Ego Economics:

Narcissism and the Ultimatum Game

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Dedication

I dedicate my work to my family, who taught and instilled in me the values that brought to question the very topic of this investigation. Be always who you are, and treat others the way you would like to be treated.
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1. Introduction

The topics of fairness and narcissism have garnered much attention due to recent economic events. The recession beginning in December 2007 has led to a heated debate between academics, politicians, and businessmen in search of a better, more efficient and more durable financial system. Yet, this is not the first recession of its kind or first such debate. What has been unique is the extension of this recession into the homes (sometimes literally) and minds of Main Street. As a result, its explanation in laymen’s terms has abounded, sometimes at the cost of any systematic economic analysis. Yet, scholars have also created a wealth of literature that has delivered thorough and meaningful economic interpretation through behavioral models. Recent publications have pointed to “rugged individualism”, “rampant materialism” (Stiglitz, 2010) and behavior motivated by Keynes’ “animal spirits” (Shiller, 2009) as key components in creating the crisis. Concurrently, these authors have pointed to systematic failures such as a loss of trust and community created by the economic system (Stiglitz, 2010).

As with any catastrophe, the aftermath of this recession has been filled with speculation as to its causes. Most have pointed to excessive risk taken by banks, failures in regulation and other economic variables. Surprisingly, there has been a dearth of discussion concerning behavioral causes. But, many times, emotion and personality are prominent factors in an individual’s decision-making process, even in economic decisions (Rick, 2008). In order to understand the underlying economic pathways that instigated the crisis, research should emphasize personality traits such as narcissism and the role of social norms such as fairness in economic activity.
The field of behavioral economics has embraced this approach of combining social phenomena with economics. Decisions can be divided into a two-by-two matrix determined by motives that are economic and non-economic and responses that are rational and irrational (Shiller, 2009). Over the past three centuries, economists have meticulously investigated only one of the four areas, evaluating economic decisions through the context of rational actors and providing explanations that have predicted economic phenomena better than any other model (Friedman, 1966). As the field has grown and evolved, more effort has been devoted to providing explanations for phenomena that the rational model has failed to capture by relaxing the initial assumption. Behavioral economics is one such adaptation, as it relies on the findings of psychology and sociology to explain economic behavior in a new context.

The behavioral approach, while relatively new to economic thought, has found relevance in the wider universe of economics, challenging core assumptions as well as more peripheral ideas. It identifies areas where traditional economic models do not predict the actions observed in markets or experimental settings. One such area is the role of fairness in economic decisions, a topic ripe for behavioral research, as it involves variables such as emotion that are typically overlooked by traditional cost-benefit decision models. Economists have attempted to understand and explain fairness using game theoretical models including multi-stage bargaining games with varied payoffs. Under rational expectations, all players in a game should act in order to maximize their payoffs. Yet, repeatedly researchers have found instances where players do not follow this strategy and instead revert to some other instinct or guide to make their decisions. In
order to understand these reversions, economists have turned to sociology and psychology to identify the motives for these actions.

In doing so, researchers have learned more about how personality, emotion, or simple geography can significantly affect various economic choices. Under the rational assumption, such “non-economic” factors would have no role in their models; yet, more recently they have become the center of the analysis. The conventional economic belief that all humans are motivated by self-interest has been challenged. Consequently, a natural area of psychology to investigate from an economic perspective is the personality trait of narcissism, a trait defined by self-interest. By economists’ measures, narcissistic individuals should best exemplify their predictions.

Before embarking on a serious study of narcissism, we must define it. The use of the word narcissism in place of “selfish” is ubiquitous, but somewhat misleading. The nature of narcissism is far more elaborate and its effects extend far beyond simple egotistical behavior. Through experiments, researchers have found significant relationships between narcissism and a variety of undesirable societal results. Recent studies have extended this exploration into the economic universe, isolating narcissistic traits such as vanity, uniqueness, and entitlement and observing their effect on economic decisions (Twenge, 2009). These efforts have revealed irrationalities within narcissistic individuals that significantly alter their economic decisions, many times with suboptimal outcomes.

With these variables in mind, a number of pertinent questions arise. First, how do personality traits affect, if at all, individuals’ economic actions? Do egoists treat their economic choices differently than others? If so, what motives drive these choices?
Moreover, if social interactions are important in economic outcomes, are self-interested actors who shun accepted social norms really behaving optimally? And finally, how have our public institutions affected the evolution of these traits and, by extension, economic outcomes? In other words, borrowing from Stiglitz (2010), “what kind of society would we like to have”, and “are we creating an economy that is helping us achieve those aspirations?”

* * * *

This paper seeks to answer these questions. First, it will discuss the role of social norms, namely fairness, as constraints on decisions and the implications of this for economic models. The next section will explore narcissism as a psychological disorder and the revealed tendencies that accompany the disorder. The third section will empirically investigate the relationship between narcissism and fairness by employing two well-known instruments, the Narcissistic Personality Inventory (NPI) and the Ultimatum Game. The extent to which a personality trait affects offers in a game, according to the rational model, should be negligible. This thesis finds that this result is supported by the data, and reports the possible intuition behind such a finding and challenges and extensions that may prove fruitful for further research.
2. Fairness and Its Role in Economics

Traditional economic theory has been built upon the fundamental assumption that marketplace actors are “rational” and operate within strictly defined legal, budget and information constraints. This section highlights additional assumptions and constraints that attempt to create a more realistic theory of human decision-making.

2.1. Social Norms: The 4th Constraint

One of the founding fathers of rational normative economics was Milton Friedman, who wrote: “[The task of economics] is to provide a system of generalizations that can be used to make correct predictions about the consequences of any change in circumstances” (Friedman, 1966). More recently, another movement has arisen called experimental economics, in which the hypotheses and normative predictions of traditional economics are taken into the laboratory to test their conformity to positive results\(^1\). Similar to the natural sciences, experimental economics is based on an adapted scientific method: hypotheses are made based on observation, tested, and re-formulated or explained based on experimental data. Yet, unlike molecules and atoms, economics is a social science that involves the hearts and minds of human beings. It thus yields a wide array of interpretations. In order to better understand results, helpful insights can be obtained from the study of human nature, namely psychology and sociology.

In developing normative predictions, of course, certain assumptions must be made. The key assumption of traditional economics is that all humans are self-interested actors. Building on this fundamental premise, economists have constructed a number of

\(^1\) Many traditional economists have argued that the results of experimental economics do not represent normative actions in a reliable way. Vernon Smith (1991) provides a valuable discussion on the topic in *The Contrast between Economics and Psychology.*
subsequent assumptions, ranging from profit-maximizing firms to the efficient market hypothesis. In addition to assumptions are constraints. In economic situations, there are a number of forces that limit the availability of choices or decisions. Traditionally, these constraints are identified as: (1) budget, (2) information, and (3) legal (Fehr and Gachter, 2000). Yet, models based on these assumptions and constraints are not always best at predicting the observed phenomena, presumably because the assumptions or constraints employed are not exhaustive or well specified.

A growing field in economic research has posited that one gap in these constraints is the role of social norms in determining human behavior. Fehr and Gachter provide a useful definition of what exactly qualifies as a social norm, formulated as follows:

A social norm is: 1) a behavioral regularity; that is 2) based on a socially shared belief of how one ought to behave; which triggers 3) the enforcement of the prescribed behavior by informal sanctions. (Fehr and Gachter, 2000)

Jon Elster (1989) categorizes an extensive list of social norms, including norms of “cooperation” such as tax compliance, “distribution” norms that dictate allocations of income or goods, and norms of “reciprocity” which direct individuals to return favors done to them by others. Economists have identified a number of examples in which these social norms play a role in real world markets. One such example is provided by a study by Daniel Kahneman (1986) that investigates changes of prices and wages by a firm in response to movements in input prices. The study found that it is socially acceptable for a firm to raise prices or cut wages when profits are threatened and to maintain those prices when costs diminish; however, it is unacceptable to make the same changes to exploit shifts in demand (Kahneman, 1986). Thus, society tacitly approves of actions precipitated by market forces but condemns the same actions when they are motivated by changes in
consumer preferences. These conceptions of what is acceptable in regards to decisions do not exist within the traditional framework for economic analysis, yet normative evidence demonstrates they are at work in the market economy.

Many ask the question of whether these norms are solely tools to “dress up self-interest in more acceptable garb” (Elster, 1989). While such manipulations may occur, a number of examples exist in which individuals enforce social norms even at a cost to themselves, a tendency labeled “strong reciprocity.”

2.2. Fairness and Strong Reciprocity

The role of reciprocity and altruism in human society is a discussion that dates far back in the realm of sociology. Its appearance in economic discussions is a more recent occurrence, prompted by experimental results that conflict with traditional predictions. First, in order to evaluate the role of fairness in economics, fairness must be defined. John Rawls (1971) developed the theory of “justice as fairness”, and provided a well-defined formulation of a just society in his *Theory of Justice*:

“First, each person engaged in an institution or affected by it has an equal right to the most extensive liberty compatible with a like liberty for all; and second, inequalities as defined by the institutional structure or fostered by it are arbitrary unless it is reasonable to expect that they will work out to everyone’s advantage and provided that the positions and offices to which they attach or from which they may be gained are open to all” (Rawls, 1971).

His theory, thus, focuses on equitable shares and opportunities for all members of society and institutions that support this balance. Where Rawls appeals to logos, Alexis de Tocqueville (1835) makes an emotional argument:

*The passion for equality seeps into every corner of the human heart, expands and fills the whole. It is no use telling them that by this blind surrender to a passion they are compromising their dearest interests; they are deaf.* (Tocqueville, 1835)
Evidence from experimental economics demonstrates the power of this passion in individuals’ actions, as they repeatedly appeal to fairness when making economic choices, even if costly to themselves.

The controversy over the role of fairness in economics was initiated by the ultimatum game. To understand, a brief explanation of certain conclusions in game theory is appropriate. In any game of more than one stage, it is best for all players to work backwards, called backwards induction in economics, to determine what their best strategy is in the current period. The optimal pair of strategies that players choose, with no deviations to better payoffs available, is called the Nash equilibrium.

Now, consider the ultimatum game. It is a game with two players, one called the proposer and the other the respondent. The proposer is given the choice of how to split a sum of money, in this case $100, between him/herself and the respondent; the respondent then has the opportunity to either accept or reject this proposed split. If rejected, both players get $0. The ultimatum game, thus, has only two stages that can produce two outcomes. In the first, when the respondent accepts, both players get some split of the $100, call it x and 100-x; in the other case, rejection, both players get zero. Thus, if the respondent is maximizing his/her profits, this player should accept any offer greater than zero. Knowing this, the proposer should make an offer to maximize his/her profit, here $99. This result, (99,1), is called the sub-game perfect Nash Equilibrium (SGPNE) to the ultimatum game.

Yet, the lore of the ultimatum game comes precisely from the fact that when taken into an experimental setting, the predicted result was not observed (Guth et. al., 1982). In fact, most offers ranged from fifty to seventy dollars, with offers over seventy dollars
repeatedly being rejected. The most common and accepted explanation for this result is 
that players in this game are abiding by an unsaid rule of markets, not taken into account 
by the game theoretic profit-maximizing example given above. Many have called this 
“unsaid rule” fairness, the instinct of the proposer to give an equitable split in order to be 
fair to the respondent, and thus engender an acceptance of the proposal. By giving both 
simple and complicated forms of the game, Guth in fact found that players “did not 
deviate from the optimal behavior because of their difficulties in solving the game. The 
main reason seems to be that the rational solution is not considered as socially acceptable 
or fair” (Guth et. al., 1982).

In the thirty years since, research has continued, creating more complicated games 
and more robust models of human behavior in bargaining games. One widely cited game 
is called the public goods game, a variant of which was carried out by Fehr and Gachter. 
The researchers created a game in which each of four participants is given twenty tokens. 
Utility from keeping a token is one for the player keeping it, and utility from donating a 
token to the community pot is .4 for every player. Thus, if all players keep their twenty 
tokens, each gets a payoff of twenty; if, however, each invests all twenty tokens in the 
community pot, individual payoffs equal 32. By creating a game in which donating to the 
community pot was only preferred if three or more players did so, the researchers were 
able to measure the strength of social norms in eliciting the optimal result (Fehr and 
Gachter, 2000). The study also varied whether participants could view the contributions 
of the players around them in order to measure the power of “negative reciprocity”, or 
punishment, in the game. In the study, the researchers found that contributions increased 
when punishment opportunities existed, and overall welfare increased as a result. The
study thus demonstrates how social norms are established slowly over time, and maintained through punishment when deviations occur.

Others have replicated these results with a variety of other games. Matthew Rabin (1993) has posited a similar model, called fairness equilibria, in which individuals seek to help those who help them and hurt those who do not. He and Charness extend this model into what they label the “quasi-maximin” allocation: that players “are motivated to maximize the payoff of the minimum-payoff person with the desire to increase total payoffs” (Charness and Rabin, 2000). Others have focused on the reasons for rejection, with many explanations resulting. One is called the equity theory (Bolton, 2000), in which respondents are worried about their relative position to others, and therefore, when this difference becomes too large, they would rather nullify it than receive an insignificantly small amount. Pillutla and Murninghan’s research supports this result, finding that rejections are more frequent when comparisons of other offers were provided, and in fact, unfair offers created anger and spite in respondents (Pillutla and Murninghan, 1996). Thus, the context of an offer in comparison with others is important. Schweitzer and Gibson’s findings are consistent, as their results demonstrate that the explanation or justification of offers matters in determining the resulting acceptance or rejection of an offer, and that agents get a positive psychological benefit from punishing other unfair players (Schweitzer and Gibson, 2007).

The literature leads to an inevitable conclusion: punishment of unfairness is vital in sustaining social norms, even if this punishment comes at a personal cost. This practice is known as strong reciprocity. It defines the actions of agents who “are not the generally self-interested actors of traditional economics, since they value treating others fairly, and
will incur personal costs to do so. Nor are people the unconditional altruists of utopia thought, since they want to hurt free-riders and other norm-violators” (Bowles and Gintis, 1998). Thus, the evidence points to a more nuanced and empathetic conception of human beings than the solely self-interested actors that traditional economics assumes. And, the power of strong reciprocity is far reaching. Fehr and Gachter find that only a minority of norm-preserving agents – those who punish norm-deviating actors – is needed to motivate an entire group to cooperate.

Perhaps surprisingly, the world seems to follow the time-tested truism of the Golden Rule: most people treat others the way they would like to be treated, and punish those who desire living in a world of disloyalty, deception, and unfairness. One can think of human attitudes towards fairness as a continuum, ranging from perfect altruism to complete self-interest. Those individuals at the extreme of the spectrum are those who are punished, as society rebukes extremely selfish individuals and takes advantage of its overly generous members. Thus, society creates a self-sustaining equilibrium in the middle, propagated by a mechanism of punishment of norm-deviation.

2.3. Fairness Findings and Economic Theory

The inclusion of fairness as a constraint in economic theory is underemphasized, but not unprecedented. Bowles and Gintis (1998) provide an anecdote from economic history to demonstrate that models that incorporate social norms ex-ante can deliver optimal outcomes. Robert Axelrod, of University of Michigan, held a tournament to find the best strategy in an iterated prisoner’s dilemma game. In the famous game, the payoffs from mutual cooperation are higher than those from mutual defection, but outcomes with
mixed choices always favor the player who defected. In the tournament, a number of computer programs with varying strategies were pitted against one another and themselves. The winner among the fourteen models submitted was called tit-for-tat, which followed a simple strategy of cooperating in the first round, and then following whatever the partner did in the previous period in each successive period. Axelrod was surprised by the result, but noted the following:

This strategy for cooperation has three attributes that are essential for successful cooperation. The first is that it is nice: it begins by cooperating, and it is never first to defect. Second, tit-for-tat is punishing: it retaliates relentlessly against defection. Finally, tit-for-tat is forgiving: as soon as a defecting partner returns to cooperating, tit-for-tat returns to cooperating. (Bowles and Gintis, 1998)

Thus, the path to maximum payoffs was not one of calculated deception. Rather, it was one that gave attention to the socially beneficial traits of benevolence and forgiveness, and employed the mechanism of punishment to reinforce these traits in the partner.

These results carry over to real world observations as well, explaining a number of actions by firms and consumers that are not predicted by a rational model excluding the social norm constraint. Yet, from the experimental findings cited, it may not be appropriate to label these actions irrational. Rather, they are perhaps more rational than the traditional model of economics gives credit, as these actors predict and react to the emotions and tendencies of agents and do so in ways that maximize their payoff. Thus, even while strong reciprocity provides examples of agents bearing personal costs to sustain social norms, these costs may in fact be justified and repaid in full or more. The question, then, of whether the adherence to social norms is motivated by self-interest returns. The broad reach of the question is not within the scope of this thesis; however,
the question will be important in attempting to explain the rationale behind the action of narcissists in the ultimatum game.

3. Narcissism and Why It Matters

As non-economic variables have gained credibility in explaining economic phenomena, the search has grown for further interactions and relationships. This section explores the specific personality trait of narcissism and its implications for economic theory.

3.1. The Proliferation of Narcissism

Most everyone knows the term narcissism and nearly all use it freely to describe selfish or egocentric behavior. While such a formulation is not incorrect, it ignores the more detailed characteristics that the word formally addresses. Narcissistic Personality Disorder (NPD) is a diagnosable psychological disorder that describes individuals who display five of the nine documented narcissistic traits “describing a long-term pattern of behavior involving grandiosity, a lack of empathy, and a need to be admired” (Twenge, 2009). They nine criteria are listed here:

(1) Has a grandiose sense of self-importance (e.g., exaggerates achievements and talents, expects to be recognized as superior without commensurate achievements)
(2) Is preoccupied with fantasies of unlimited success, power, brilliance, beauty, or ideal love
(3) Believes that he or she is "special" and unique and can only be understood by, or should associate with, other special or high-status people (or institutions)
(4) Requires excessive admiration
(5) Has a sense of entitlement, i.e., unreasonable expectations of especially favorable treatment or automatic compliance with his or her expectations
(6) Is interpersonally exploitative, i.e., takes advantage of others to achieve his or her own ends
(7) Lacks empathy: is unwilling to recognize or identify with the feelings and needs of others
(8) Is often envious of others or believes that others are envious of him or her
(9) Shows arrogant, haughty behaviors or attitudes

*Diagnostic and Statistical Manual of Mental Disorders (DSM), 2000*

An important distinction must be drawn between clinically diagnosed cases of NPD and simply high levels of revealed narcissism. The difference is subtle but important, as the latter is not measured in a clinic but in society. Researchers have formalized an approach to measure the scale of narcissism in individuals, called the Narcissism Personality Inventory (NPI) (Raskin, 1988). An individual’s measure on the scale is determined by a survey that pairs forty narcissistic statements with non-narcissistic ones, assigning one point to each narcissistic trait chosen. No numerical threshold exists on the NPI to identify “problematic” levels of narcissism; however, people who score in the 90th percentile on the NPI scale are typically not diagnosed with NPD (Twenge, 2009). Thus, absence of clinical NPD does not relieve one of the troubles they may encounter due to their narcissistic personality.

A rise in NPI scores over the past twenty years has been documented across individuals of all sorts, spanning different ages and geographies. Among U.S. college students, NPI scores have increased consistently from 15.5 to 17.5 (Twenge, 2009). Research has shown that more “individualistic” societies typically exhibit higher narcissism (Foster, 2003); cultural norms in communal societies such as Scandinavia and China have also been observed to exhibit a marked shift to individualism in recent year (Twenge, 2009). Many have pointed to the increasing competitiveness and importance of credentials in the current global economy that has forced a growth in individual’s focus on the self. Others cite parental factors such as “overindulgence”, “permissiveness” and “enmeshment” (Horton, 2006) as key factors in the development of such traits. The exact
forces that have caused the rise in narcissistic tendencies are not the focus of this study. More important are the implications these tendencies hold for society.

3.2. Personality Traits of a Narcissist

This “narcissism epidemic” is troubling for a number of reasons. Traits such as those listed by the DSM are typically viewed negatively by society as they characterize the tendencies of people who do not value others. While the NPD recognizes traits of a narcissist, these traits are not readily observable, but rather inferred through actions or tendencies. The following section will outline a number of actions that serve as harbingers of narcissism in individuals.

By operationalizing narcissistic personality traits into a quantifiable measure (the NPI), researchers have been able to more systematically evaluate and interpret the relationship between narcissistic individuals and specific tendencies. This research has discovered a number of concerning connections between narcissists and their relationships with society, identifying symptoms that have grave implications economically, environmentally, and socially. For example, narcissists have been found to build less stable relationships, spend money they don’t have, and show more aggression than less egocentric peers (Twenge, 2009). Exline et. al. (2004) employ six different experiments to illustrate narcissistic entitlement as a barrier to forgiveness, an act that has been shown to benefit relationships and interpersonal harmony. In addition, research has shown narcissists are more competitive (Raskin and Terry, 1988) and act more impulsively when making decisions (Vazire and Funder, 2006). The above traits may not
all fit logically into the character of an individual who values him/herself over others; yet, the connection between egoism and its manifestations are not always so direct.

A literature that details the relationship between narcissism and elevated risk taking provides valuable insight into the thought process by which narcissists make decisions. Researchers have found convincing links between narcissism and risky activities such as gambling, aggressive driving, and sensation seeking (Foster, 2009a). In order to assess the basis for how a risky decision is made, the outcomes from any risk must be identified. They are reward and punishment. These “driving mechanisms” are captured by the concept of approach-avoidance motivation, a model that recognizes neurological systems that encourage movement toward desirable outcomes (approach motivation) or away from undesirable outcomes (avoidance motivation) (Foster, 2009a). The sensitivity of individuals to these two motivations constitutes how they make decisions toward risk. The rational model of economics assumes all actors have equal sensitivity to each mechanism.

Yet, unlike most other individuals, narcissists are oversensitive to rewards. One study (Foster, 2009a) assessed this link using the domain specific risk-taking scale (DOSPERT), an instrument that holistically evaluates attitudes across risk domains (five specifically: ethical, financial, health/safety, recreational, and social). It does so by assessing: (1) the likelihood that subjects will engage in thirty risky behaviors; (2) the perceived benefits from each action; and (3) the perceived risk from each action (Weber, 2002). The latter two sections provide context for the subjects’ choices in section one.

To test these sensitivities within narcissists, researchers used scores from the NPI and the final two sections of DOSPERT to reveal the magnitude of approach-avoidance
motivation. Results from the test duplicated past results of higher NPI scores correlated with elevated risk taking; more importantly, they showed that narcissism was positively linked to perceived benefits (significant correlation of 0.22) and unrelated (insignificant correlation of -0.02) to perceived risks (Foster, 2009a). In other words, narcissists are equally aware of the risks associated with an action as are non-narcissists, but they exhibit increased sensitivity to the perceived rewards. This irrationality leads narcissists to act impulsively and take more risks: they view the associated rewards as too good to pass up.

Given this discovery about narcissists, it is clear that these individuals not only act from the belief that they are better than others but also value the rewards of an action far more than the possible punishment that may result. Research goes on to show that these tendencies exhibit themselves in both the economic and social interactions of narcissists, as Foster shows that “narcissists are approach-oriented toward their friends and their money” (Foster, 2009b). This outcome has severe consequences when combined with findings concerning the role of fairness and reciprocity in economic interactions.

3.3. Narcissistic Traits and Social Norms

Specific questions about how narcissists think about and respond to social norms in the context of economics remain unanswered. It is possible that the relationship between narcissism and fairness is not trivial, as it is questionable whether self-interested actors will voluntarily forego opportunities or resources in order to share them with others. If narcissists believe they are special, and entitled to the rewards that come along with such status, would they also believe the rules of society do not apply to them? If so,
does this result in self-induced punishment by the rest of society? Moreover, what could this imply for the economy at large? If narcissistic individuals dominate a certain profession, do traditional social norms still rule, or does some other conception of accepted behavior become the expectation?²

We can form a number of prior hypotheses using the literature. Social norms, including fairness, endure due to society’s willingness to punish individuals who do not abide by them. It has been shown that when evaluating choices, narcissists are approach-motivated, weighing the perceived rewards from an action more than the possible punishment. Thus, in situations during which a narcissist can obtain extraordinary payoffs at the risk of severe punishment, it is not unreasonable to assume that the individual would frequently choose to take the risk. Additionally, narcissists believe they are superior to those who surround them. An inherent need to prove this belief to be true may motivate actors to do anything to get ahead, at the cost of social obedience. In the context of economics, “getting ahead” is most commonly believed to mean being wealthier and more materially endowed than one’s peers. Thus, if narcissists are given a choice of monetary reward at the cost of social punishment, they may judge the gains in social status from greater wealth to outweigh the possible penalties.

An equal argument can be made that narcissists are norm-preserving members of society. As individuals who believe they are special, many may count on others admiration to sustain this belief. If admiration stems more from upholding social norms than status gained from greedily obtained monetary superiority, then narcissists would choose the former. Alternatively, adherence to social norms could be a complement to

² For an enjoyable read about organizational narcissism and risk-taking in the collapse of Long Term Capital Management, read Mark Stein’s *Unbounded Irrationality: Risk and Organizational Narcissism at Long Term Capital Management* (2003).
wealth creation, rather than a detriment. This would support a model of economics that included social norms as a profit-maximizing constraint. From this, another question arises: do narcissists understand that wealth and fairness may be complimentary; or, since fairness may be a more circuitous pathway to monetary gain than deception and greed, do narcissists reject social boundaries for the more direct path? Perhaps most importantly, in which case will they be happier?  

4. An Experiment: Narcissism and the Ultimatum Game

The answers to these questions are not readily observable in the real world. In addition, many times experimental results are still ambiguous, as isolating motivations or dissecting the thought process of an individual in hopes of explaining their actions is difficult. Here, we attempt to do so by running an experiment that combines social and economic motivators. The next section details this experiment and its findings.

4.1. Methodology

Few studies have attempted to empirically answer the question of how narcissistic behaviors carry over to economic situations. While the research presented has demonstrated sub-optimal economic choices by narcissists, none has specifically investigated the interaction of narcissism with the social norms of fairness.

In order to do so, we employ the traditional instruments already mentioned, the Narcissistic Personality Inventory (NPI) and the ultimatum game. As described above, the NPI asks a series of forty questions, each allowing the subject to choose between a

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3 A wealth of happiness research argues that above a certain minimum, greater wealth does not deliver greater happiness. A good review exists in Daniel Gilbert’s *Stumbling on Happiness* (2006).
narcissistic and non-egotistical statement. One point is scored for each narcissistic option chosen; thus, scores range from zero to forty, with forty representing the score of a severely narcissistic individual. The ultimatum game utilized in this study is the same as the one described previously, with study subjects proposing a split of $100. While both instruments are well known in their respective fields, to our knowledge, the two have never before been employed simultaneously to gauge interactions.

These instruments were chosen for both simplicity and their broad acceptance in academic work. The efficacy of both instruments as perfect measures of narcissism or fairness has been challenged; however, due to binding constraints, more intricate experimental settings were impossible to execute. The NPI and ultimatum game were delivered over an online survey, distributed to Northwestern undergraduate students. While the ultimatum game is typically played in person, this thesis employed a hypothetical ultimatum game in which survey respondents were asked to play the game in the following manner:

Imagine you are asked to play a game. You are asked to propose a way of splitting $100 between yourself and another individual. You propose x, and the other individual gets $100-x. This individual has the choice to accept or reject your proposal. If he/she rejects, you both get $0. What amount of x will you propose?

The wording of the game is important, as it defines what is considered a fair or unfair offer. In this case, the question prompted subjects to propose their share, making high offers “unfair.” The forty questions of the NPI preceded this hypothetical game in the survey. The data was analyzed by calculating each respondents NPI score. Additionally, the seven sub-scores provided by the NPI scale (authority, self-sufficiency, superiority, exhibitionism, exploitativeness, vanity and entitlement) were calculated. Thus, by its completion, measures of both narcissism and fairness had been obtained.
It is inescapable that methodology affects experimental results, especially when monetary gains are at stake. Many have provided arguments discounting experimental settings and their ability to deliver the expected market outcomes, most notably citing insufficient incentives for subjects. Vernon Smith calls this the “decision cost” model, as it explains situations in which predicted outcomes are not observed because experimental settings fail to provide sufficiently large gains or losses. This criticism has proven true in some situations such as Bernoulli choice decisions (situations pairing payoffs with probabilities) and bilateral bargaining, where increased payoffs reduced standards errors around the predicted optimal outcomes (Smith, 1991). In this experiment, we expect that this bias will have a profound effect on the data, as the emotions, risk aversion, and other factors that motivate bargaining decisions are not in play. Due to the absence of money in this experiment, skewed ultimatum offers are expected. The direction of this bias is not clear. Monetary reward may cause proposers to keep more for themselves (upward bias); alternatively, it may make them more willing to appear generous and offer a more equitable split (downward bias).

Using a computer to play the game, rather than in-person, also biases results. Studies show that subjects were less likely to reject offers given by a computer than those given a person (Blount, 1995). Here, an analogous bias may be in effect, as proposers may offer less to an imaginary respondent. Moreover, regardless of respondent, proposers had no fear of rejection, as their offers were solely hypothetical in the game tested. Evidence shows that exceedingly high (unfair) offers elicit anger and spite in the respondent (Pillutla and Murninghan, 1996), something a proposer may try to avoid by
making a more equitable offer. Thus, in the absence of any respondent, it may be that the power of negative reciprocity diminishes completely, causing higher offers.

Another potential bias at work is called social desirability bias. This bias details the tendency for individuals to reply to surveys or personal questionnaires in a manner that will be viewed favorably by others (Randall, 1990). As narcissism is generally perceived as a socially undesirable trait, NPI scores are likely to underestimate the true level of narcissism in subjects. To mitigate this bias, we distributed the survey virtually (remotely over the Internet) and with no direct identifying information present. Nevertheless, the effect of this bias may not be problematic for the current study if we assume that all survey respondents are equally sensitive to social perceptions, as all offers would adjust in a consistent and equal manner. But, if some respondents are more preoccupied by these worries than others, the bias will be inconsistent across the sample and will affect the analysis. Answering this question is particularly difficult with regards to narcissism, since it is possible that egoists care more about their social perception than others. The opposite may also be true. Given only quantitative scores, there is no way to measure the exact effect of this bias, though we will assume a downward bias.

Lastly, since this study was conducted over a voluntary survey renders it vulnerable to any possible “positive response” bias that may exist within students who chose to take the survey. It is unclear the directional effect such a bias would have on measures of narcissism or fairness.

In order to evaluate the relationships between ultimatum offers and narcissistic personality traits, an econometric model was formulated and analyzed. The following two models were used:
Base:
\[ Ult\_offer = \beta_0 + \beta_1 NPI\_Tot + \beta_2 Male + \beta_3 White + \beta_4 Econ + \beta_5 Biz + \varepsilon \]

Augmented:
\[ Ult\_offer = \beta_0 + \beta_1 Authority + \beta_2 SSuff + \beta_3 Superiority + \beta_4 Exhibitionism + \beta_5 Exploit + \beta_6 Vanity + \beta_7 Entitlement + \beta_8 Male + \beta_9 White + \beta_10 Econ + \beta_11 Biz + \varepsilon \]

The models were run using simple OLS regressions. Both models attempt to explain the causative factors that produced the ultimatum offers of the respondents, with the augmented model estimating the offer using the seven NPI sub-score variables rather than the total NPI score. The demographic dummy variables of Male, White, Econ, and Biz are each valued at one when the respondent meets the criteria, with Biz defined as any student who recognized their post-college interest as pursuing a career in either finance or consulting, or earning an MBA.

We predict that ultimatum offers will be positively correlated with narcissism scores (NPI_Tot) and economics majors (Econ). Additionally, students interested in going into business (Biz) are expected to be more selfish in their offers. For the augmented model, signs were expected to be positive for superiority, exploitativeness (Exploit), and entitlement, as each of these characteristics denotes an individual who would feel more deserving of a larger share of the allotted $100.

4.2. Data

The online survey was distributed over a month-long period to Northwestern undergraduate students. Information regarding gender, race, academic major and post-college interest was recorded in addition to their responses to the NPI and hypothetical ultimatum game. Summary statistics of subject demographics are provided in Table 1.1.
<table>
<thead>
<tr>
<th>Table 1.1</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>112</td>
</tr>
<tr>
<td>Male</td>
<td>48%</td>
</tr>
<tr>
<td>Female</td>
<td>52%</td>
</tr>
<tr>
<td>White</td>
<td>72%</td>
</tr>
<tr>
<td>Asian</td>
<td>21%</td>
</tr>
<tr>
<td>African American</td>
<td>1%</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>4%</td>
</tr>
<tr>
<td>Native American</td>
<td>0%</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
</tr>
<tr>
<td>Economics</td>
<td>58%</td>
</tr>
<tr>
<td>Finance/Consulting/MBA</td>
<td>40%</td>
</tr>
</tbody>
</table>

A total of 112 students completed the survey, with nearly equal amounts being men (48%) and women (52%). A majority of these students were economics majors (58%) with a strong contingent (40%) being interested in pursuing careers in finance, consulting, or a MBA after graduation. The data is quite unbalanced with respect to race, as nearly three quarters of respondents were Caucasian (72%) and the rest mainly Asian (21%). Race and gender statistics do mirror the overall campus demographic of Northwestern University, though the data is overpopulated by Economics majors compared to overall student body (Northwestern University Institutional Research, 2009). Debate exists concerning the legitimacy of college campus populations as representative samples; in this case, a perfectly representative sample of a college campus was difficult to obtain.

We assume that each subject majoring in economics has learned the basics of game theory and backward induction, and therefore has the knowledge of how to approach the ultimatum game with this in mind. Due to such a large number of respondents being economics majors, the data and analysis surrenders itself to the fact that these students may give little thought to fairness when answering the final question,
rather reverting to providing the “correct” answer of (99,1) that their professors would desire. Of course, this desired answer, lacking any recognition of whether such an offer is socially acceptable (inclusive of the social norm constraint), may in fact not be “correct”, if social norms are included in a “rational” model.

The range of ultimatum offers, regardless of this possible “economics” bias, was quite large. Of the 112 respondents, offers spanned the entire scale from $0-$99.99. It is important to remember that the wording of the game prompted subjects to propose the share they would keep, making high offers “unfair.” We presume that a number of low offers, rather than motivated by extreme altruism or risk aversion, were due to misreading of the ultimatum prompt. As a result, regressions were run on two sets of data, one including all observations and another that removed any offers below $10. Only six such offers were in the set. Summary statistics of NPI scores, including sub-scores, and ultimatum offers are provided here (Table 1.2):

<table>
<thead>
<tr>
<th>Table 1.2</th>
<th>Possible</th>
<th>Minimum</th>
<th>Mean</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPI Total</td>
<td>0-40</td>
<td>4</td>
<td>16.38</td>
<td>34</td>
</tr>
<tr>
<td>Authority</td>
<td>0-8</td>
<td>0</td>
<td>4.96</td>
<td>8</td>
</tr>
<tr>
<td>Self Sufficiency</td>
<td>0-6</td>
<td>0</td>
<td>2.28</td>
<td>6</td>
</tr>
<tr>
<td>Superiority</td>
<td>0-5</td>
<td>0</td>
<td>1.75</td>
<td>4</td>
</tr>
<tr>
<td>Exhibitionism</td>
<td>0-7</td>
<td>0</td>
<td>2.02</td>
<td>7</td>
</tr>
<tr>
<td>Exploitativeness</td>
<td>0-5</td>
<td>0</td>
<td>1.84</td>
<td>5</td>
</tr>
<tr>
<td>Vanity</td>
<td>0-3</td>
<td>0</td>
<td>1.27</td>
<td>3</td>
</tr>
<tr>
<td>Entitlement</td>
<td>0-6</td>
<td>0</td>
<td>2.09</td>
<td>5</td>
</tr>
<tr>
<td>Ultimatum Offer</td>
<td>$0-$100</td>
<td>$0.00</td>
<td>$58.84</td>
<td>$99.99</td>
</tr>
</tbody>
</table>

While the typical skepticism over survey data and the positive response bias must be taken into account, we believe this to be negligible considering the large range of NPI scores and ultimatum offers observed.

As with most empirical work, cross-correlation between the variables (multicollinearity) was a challenge to the analysis. We specifically believed $NPI_{Tot}$,
Econ, and Biz might have high levels of correlations with one another. Table 1.3 presents correlations between these regressors in the model.

**Table 1.3**

<table>
<thead>
<tr>
<th></th>
<th>NPI</th>
<th>Econ</th>
<th>Biz</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPI</td>
<td>1.00</td>
<td>0.04</td>
<td>0.21</td>
</tr>
<tr>
<td>Econ</td>
<td>1.00</td>
<td>0.42</td>
<td>1.00</td>
</tr>
</tbody>
</table>

The relationship between narcissism and economics was not particularly troubling, with a correlation of only .04. Students interested in pursuing business (Biz), however, had much stronger correlations to both NPI_Tot and Econ, reported at .21 and .42 respectively. The possible effect of this multicollinearity on the results is inaccurate and insignificant estimates of individual coefficients. In our model, both effects were evident and will be discussed in the next section.

4.3. Results

Table 2.1 shows the results of the OLS regression on the base model, with both data sets analyzed. The data set with outliers removed is a tighter fit (adjusted R-squared of .21) than the set with more observations. As a result, the “No Outliers” data set will be focused on in the analysis. In this regression, NPI_Tot had a coefficient of .28, meaning that each additional point on the narcissism scale increased ultimatum offers by $0.28. The coefficient, however, was not statistically significant even at a 10% level, demonstrating that there may be no causal relationship between ultimatum offers and narcissism. Thus, the model does not support the hypothesis that self-interested narcissists will demand more money for themselves. Again, this insignificance could mean a number of things. First, it may be that the traits of narcissism do not carry over
into the economic realm of bargaining, and in fact these individuals believe they are on a level playing field. Alternatively, it may be that social norms, and their preservation through punishment, have trained narcissists, like others, to respect and follow expected societal rules, in this case, to offer a fairer split. Lastly, it may be that the lack of variation in the data or small sample size could be insufficient to provide robust results.

Other variables included the demographic dummies, with only Econ and Biz having statistical significance at 1% and 5% levels respectively. Gender and race had no statistical bearing on the offer. The regression estimates that Economics majors tend to keep $19.58 more than non-Economics majors, supporting the hypothesis that ultimatum offers are positively correlated with an Economics major. Yet, individuals who are both Economics majors and going into business (Finance, Consulting, or MBA) make offers only $11.68 higher. The negative coefficient (-7.90) on Biz was unexpected, however, it could be a result of the correlation between it and Econ. This would imply that the real affect of an Economics major is slightly less than $19.58. A regression testing the base model with Biz excluded supported this conclusion, returning a coefficient of $16.74 on Econ with statistical significance at the 1% level. It is difficult to identify whether this positive coefficient is due to knowledge of game theory and backward induction or an indication that students who major in Economics tend to be more selfish in their bargaining behavior. There is no way to isolate this distinction with the available data.
Table 2.1 - Base Model

<table>
<thead>
<tr>
<th>Variable</th>
<th>With Outliers (n=112)</th>
<th>No Outliers (n=106)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cons</td>
<td>39.1795 **</td>
<td>50.52719 **</td>
</tr>
<tr>
<td>NPI_Tot</td>
<td>0.3836878</td>
<td>0.2844734</td>
</tr>
<tr>
<td>Male</td>
<td>-2.261713</td>
<td>-0.8412494</td>
</tr>
<tr>
<td>White</td>
<td>8.170173 †</td>
<td>-1.185306</td>
</tr>
<tr>
<td>Econ</td>
<td>19.80509 **</td>
<td>19.58271 **</td>
</tr>
<tr>
<td>Biz</td>
<td>-7.295093</td>
<td>-7.898828 *</td>
</tr>
</tbody>
</table>

Summary Stats

<table>
<thead>
<tr>
<th></th>
<th>With Outliers</th>
<th>No Outliers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adj R²</td>
<td>0.1373</td>
<td>0.2116</td>
</tr>
<tr>
<td>Root MSE</td>
<td>20.558</td>
<td>15.936</td>
</tr>
</tbody>
</table>

†, *, ** denote significance at 10, 5, 1% levels respectively

Table 2.2 shows the results of the regression using the augmented model. Rather than testing the total NPI score, this model breaks it down into sub-scores that denote specific traits of a narcissist. Again, the “No Outliers” regression better fit the data (adjusted R-squared of .19). Here, significance in the explanatory variables was again rare. When separated into seven sub-scores, only one score, exhibitionism, was significant at the 10% level. Nonetheless, the hypothesis that superiority, exploitativeness (Exploit), and entitlement are positively correlated with offers is supported by the data. Curiously, specific traits (Self-sufficiency and exhibitionism) returned negative coefficients, implying that some aspects of narcissism motivate individuals toward a more equitable (fairer) offer. Again, though, none of these narcissistic explanatory variables were statistically significant and thus have no explanatory power other than Exhibitionism.

Once again, dummy variables were included, with the same two (Econ and Biz) being statistically significant. As in the base model, the coefficients were opposite signs,
with \( Econ \) being positive (17.59) and \( Biz \) being negative (-8.16), indicating that Economics majors kept $17.59 more than other majors, while Economics students interested in business kept only $9.43 more. Again, the negative sign on \( Biz \) was unexpected, and running a regression with \( Biz \) excluded returned a smaller coefficient for \( Econ \) of $14.80 with significance at the 1% level.

<table>
<thead>
<tr>
<th>Variable</th>
<th>With Outliers (n=112)</th>
<th>No Outliers (n=106)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cons</td>
<td>38.2089 **</td>
<td>50.1512 **</td>
</tr>
<tr>
<td>Authority</td>
<td>0.9598326</td>
<td>0.7712272</td>
</tr>
<tr>
<td>Ssuff</td>
<td>-1.215676</td>
<td>-0.5795717</td>
</tr>
<tr>
<td>Superiority</td>
<td>1.35105</td>
<td>1.097619</td>
</tr>
<tr>
<td>Exhibitionism</td>
<td>-1.646905</td>
<td>-1.744273 †</td>
</tr>
<tr>
<td>Exploit</td>
<td>2.083875</td>
<td>1.68743</td>
</tr>
<tr>
<td>Vanity</td>
<td>0.2577361</td>
<td>0.8932337</td>
</tr>
<tr>
<td>Entitlement</td>
<td>1.601554</td>
<td>0.557742</td>
</tr>
<tr>
<td>Male</td>
<td>-2.875938</td>
<td>-1.440553</td>
</tr>
<tr>
<td>White</td>
<td>8.378497 †</td>
<td>-0.8523845</td>
</tr>
<tr>
<td>Econ</td>
<td>18.08247 **</td>
<td>17.59012 **</td>
</tr>
<tr>
<td>Biz</td>
<td>-7.635119</td>
<td>-8.162382 *</td>
</tr>
</tbody>
</table>

* Summary Stats
- Adj \( R^2 \): 0.122, 0.1981
- Root MSE: 20.74, 16.071

†, *, ** denote significance at 10, 5, 1% levels respectively

According to the base model, including variables without statistical significance, students of varying demographic and academic backgrounds and narcissistic characteristics make different ultimatum offers. Table 3 summarizes the model’s predictive estimates by choosing values for each variable and using the coefficients given by the base “No Outliers” regression.
Table 3

<table>
<thead>
<tr>
<th></th>
<th>African American Female</th>
<th>Asian Male</th>
<th>White Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Narcissism (NPI = 4)</td>
<td>Psychology Major</td>
<td>Average Narcissism (NPI = 16)</td>
<td>High Narcissism (NPI = 29)</td>
</tr>
<tr>
<td></td>
<td>Graduate School</td>
<td>Political Science Major</td>
<td>Economics Major</td>
</tr>
<tr>
<td>Ultimatum Offer:</td>
<td>$51.51</td>
<td>Ultimatum Offer: $54.34</td>
<td>Ultimatum Offer: $68.52</td>
</tr>
</tbody>
</table>

High and low narcissism were defined as two standard deviations away from the mean. The variable values chosen show the discrepancy in offers driven by different demographic and personality characteristics. The results are complicated by the fact that \( Biz \) returns a negative coefficient. For example, the offer of the white male would be higher if he wasn’t an investment banker. Analogously, \( Econ \) overshadows the effect of high NPI, as the offer of the Asian male attending Law School would be over $70 if he were an Economics major. The results for both of these additional hypothetical students go against the ex ante hypotheses.

A number of the other hypotheses formed from surveying the relevant literature were not supported by the data gathered. Insignificance in explanatory variables was a large downfall of the model, which may be the result of the insufficient size of or variation in the sample. Additionally, it may be that the model did not adequately control for other explanatory variables, driving inconsequential results from the chosen variables. The presence of multicollinearity was especially challenging to the model, as nearly every variable showed some level of correlation to another. This was not surprising considering the model included a “personality” measure as an explanatory variable, which would be expected to have some relation to demographic data. Dropping \( Biz \) from the regressions did remedy this slightly, adjusting down the estimate of the \( Econ \)
coefficient. The estimate of the variable of interest ($NPI_{Tot}$), however, was still not significant.

Other possibilities for inconclusive results include the methodological biases mentioned earlier. Without proper incentives or sufficient motives to engender realistic actions, it may be that this experiment was not able to provide robust explanations for ultimatum offers. Extensions or variations of this study that more systematically isolate and investigate causative factors may provide more conclusive answers regarding the relationship or affect of narcissism on ultimatum offers. More broadly, research into social norms as economic constraints and the various explanatory forces that cause individuals to obey or violate these norms would be instructive.

5. Conclusions

This thesis has investigated the role of narcissism in bargaining behavior in the ultimatum game. A number of questions were posed, each motivated by the recent recession and financial crisis. Data from Northwestern University undergraduates was collected and employed in OLS regressions that tested the relationship between narcissism and ultimatum offers, using both a base and augmented model. These regressions provided little in conclusive evidence of causal relationships. The results do show that students who learn the theoretical workings of markets and rational choice as Economics majors tend to be more selfish (or rational) when proposing splits of $100. The expectation, however, that self-interested actors high in narcissism would be equally selfish was not supported. Thus, we must conclude that narcissism does not significantly influence fairness. The implications of these findings are difficult to analyze due to their
 statistical insignificance, which may be attributed to a wide array of explanations. Biases caused by methodological choices by the experimenter most likely created insufficient conditions to engender true market activities. In addition, the inability to obtain a large and varied sample made statistical analysis more difficult.

These challenges aside, the results can be interpreted to indicate that the variables chosen simply do not motivate bargaining behavior. This outcome contradicts our prior hypotheses guided by previous research. If it is the case that narcissists are just as economically fair as others in society, this is encouraging news. Narcissism has been shown to create an array of negative side affects. It may be, however, that narcissists are incentivized like all others to obey and sustain social norms.

These norms are a part of everyday life and play a vital role in creating a society that values and trusts its members. The limits of these norms do not end when economic situations arise. In the world of economic research, the role of these societal factors has not been widely considered. Their inclusion in models as a constraint on economic actions may explain a number of actions currently at odds with the narrowly defined hyper-rational *Homo Economicus*. Participation in social norms by individuals is not always guaranteed. We put forth a hypothesis that certain individuals, those who are narcissistic, are more prone to disobey norms than most others. To our knowledge, the direct relationships have not been previously tested empirically using the NPI and ultimatum game. Unfortunately, significance was largely absent from the model.

Investigating this topic did lead us to the broader conclusion that generalizations of multidimensional personality type such as narcissism as pro or anti-social are dangerous. The search for explanations made it apparent that the many aspects of
narcissism may have different and conflicting effects: some narcissists may make
generous offers in an effort to prove their moral superiority, while others may propose
less equitable splits because they feel more entitled. As a result, it is difficult to prescribe
universal claims or declare certain actions the results of narcissism.

Yet, we maintain that the questions asked by this thesis are pressing and require
more investigation. A rising number of individuals around the world are becoming more
and more interested in their own standing in the increasingly competitive and global
marketplace. The manifestations of this growth in narcissism, in many cases, have been
negative for both the individuals and society. While reversing this trend is unlikely,
understanding its implications on different social, economic or environmental interactions
is important.

Possible extensions could be to employ different experimental games that test
fairness and obedience of social norms, such as the public goods game mentioned
previously. Or, rather than test the decisions of narcissists as proposers in the ultimatum
game, investigate their retaliation decision as a respondent in the game. Such an
experiment may provide insightful findings that expose a double standard in narcissists:
they give less, and expect more. Lastly, providing sufficient incentives to elicit reactions
consistent with real world situations is important for collecting reliable data. Hopefully,
future approaches provide more robust results and answer questions concerning economic
motivations and such motivations’ interactions with psychological and sociological
phenomena.
6. Appendix

6.1. The Narcissistic Personality Inventory

The NPI consists of the following forty questions, used to test narcissism in this thesis and a number of studies over the past thirty years. A scoring rubric is also included.

1. A. I have a natural talent for influencing people.
   B. I am not good at influencing people.

2. A. Modesty doesn't become me.
   B. I am essentially a modest person.

3. A. I would do almost anything on a dare.
   B. I tend to be a fairly cautious person.

4. A. When people compliment me I sometimes get embarrassed.
   B. I know that I am good because everybody keeps telling me so.

5. A. The thought of ruling the world frightens the hell out of me.
   B. If I ruled the world it would be a better place.

6. A. I can usually talk my way out of anything.
   B. I try to accept the consequences of my behavior.

7. A. I prefer to blend in with the crowd.
   B. I like to be the center of attention.

8. A. I will be a success.
   B. I am not too concerned about success.

9. A. I am no better or worse than most people.
   B. I think I am a special person.

10. A. I am not sure if I would make a good leader.
    B. I see myself as a good leader.

11. A. I am assertive.
    B. I wish I were more assertive.

12. A. I like to have authority over other people.
    B. I don't mind following orders.

13. A. I find it easy to manipulate people.
    B. I don't like it when I find myself manipulating people.
14. A. I insist upon getting the respect that is due me.
   B. I usually get the respect that I deserve.

15. A. I don't particularly like to show off my body.
   B. I like to show off my body.

16. A. I can read people like a book.
   B. People are sometimes hard to understand.

17. A. If I feel competent I am willing to take responsibility for making decisions.
   B. I like to take responsibility for making decisions.

18. A. I just want to be reasonably happy.
   B. I want to amount to something in the eyes of the world.

19. A. My body is nothing special.
   B. I like to look at my body.

20. A. I try not to be a show off.
   B. I will usually show off if I get the chance.

21. A. I always know what I am doing.
   B. Sometimes I am not sure of what I am doing.

22. A. I sometimes depend on people to get things done.
   B. I rarely depend on anyone else to get things done.

23. A. Sometimes I tell good stories.
   B. Everybody likes to hear my stories.

24. A. I expect a great deal from other people.
   B. I like to do things for other people.

25. A. I will never be satisfied until I get all that I deserve.
   B. I take my satisfactions as they come.

26. A. Compliments embarrass me.
   B. I like to be complimented.

27. A. I have a strong will to power.
   B. Power for its own sake doesn't interest me.

28. A. I don't care about new fads and fashions.
   B. I like to start new fads and fashions.

29. A. I like to look at myself in the mirror.
B. I am not particularly interested in looking at myself in the mirror.

30. A. I really like to be the center of attention.
   B. It makes me uncomfortable to be the center of attention.

31. A. I can live my life in any way I want to.
   B. People can't always live their lives in terms of what they want.

32. A. Being an authority doesn't mean that much to me.
   B. People always seem to recognize my authority.

33. A. I would prefer to be a leader.
   B. It makes little difference to me whether I am a leader or not.

34. A. I am going to be a great person.
   B. I hope I am going to be successful.

35. A. People sometimes believe what I tell them.
   B. I can make anybody believe anything I want them to.

36. A. I am a born leader.
   B. Leadership is a quality that takes a long time to develop.

37. A. I wish somebody would someday write my biography.
   B. I don't like people to pry into my life for any reason.

38. A. I get upset when people don't notice how I look when I go out in public.
   B. I don't mind blending into the crowd when I go out in public.

39. A. I am more capable than other people.
   B. There is a lot that I can learn from other people.

40. A. I am much like everybody else.
   B. I am an extraordinary person.

Scoring Rubric for NPI:
Assign one point for each response that matches the key.

1, 2 and 3: A
4, 5: B
6: A
7: B
8: A
9, 10: B
11, 12, 13, 14: A
The average score for the general population is 15.3.

The seven component traits by question:
• Authority: 1, 8, 10, 11, 12, 32, 33, 36
• Self-sufficiency: 17, 21, 22, 31, 34, 39
• Superiority: 4, 9, 26, 37, 40
• Exhibitionism: 2, 3, 7, 20, 28, 30, 38
• Exploitativeness: 6, 13, 16, 23, 35
• Vanity: 15, 19, 29
• Entitlement: 5, 14, 18, 24, 25, 27
7. Bibliography


Stein, Mark. 2003. “Unbounded Irrationality: Risk and Organizational Narcissism at


