completely anonymous.

I would like to reduce my activity partner’s payout by:

$0  $1  $2  $3"

Group membership status manipulation check
What was your group for this experiment?
A / B / F / G / W / X.

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