

INDIVIDUAL DIFFERENCES IN THE SOCIAL  
PSYCHOLOGY OF MONEY

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A Thesis  
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to the Faculty of  
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In Partial Fulfillment  
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Master of Arts  
in  
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Psychological Science Option

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by  
Jason Anthony Tate  
Summer 2009

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## DEDICATION

This work is dedicated to the memory of my mother, Patsy Lee Cooper, who taught me that there was more to value in life than money.

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## ABSTRACT

### INDIVIDUAL DIFFERENCES IN THE SOCIAL PSYCHOLOGY OF MONEY

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The present study examined individual differences in materialism as a moderator of the psychological consequences of money. Reminders of money have been shown to affect a sense of self sufficiency in individuals, resulting in both more autonomous behavior and less helpfulness. Participants were given a personality self-assessment questionnaire, with items including measures of materialism, socioeconomic status, and subjective well being. They then completed a puzzle task while either being reminded of money (via a poster) or not. Reminders of money did not affect whether the participants sought help, wanted help to be available to them, or wanted to work alone or with a partner. Reminders of money did not influence how much help participants offered with one exception: participants scoring high on materialism offered significantly less help when exposed to the money reminder, as compared to individuals scoring low

on materialism. Materialism was not found to be related to socioeconomic status or subjective social status, but was found to be negatively related to life satisfaction.

## CHAPTER I

### INTRODUCTION

Money exists as a distinct entity that is both central and unique within the human experience. It is an all-engrossing preoccupation in our culture: the acquisition of money, possessions, and the conspicuous display of material wealth. It is the focus of industry, marketing, and advertising; the recurring theme in consumer culture, media, and education. Pundits decry the choices made by economists, politicians, and individual consumers. The flow of money is studied in business and economic classes, the effects of this flow described by sociologists and anthropologists. However, despite the centrality of money to our personal and social lives, the field of psychology has until recently said little on the subject.

Why has the discipline that has examined so thoroughly the universal and individual differences of the human condition had so little to say about such a fundamental aspect of the human experience? One clue may be the early collusion of psychology and consumerism, particularly in the field of advertizing. John B. Watson helped found the technology of behaviorism, and then took his talents to Madison Avenue (Kasser & Kanner, 2004; Kasser, 2002). Another reason may be that it is difficult to examine the effects of consumer culture, as we are all actively shaped by the ideologies of the culture in which we reside, which makes it difficult to pull back our

focus and imagine an alternative (B. Schwartz, 2007). Our relationship with money is complex and pervasive, and many view money and its uses as a natural state of human affairs, comparable to an organism breathing or mating (Whybrow, 2007). To stand back from such a ubiquitous phenomenon, and be able to objectively examine both its form and interactions, suggests quite a challenge for the observer. Fortunately, this is a challenge that has been undertaken by a new generation of researchers who seek to examine both the universals as well as the individual differences in our relationship with money.

The term *money* is being used here to refer to money as a “thing in itself” rather than concepts such as property, possessions, or wealth (Lea & Webley, 2006a; Vohs, Mead, & Goode, 2006). Although money is often conceptualized by economists as a tool, a rational vehicle for obtaining needs and realizing goals, there is plentiful evidence that human beings do not interact in a neutral way with money. In addition to using money as a tool that can be rationally used in the pursuit of specific goals, we imbue money with meaning, taboos, and obligations (Zelizer, 1997). We earmark money for different purposes, based on both the source of the money and our social position relative to the power structure within our family and communities. Money itself asserts an influence on our perception: research participants have remembered money as possessing larger physical dimensions than its actual measurements indicate, and devalued currency is perceived as smaller than it really is (Furnham & Argyle, 1998).

Money has been adopted in every culture that has come into contact with it, quickly displacing indigenous barter systems (Lea & Webley, 2006b). Its influence has transformed every corner of the globe. Continents have been invaded and indigenous

people displaced by the allure of easy money, from mythical golden cities to “blood diamonds” and “black gold.” In the past century wars have been launched and populations decimated over commodities of every type, and the profits they represent. However, the rising tide of affluence has also led to a standard of living previously unheard of, and an overall life expectancy nearly double what it has been in the past. Charities and social safety nets have arisen to care for those without resources, particularly in the developed world, and some progress is being made on global health and nutrition. Money is found playing a central role in both the highest as well as the lowest examples of the human experience.

Money is most typically conceived of as used as a tool: a means to get what we want (Lea & Webley, 2006a). In addition to its function as a medium of rational exchange, money is also typically used as a tool for managing social relationships, conferring both power and sexual attraction (Ahuvia, 2007). However, the interaction of the “perfect” tool of money with our evolved social mechanisms has meant that money is imbued with far more power than can be explained by its function as a tool alone. This has led some to propose that money also acts like a drug, hijacking our natural reward mechanisms to produce an illusory incentive at the cognitive level (Lea & Webley, 2006a).

Money produces reliable behaviors in individuals, even if these behaviors are not suggestive of the neutral, rational model of behavior postulated by economists. Money appears to focus individuals inward: to focus on their own needs as well as inputs and outputs, to the detriment of their social relationships (Vohs, Mead, & Goode, 2008). When people are reminded of money, they tend to work harder on tasks without asking for help. However, they also tend to offer less help to others who ask for it, they place

more physical distance between themselves and others, and they state a preference to work alone (Vohs et al., 2006), even when given the opportunity to interact with family and friends (Vohs et al., 2008). This state of “self-sufficiency” has both positive as well as negative aspects: while it leads to an increase in self directed behavior, as well as improved task performance, it is also associated with anti-social behavior, such as cheating for financial gain (Gino & Pierce, in press) as well as unhelpfulness (Vohs et al., 2006).

One individual difference variable that may be associated with the social and psychological consequences of money is materialism. Materialism is a trait or value characterized by placing a high relative importance on money and material possessions (Kasser, 2002). People who have a materialistic orientation define success with material possessions. This often presents a conflict, because materialistic values have been demonstrated to be diametrically opposed to values relating to community, family, and universalism (Kasser, Cohn, Kanner & Ryan, 2007). The cognitive dissonance produced by the attempt to simultaneously hold communal and materialistic values leads to a wide range of mental health repercussions (Cohen & Cohen, 1996; Burroughs & Rindfleisch, 2002). First and foremost, a materials value orientation is negatively related to subjective well being for most everyone except for the rich (Nickerson, Schwarz, Diener & Kahneman, 2003). Just as reminders of money have been shown to turn our focus inward and away from others, wanting money seems to turn us away from community.

However, whether materialism and money orientation have a deleterious effect on humanity, or are instead the embodiment of the very best aspects of our culture and society, is a matter of fierce debate. Many have noticed the correlation between

income, wealth, and life satisfaction, possibly explained by the mediating effect of material resources on the negative responses to unexpected life circumstances (Johnson & Krueger, 2006). Frey & Stutzer (2002b) make the point that unemployment and inflation lead to unhappiness. They find that a rise in income leads to small gains in happiness. Many who expound the desirable effects of money motivation believe that material orientation and capitalism reflect a “natural law,” or inevitable expression of human nature. “A market culture is essentially the ordering of human instinctual striving through traditional sharing practices” (Whybrow, 2007, p. 57). Finally, to those who would decry the decline of community, family, and autonomy in market societies, there are those who proclaim that “Capitalism *is* the *system* of freedom” (Locke, 2007, p. 39, italics in the original), as well as those who note that North Americans are some of the most generous, equitable and altruistic people in the world (Henrich, 2007).

### The Present Study

The present study sought to identify the interaction between the personality trait of materialism and the social psychological effects of money. Are people who place a high value on money differentially affected by reminders of money? Highly materialistic people may be predisposed to individualistic pursuits, which could be more readily influenced by the self-sufficiency cues of money reminders. Further questions surround the interaction between socioeconomic status and materialism in general, as well as the social psychological consequences of being reminded of money, in particular. Although some evidence suggests that materialism appears to be related to lower socioeconomic status (Rindfleisch, Burroughs, & Denton, 1997; Belk, 1985), there has

been very little research investigating the relations between socioeconomic status, materialism, and money.

As a replication and extension of Vohs et al. (2006), I investigated the effects of reminding individuals of money on their willingness to offer to help. First the participants completed an 84-item personality self-report questionnaire, containing standardized measures related to materialism (Richins & Dawson, 1992), subjective well being (Diener, Emmons, Larsen, & Griffin, 1985), socioeconomic status, and other attributes. Next I primed participants by presenting them with images of either U.S. hundred-dollar bills (money prime) or a painting of almond blossoms (neutral prime), while they were given a distracter task of solving a tangram. Participants were then asked for help coding packets (for another study), with the number of packets they offered to help code serving as the primary dependent variable.

I hypothesized that helping behaviors would be mediated by level of materialism: specifically, I expected that individuals who scored higher in materialism would likely show a stronger susceptibility to the self sufficient effects of money reminders, as compared to those who scored low on materialism. I further hypothesized that those who scored high on materialism would tend to be less helpful, overall, in spite of their experimental condition, than those who scored low on materialism. A materialistic mindset is already oriented away from goals such as community and family, as well as intrinsic pursuits, and oriented towards the extrinsic rewards that can be gained from material possessions. It takes no great stretch of the imagination to suppose that reminders of money would be especially salient to this group. I also hypothesized that those who scored high in materialism would evidence a more external locus of control, as



well as display higher levels of trait anxiety, than those who scored low in materialism. I hypothesized that levels of materialism would be inversely related to scores for subjective well being, and that scores for materialism would be inversely related to ratings for socioeconomic status. Finally, as previous investigations have returned equivocal results, I hypothesized that there would be no difference between the genders on levels of materialism.

## CHAPTER II

### LITERATURE REVIEW

#### Money

Money weaves its way deeply into the texture of the lives we spin and eventually we can't distinguish ourselves from it. Money represents all things: a measure of our value; a source of power over other people, or a means to be free of them; a way to show care to others and to figure out how much they really care about us. (Millman, 1991, p. 125)

Money, throughout the ages, has meant many different things to different people: from the surest route to happiness to the root of all evil. Some see money as a tool, a means to an end; others define money using terms such as “security,” “power,” “love,” and “freedom” (Furnham & Argyle, 1998). A typical definition of money from the field of economics holds that it has three primary functions: it is a medium of exchange, a unit of account, and a store of value (Lea & Webley, 2006a). This description conceptualizes money as a tool, a neutral object that allows us to accomplish our goals. However, in the human experience money has proven to be anything but neutral. It is loaded with meaning, potency, and emotional charge. Money can wield a powerful influence on an individual, a family, and a nation.

The term *money* is being used here to refer to money as a “thing in itself” rather than concepts such as property, possessions, or wealth (Lea & Webley, 2006a; Vohs, Mead, & Goode, 2006). Emerging research in the fields of economics and

psychology have indicated that money tends to influence behavior in ways that are consistent and predictable, although not in the rational, mathematical ways postulated by the models of traditional economics theory (Burgoyne & Lea, 2006; Furnham & Argyle, 1998).

One early experiment related to the perception of money asked children to match the size of a coin by adjusting the size of a projected circle of light. By comparing the size of the circle of light with the size of the coin, the researchers discovered that participants judged coins to be larger than neutral objects (cardboard circles) of the same size. In addition, the greater the value of the coin, the greater the deviation of actual size to apparent size. Finally, poor children overestimated the size of coins more than well off children did, suggesting that the perception of money is affected by both its subjective value and the objective needs of the observer (Bruner and Goodman, 1947).

Another example of a predictable response to money is the money illusion, where people are more likely to respond to the nominal value of money rather than its “real” value (Shafir, Diamond, & Tversky, 1997). We forget to take inflation into account, often leading to favorable impressions of nominal gains that translate to real losses, when inflation is factored in. The money illusion is considered responsible for the “stickyness” of nominal prices, in spite of inflation, and is considered a thorn in the side of the rational economic model due to both its regularity and its apparent irrationality (Fehr & Tyran, 2001). The money illusion is particularly manifest in locations where a local currency is replaced with another currency, such as the situation that happened with the introduction of the Euro (Raynard, Burgoyne, Saldanha, & Routh, 2005). When a

currency with a higher nominal value transplants one with a lower nominal value, people tend to see things as more expensive.

Another common behavior relating to our relationship with money is the phenomena of money conservatism (Burgoyne & Lea, 2006). People are often openly hostile to currency reform, even when the currency reforms would bring a beneficial change (Caskey & St. Laurent, 1994). People attribute specific emotional meanings to currencies that cannot be reduced to the economic ideal of money as a “medium of exchange,” and that prove highly resistant to change (Przybyszewski & Tyszka, 2007). The displacements of local currencies by the Euro in European Union member nations has been met with much resistance, and the focus of much research. It has been suggested that a country that changes its currency can have a displacing effect akin to making citizens feel like “tourists in their own country” (Ranyard et al., 2005, p. 96). Such powerful attachments to the form of specific currency further challenges the standard economic model of the supposed neutrality of money.

People are not simply attached to money for its form, however: the desire for money is powerful motivator at all income levels (Furnham & Argyle, 1998; Vohs, Mead & Goode, 2008; Ahuvia, 2007). One phenomenon surrounding money remains remarkably constant: people want it, and are willing to go to great lengths to get it. As Wiseman states, “there is no obvious biological drive to amass wealth and get rich, yet the “purposeless drive” appears to be one of the most powerful known to man” (as cited in Furnham & Argyle, 1998, p. 130).

## The Social Consequences of Money

Another indication of the irrational relationship humans have with money can be found in Money Taboos, the social rules which prevent money from functioning as a rational medium of exchange (Burgoyne and Lea, 2006; Zelizer, 1997). We don't require that our children repay the costs associated with their upbringing, nor do we offer to pay our spouse for cooking, taking out the trash, or performing sexual favors. We would be offended if our employer offered our paychecks to us as a "gift," varying the amount and the pay date capriciously (Zelizer, 1996). It is typically considered taboo to the point of disgrace to attach a monetary value to one's children's, one's friendships, or one's patriotism (Fiske & Tetlock, 1997). Many instances can be found where overt exchanges of money are not considered appropriate, although covert exchanges are sometimes allowed, such as the elaborate ritual involved in offering a bribe to a police officer in order to escape a ticket (Pinker, 2007). Money Taboos serve as another illustration of the principle that people engage with and respond to money in predictable ways, even when these ways are not the clean and rational exchanges envisioned by economists.

Much of the exploration into the topic of money has come through the fields of anthropology, economics, sociology, and marketing, and has focused on identifying the way money is valued, used, and controlled. However, in recent decades psychologists have begun an exploration of money's effects, and have found interesting implications for both subjective experience and social relationships. Findings have begun to emerge suggesting that money might activate psychological states that lead to increased self-sufficiency to the detriment to social relations.

One study that sought to examine the social influence of money, using multiple experiments and multiple modes of investigation, showed that when people were subliminally primed with concepts or images related to money, they tend to behave in a predictable way: they offer less help to others who need it, and seek less help for themselves (even when attempting an “impossible” task). In addition, those who were reminded of money preferred to work alone, play alone, and put more distance between themselves and other people. Individuals were primed with money in several ways: from images of money to playing the game Monopoly to descrambling word puzzles with money themes. The authors concluded that being reminded of money made people more “self-sufficient,” in both the positive and negative sense of this term (Vohs et al., 2006).

The authors define self sufficiency as an “insulated state wherein people put forward effort to attain personal goals and prefer to be separate from others” (Vohs et al., 2006, p. 1154). Money activates this state due its instrumental nature as a tool that allows us to remain independent of others: with money we are able to reach our personal goals largely without others’ help (Vohs et al., 2006; Vohs, Mead & Goode 2008; Zhou, Vohs, & Baumeister, 2009; Lea & Webley, 2006a).

The mechanism by which money reminders activate self-sufficiency was further examined in a series of experiments (Zhou et al., 2009). The authors point out that human beings have two routes to having their needs met: they can either “get along” with the group and seek interpersonal inclusion with their social environment, or they can “get ahead” by substituting money for social acceptance. Working off the premise that physical pain and social distress have been suggested to share common physiological mechanisms (Eisenberger, Lieberman, & Williams, 2003), the authors found that the

experience of social rejection and physical pain both increased the desire for money, and that counting money reduced the subjective experience of both social distress and physical pain. Finally, reminders of having spent money were associated with an increase in the subjective experience of both pain and social distress (Zhou et al., 2009). The authors conclude that the primary effect of interacting with money is to bring about a feeling of strength, whereas losing money is related to feelings of weakness. This effect is not trivial, as the mere concept of money has been demonstrated to mitigate the negative consequences of both social exclusion and physical pain.

In a follow-up to their initial study (Vohs et al., 2006) on the psychological consequences of money, Vohs et al. (2008) puzzled as to why research indicates that wanting money (materialism) has been associated with poor outcomes (diminished subjective well being [SWB], relationship problems), while having money is associated with positive outcomes (increased SWB, more positive affect, and improved personal health). As few other major human desires share this quality, they explored further into both the negative and positive outcomes related to the concept of “self-sufficiency.” The authors cite Fiske in claiming that the “Market Pricing Mode” is one of four fundamental ways that humans relate to one another (p. 209). When in “Market Pricing Mode,” we attend to the cost/benefit analyses of social exchanges. The psychological effect of being primed with the concept or image of money may be due to the associations learned over a lifetime of using money: as money is the prototypical medium of the “market pricing mode,” reminders of money can lead to a state of heightened focus on one’s personal inputs and outputs.

Vohs et al. (2008) replicated the finding that being reminded of the concept of money is associated with a tendency to be less helpful. In addition, those reminded of money stated a preference to engage in solitary activities even when alternative social activities include family or friends, indicating a reduced desire for intimacy. On the other hand, reminders of money caused individuals to work harder on tasks, as well as take on extra work. The authors conclude that “money is bad for the interpersonal self but can be good for the personal self” (Vohs et al., 2008, p. 208).

A recent investigation into more negative aspects of the psychological consequence of money has shown that when people are reminded of wealth (in this case, a large pile of money), it greatly increases the chances that they will engage in unethical behavior (Gino & Pierce, in press). Individuals were allowed to self-rate their performance on a task, and were differentially compensated with real money based on their stated performance. When given the opportunity to cheat (overstate their performance) for financial gain, individuals in a “wealth” condition engaged in a much higher rate of cheating than individuals in a “scarcity” condition, both in terms of the number of individuals who engaged in the cheating as well as the magnitude of the cheating. This “Abundance Effect” provides one more piece of evidence that the mere presence of money affects people in predictable ways: by increasing focus on self-interested behavior, sometimes to the detriment of interpersonal relationships. To understand why money affects us this way, psychologists are looking for clues in the fundamental aspects of human nature.



## The Evolutionary Psychology of Money

Although there are some accounts of animals engaging in reciprocal or altruistic behaviors, the use of money has no correlates in the natural world. This presents a special problem for psychologists, especially evolutionary psychologists, who seek to describe constructs as arising from or maintaining Darwinian continuity or conferring selective advantage in the environment of evolutionary adaptation (EEA). Lea and Webley (2006a) maintain that the motivation to acquire money does not appear to be adaptive, and has no obvious parallels in the behavior of other animals. They suggest that one goal of psychology should be to search for the biological underpinnings of money's use and motivational properties. To this end, they propose two theories to describe our relationship with money: the "money as a tool" theory, and the "money as a drug" theory.

Since other species have been shown to use tools, and because a "tool theory" fits well with the typical economics definition of money, Lea and Webley (2006a) maintain that money often functions as a tool: it is a way for us to facilitate exchange with others in order to obtain needed goods and services. In this light, money is an incentive only so far as it allows us to obtain other objects of desire; it is a means to an end, and that end can be whatever we want or we can afford. This makes money one of the most useful tools there is.

However, the tool theory of money does not account for many of the often irrational ways that we interact with it. Rather than as a means to an end, we often come to desire money to an extent not commiserate with its value, but rather for its own sake, as a thing-in-itself. Lea and Webley (2006a) posit a "Drug Theory" of money motivation,

suggesting that money often acts like a drug: in our ceaseless pursuit of wealth, we often do not view money for its instrumental or tool-like nature, but rather as a thing-in-itself, a “functionless motivator.” Money, according to the authors, has a power and emotional charge that is not directly related to its function as a medium of exchange. They identify a number of other substances that work as strong incentives, but do not depend on their ability to offer “goods or services” for their incentive power. Instead, these substances produce incentive by acting directly on some part of the body, usually the brain, and producing distinct physiological states. The authors cite alcohol, nicotine, caffeine, cocaine, and morphine; all stimuli “which is of no biological significance in itself, but which has motivational properties because it produces the same neural, behavioral, or psychological effect as some other stimulus that is biologically significant (Lea & Webley, 2006a, p. 165).” In this light, money the “drug” is a deceiver, producing motivational power by imitating a natural incentive at the cognitive level. The authors suggest that the “Tool Theory” and “Drug Theory” provide an exhaustive metaphorical framework for situating our relationship to and use of money in contemporary society.

Several other scholars point to alternative explanations for Lea and Webley’s explanation of a biological base for the money instinct. Many claim that a “drug theory” is not essential, and that an expanded “tool theory” will suffice. Ahuvia (2007) suggests that we can find Darwinian continuity in our relationship to money by simply observing three evolutionary desires: to store resources, to be sexually attractive, and to manage our social relationships and our personal identity within these relationships. Ahuvia points out that one reason to assume that the desire for income and consumption may have evolutionary roots is to observe that it follows the same pattern as behaviors that are

clearly biological: the desire for food, sex, and sleep. With any of these four desires, deprivation of the desire tends to lead to a decrease in subjective well being. However, as these needs are met, subjective well being tends to rise until a certain point, after which an increased amount of the desired object no longer adds to the well being of the individual. Happiness is not increased with food, sex, sleep or money beyond a certain point (Buss, 2000).

Behrendt (2006) sees money's motivating power arising from its function as a tool to obtain social status, as well as to mediate intraspecific aggression in a culturally sanctioned way. Others point to a "hoarding instinct" (Booth, 2006; Bouissac, 2006), an "autonomy instinct" (Dewitte, 2006), or the use of money as an epistemic structure (structures that organisms add to their environment in order to reduce the cognitive complexity associated with tasks; Chandrasekharan, 2006).

The most promising mechanism that could underlie the evolved function of money, according to Ahuvia (2007), is the desire to manage social relationships. Evidence that money is used as social tool can be found in the historical record where "the primary motive for acquiring money and possessions in virtually all known tribal cultures is ultimately symbolic and ceremonial, in the service of gaining and maintaining prestige, and has little to do with money as a rational medium of exchange of goods and services" (Solomon et al., 2004, p. 134).

The use of money to increase social prestige, as well as other social relationships, can help explain the importance attached to money. It might also help explain one other reliable feature about money: having money is not correlated with increased happiness. The desire to manage social relationships possibly evolved apart

from the desire for happiness (Ahuvia, 2007). Each of these desires leads to genetic fitness in its own way, yet they work independently.

While the majority of human behaviors surrounding money can be explained via the “tool theory,” Evidence of the “drug-like” effects of money are being explored through the new science of neuroeconomics (Sanfey, Rilling, Aronson, Nystrom, & Cohen, 2003). Money may activate the Mesolimbic Dopamine system, in much the same way as gambling and illicit drugs. One study found that novelty seeking, which has been associated with lower dopamine levels, is associated with strong money attitudes (Yang, Lester, & Spinella, 2006). Evidence of “money madness,” or fitness decreasing aspects of responses to money, can be found in modern manifestations: the professional who neglects her family in order to work and earn above and beyond what is needed to survive, the miser who lives as a pauper despite owning a vast horde, the student who says that he wishes to study “whatever makes the most money,” the gambling addict who loses everything yet still returns to the table.

Whatever the biological and psychological motivations, money has emerged as a strong, possibly unique, incentive. When modern forms of money are introduced to societies that had previously lacked it, it is quickly adopted and displaces indigenous barter or reciprocation systems (Lea & Webley, 2006b). As a final note, Lea and Webley indicate that people have been known to sell their internal organs or even their children for a profit, indicating that “in the right circumstances, the money motive will overwhelm even the motives to preserve one’s own body and one’s own descendants. Biologically speaking, that places the money motive at the highest level there is” (2006b, p. 197).

## Money and Happiness

Many assume that money is connected to happiness: if we just had enough money, we would be happy (a term that here is being used interchangeably with well-being [Ahuvia, 2007]). This is the central tenant of modern economics theory: that subjective well being is the end, and money is simply the means to this end (Diener & Seligman, 2004). Money does appear to be correlated with an increase in overall happiness, as well as an increase in other factors such as physical and mental health. However, the most salient effects of money on subjective well being exist at the level of poverty, where financial concerns dominate the subjective experience of happiness. Being poor has a negative effect on mortality, as well being associated with an increase in depression, illness, and stress (Vohs et al., 2008). Money has been shown to buffer against the negative effects of unforeseeable events, which can often prove detrimental to those without financial resources (Mandara, Johnston, Murray, & Varner, 2008; Johnson & Krueger, 2006; Dakin & Wampler, 2008). Money helps provide a sense of control, and as such it can help alleviate personal stress. However, once one's basic needs are met, higher order needs predominately affect the experience of subjective well being. Among the American middle class, income accounts for only about 1.8 percent of the variance in subjective well being (Cummins, 2000).

Studies have shown that the relationship between happiness and income follows a non-linear pattern, that is, there is a diminishing marginal utility as income rises (Frey & Stutzer, 2002a; Ahuvia, 2007; Layard, 2005). Increased income past a certain point does not appear associated with further gains in happiness. In addition differences in income account for only a small percentage of the difference in happiness between

individuals (Frey & Stutzer, 2002a). While happiness is lower among the poor, once material needs are met more money provides diminishing returns.

One indication of the relatively weak effect of money on happiness can be found in the phenomenon that has occurred in many western nations, including the United States, over the last few decades: per capita income has increased tremendously, while at the same time average happiness has remained constant, or in some cases decreased (Frey & Stutzer, 2002b). While the United States has been experiencing previously unheard of prosperity, we have been reporting a decrease in subjective well being, an increase in depression, juvenile crime, and dissolution of marriage, causing one commentator to suggest that “we have bigger houses and broken homes, higher income and lower morale, more mental health professionals and less well being. We excel at making a living but often fail at making a life” (Myers, 2000, p. 138). If money truly made us happy, then why can we have so much of both money and misery?

One likely mechanism that mediates the influence of rising income on subjective well being is social comparison. It is not simply the absolute value of our income that matters, but rather the subjective experience of our income in relation to the income of those around us (Frey & Stutzer, 2002a; Hsee, Yang, Li & Shen, in press). Job satisfaction has been shown to relate not only to one’s absolute pay, but to one’s relative pay as well (Diener & Seligman, 2004). One Harvard study gave students the hypothetical option of earning \$50,000 per year in a world where everyone else earned \$25,000, or \$100,000 in a world where others earn \$200,000. Even with prices and purchasing power remaining constant in both conditions, half of the respondents stated a

preference for living in a world where they had half the absolute income, but twice the relative income (Solnick, S. & Hemenway, D., 1998).

Another aspect that may account for the diminishing returns in happiness of increased income is that as our income increases, so do our expectations (Diener & Seligman, 2004; Solberg, Diener, Wirtz, Lucas, & Oishi, 2002). When we experience something new, or engage in an act of consumption, we often feel good about our new purchase, at least for a little while. However, over time, the object ceases to bring us any more joy, we lose our sensitivity to the object. This is a process referred to as hedonic adaptation (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2006; Myers, 2000). We adapt to the things that originally give us pleasure, after having been exposed to it for a period of time. This mechanism has been used to explain why changes in income over time are not generally associated with a rise in subjective well being (Hsee et al., in press). Ultimately, in terms of happiness, the strongest personal influence is likely the discrepancy between what one has and what one desires (Solberg et al., 2002).

With all of this said, however, it does appear that money is correlated with increased happiness for one group: the rich. It has been estimated that the rich have subjective well being scores as much as three standard deviations above that of middle income groups (Cummins, 2000).

### Materialism

Materialism is usually considered a personality trait or value, defined as relating to the high relative importance an individual places on acquiring and possessing money and material goods (Nickerson et al., 2003, Richins & Dawson, 1992). Belk (1984) adds that “At the highest levels of materialism, such possessions assume a central

place in a person's life and are believed to provide the greatest sources of satisfaction and dissatisfaction" (p. 291).

The efforts thus far to define and operationalize materialism have come largely from within the disciplines of marketing and consumer research, which have ironically also offered some of the strongest evidence as to the deleterious aspects of this trait (Kasser, 2002).

One of the first psychometrically sound attempts to measure materialism was undertaken by Belk (1985), who envisioned materialism as being a constellation of three traits: *possessiveness* (the inclination to retain control over one's possessions), *nongenerosity* (the unwillingness to share or give possessions with others), and *envy* (displeasure at another's happiness, success, or possessions). One of Belk's initial findings was that people who rated high in materialism were also more likely to report that they were not as happy or as satisfied with their lives as those who rated lower in materialism.

A second important scale to measure the construct of materialism was introduced by Richins and Dawson (1992), who also proposed three factors to explain the construct: *acquisition centrality* (acquiring possessions becomes a central life goal), *acquisition as the pursuit of happiness* (material possessions are believed to be central to the experience of happiness), and *possession-defined success* (judging one's own and other's success by the material items that they possess). This conceptualization contains an element relating to social status, as objects are often desired for the image that they project. Richins and Dawson (1992) found that participants who rated high in materialism reported less overall life satisfaction, as well as less satisfaction with their



family, friendships, and their income. Materialists prefer to retain their resources (possessions and money) for their own use, and are less likely to want to share with others.

Materialism has been theorized to develop within an individual via two main routes: either by a process of compensating against feelings of insecurity or through the effects of socialization, modeling, and internalization (Kasser, Ryan, Couchman & Sheldon, 2004). A number of studies have shown a correlation between materialism and other life factors related to insecurity. Family environments regarded as less secure or marked by trauma including divorce, hostility or parental absence or disapproval have been shown to lead to materialistic values (Kasser et al., 2004; Rindfleisch et al., 1997). Peers play a role in the development of material values, as peer rejection is associated with the adoption of materialistic values (Banerjee & Dittmar, 2008). In addition, self esteem is a primary predictor of material values among school aged children (Chaplin & John, 2007), with low self esteem associated with higher levels of materialism. One thing that each of these predictors has in common is their association with the subjective feeling of insecurity.

In one experimental investigation of the relationship between insecurity and materialism, Kasser and Sheldon (2000) manipulated subject's feelings of insecurity by having them write about their own death. Subjects thus primed reported greater materialistic strivings by expecting a greater income and more material possessions when asked to imagine their lives 15 years in the future. In addition, those primed with death salience consumed more resources in a forest management game. The activation of materialistic values within the context of a terror management exercise lends further

support to the evidence that one major route to materialism is insecurity (Solomon, Greenberg, & Pyszczynski, 2004).

The second route to materialism, according to Kasser et al. (2004), is socialization. The authors note that from birth on, people receive a constant barrage of implicit and explicit messages to the effect that material goods, money, and consumption are important. We receive messages from our parents and family members, who have often adopted the culture's materialistic values, as well as peers, recreational events, and (perhaps most perniciously) the media. The individual socialized in contemporary culture often accepts the messages of consumer society and internalizes its values. Studies have consistently demonstrated that more materialistic individuals watch more television than less materialistic individuals (Kasser, 2002), and television is a medium saturated with advertisements and appeals to consumer values. Dittmar (2007) points out one aspect of this process by identifying ways in which consumer culture perpetuates a number of "myths:" the impossibly thin (and air-brushed) "perfect body," and the "good life" of an affluent lifestyle full of consumer goods and activities. She concludes that consumer culture can act as a "cage within;" a prison with invisible bars and walls precisely because the values that bind us seem to well up from our own inner desires and aspirations. In short, we have internalized the very materialistic values that constrain us.

What are the effects of materialism? In study after study, researchers find that a material values orientation is correlated with lower subjective well being, poorer mental health, lower global adjustment, a decline in social productivity, and an increase in behavior disorders (Kasser & Ryan, 1993; Nickerson et al., 2003; see Kasser et al. [2004] for a further overview). Engelberg and Sjöberg (2006) found that less materialistic

people tend to be more emotionally stable, achievement oriented, and better able to handle failure and demanding challenges. They also found that money-oriented people tend to be less able to balance the demands of work and family. One study of values in adolescence as they relate to mental health found that individuals who emphasized materialistic values had higher odds of being diagnosed with nearly every DSM diagnoses assessed in the study, from conduct disorder to separation anxiety to narcissistic and paranoid personality (Cohen & Cohen, 1996). Materialism has been shown to be positively correlated with social anxiety (Schroeder & Dugal, 1995) as well as neuroticism (Sharpe & Ramanaiah, 1999), and is associated with an external locus of control (Hunt, Kernan, Chatterjee, & Florsheim, 1990).

Materialistic values often lead to psychological tension, as the individualistic orientations of material values “crowd out” other communal values, such as family and religion, leading to stress and diminished subjective well being (Kasser, 2002). Interestingly, materialistic values do not appear to negatively affect the self esteem of individuals who do not value family or community (Burroughs & Rindfleisch, 2002).

Polak and McCullough (2006) point out the inherent contradiction in contemporary culture: we claim to value family and community involvement, while at the same time stress the importance of materialism and individual value aspirations. Cross-cultural research on value systems has demonstrate that the goals of a materialistic values orientation are often diametrically opposed to the goals of community, conservation, family, and even autonomy and individual freedom (S. Schwartz, 1994; Kasser et al., 2007; Grouzet et al., 2005). The pursuit of self-enhancement goals seems to come at the

expense of alternative values for community and positive relationships with others (S. Schwartz, 2007).

McHoskey (1999) sampled a group of undergraduates and found that those who highly valued financial success felt alienated from their culture, and deemphasized family, community, and “self-love” related goals. In addition, people who highly valued financial success scored high on Machiavellianism, a personality construct marked by distrust, cynicism, egocentricity, and a tendency to use and manipulate others for personal ends. This sense of alienation and depersonalization is echoed in Kasser (2002), who reports studies whereby those high in materialism are more likely to agree with statements such as “In order to relate to others, I often have to put on a mask,” or “I often feel detached from my social environment” (p. 63). In addition, high scores on materialism are often associated with a tendency to manipulate and use others for one’s own personal advantage.

#### Gender, Money, and Materialism

The distinction between the individualistic orientation of the high materialist verses the more communal orientation of those low in materialism suggest that a gender difference may be found in overall levels of materialism. Sex role standards and stereotypes have long held that men tend to follow an “instrumental,” or “agentic” role in society, characterized by achievement, aggression, self-reliance and self-efficacy, whereas women tend to follow an “expressive” or “communal” role, emphasizing interpersonal relationships, compassion, and a communal orientation (Bem, 1974; Bryce & Olney, 1991). Despite these assumptions, investigations into gender differences in materialism have been equivocal.

In his initial validation of his materialism scale, Belk (1984) found that there were no differences between males and females in the materialism scale overall, although females scored significantly lower in the envy subscale than males did. Subsequent studies have found no difference in materialism level between the genders (Buijzen & Valkenburg, 2003; Prince-Gibson & Schwartz, 1998), or that men score higher in materialism levels than females (Beutel & Marini, 1995). Men have rated higher in materialism in Australian (Ryan & Dziurawiec, 2001) and New Zealand samples (Bryce & Olney, 1991). One study found that women in the United States reported a higher level of materialism than their male counterparts (Bryce & Olney, 1991).

One study found that men and women were socialized by their parents along “different money tracks,” particularly within the higher socioeconomic classes (Newcomb & Rabow, 1999). Sons were expected to learn how to work and save money at earlier ages than daughters, received less financial support, and were expected to work more. In addition, they were included in discussions of family finances much sooner than their sisters were. The net result of these different socialization tracks was that men tended to have a more positive view of money, whereas women tend to be more wary of money, and less envious of those who earn a good deal of money.

### Research Hypotheses

The present study is primarily concerned with investigating the relationship between the psychological consequences of money and a number of individual difference variables, notably materialism and socioeconomic status. A secondary concern is to examine the relationship between several individual difference variables and the

materialism construct. There are several specific hypotheses in this study related to these issues.

First, I hypothesize that the tendency for individuals to respond to reminders of money with an increase in “self sufficient” behaviors (offering to help less, seeking solutions less frequently, being less desirous of solutions, and preferring to work alone) will be mediated by level of materialism. As materialism and “self sufficiency” are both associated with a focus on the self to the exclusion of others, I expect that those higher in materialism will be affected more profoundly by the priming effect of money, as compared to those who score lower in materialism.

Second, individuals who are higher in materialism will also be less helpful overall. Even without the effect of the money prime, prior research would suggest that those high in materialism would prefer to work and play independently, as well as offer less help to others, as compared with those low in materialism.

Third, materialism will be inversely related to socioeconomic status, measured by level of education, occupational prestige, and subjective social status. Materialism has been shown to develop out of conditions of insecurity, which are often associated with lower socioeconomic status. As poverty is often associated with multiple challenges and subsequent insecurities, it is expected that materialistic values are likely to flourish in lower socioeconomic groups.

Fourth, level of materialism will be associated with trait anxiety, as per the association between materialism and insecurity. Those higher in materialism will also score higher in trait anxiety, compared to those scoring low in materialism.

Fifth, level of materialism will be associated with locus of control: those higher in materialism will evidence a more external locus of control than those lower in materialism.

Sixth, level of materialism is expected to be negatively related to subjective well being.

Finally, no relationship is expected to be found between gender and level of materialism.

## CHAPTER III

### METHODOLOGY

#### Participants

Participants included 228 undergraduate psychology students at a Northern California public university. Participants received extra course credit for completing the study. Participation was voluntary and confidential.

#### Measures

##### Materialism

Materialism has differentially been considered as a cultural value, a trait, attitude, or norm (Schroeder & Dugal, 1995). However, it is commonly conceptualized as an individual difference, or relatively stable personality trait, emphasizing the importance an individual attaches to consumer goods and possessions. At the highest levels of materialism, the pursuit of these possessions may become central to a person's life and are thought to provide the greatest sources of satisfaction (Belk, 1984).

The two most commonly used scales to assess the personality trait of materialism are currently Belk's (1984) and Richins and Dawson's (1992) materialism scales. Belk conceptualizes materialism as consisting of three traits: possessiveness, non-generosity, and envy (Belk, 1984). Although still in use, Belk's scale has been criticized for relatively poor reliability: alpha for the individual scales has ranged from .09 to .81



with a median reliability of .54, and the total measure summed among the three scales has a median reliability of .62 (Richins and Dawson, 1992).

The materialism scale used in the current study was the Richins and Dawson (1992) materialism scale. Rather than the “bottom-up” approach used by Belk to define the subscales of materialism as an extension of current theory on the trait (Belk, 1984), Richins and Dawson used a “top-down” approach of factor analyzing their broad scale of materialism into three subscales: acquisition centrality, acquisition as pursuit of happiness, and possession-defined success. These three subscales are then summed to give an overall materialism scale. Richins and Dawson subjected their scale to stringent scale development, including item analysis and controls for social desirability (Richins and Dawson, 1992).

The scale consists of a questionnaire containing 18 items that individuals respond to using a 5-point scale indicating their level of agreement with the statement. These responses are then summed, with higher scores indicating a higher disposition towards materialistic values. The possible scores for this measure range from 18 to 90.

While this scale generates a continuous variable for materialism, it can also be divided into discreet groups. For example, Richins and Dawson use a tercile split and compare the high and low group. Richins and Dawson report a Cronbach’s alpha of .80-.88 for the full scale (subscales ranged from about .71-.80). Test retest reliability (3 week) was .87 for the full scale.

Richins and Dawson demonstrated the validity of their measure by performing multiple tests of their propositions for the structure of materialism. The importance of acquisition for materialists was tested in a variety of ways: high materialism individuals

reported that they needed a significantly higher income than non-materialists. In addition, participants created a list of personal values which revealed differences between high and low materialism individuals: higher materialism individuals were more likely to state that they value “financial security,” and less likely to value “warm relationships with others” or “a sense of accomplishment” than lower materialism individuals. Centrality was investigated by examining how respondents state that they would spend an unexpected windfall of \$20,000. Respondents high in materialism indicated that they would spend three times as much on themselves, and contribute less than half as much to church or charitable organizations, than low materialism individuals. In addition, the materialism scale was tested against nongenerosity subscale of the Belk (1984) materialism scale, and was found to be positively and significantly related. The authors concluded that this demonstrates the high materialist’s penchant for storing resources for themselves, as well as their reluctance to share.

A final test of the validity of the materialism scale was a test of materialism as it relates to life satisfaction. Materialism was found to be negatively related to life satisfaction in all aspects of life measured, as well as negatively related to self-esteem. Materialism was also found to be correlated with the envy subscale of Belk’s (1984) materialism scale. The authors conclude that envy can be seen as dissatisfaction with what one has, as well as one’s “lot in life.” Individuals who were more envious also rated as more materialistic.

### Trait Anxiety

Trait anxiety was measured using the trait subsection of the Spielberger State-Trait Anxiety Inventory (STAI; Spielberger, 1983). While state anxiety is considered a

transitory state of the individual as he or she responds to certain stimulus, and is likely to fluctuate from moment to moment, trait anxiety is considered a relatively stable condition of the individual, indicating a greater proneness to respond to stress with state anxiety (Endler & Okada, 1975). The STAI has shown itself to have a unidimensional factor structure for anxiety, and reported alphas in the low .90s. Stability for college students range from .86 for males, .76 for females at a 20-day test retest interval, and .73 for males, .77 for females at a 104-day interval (Spielberger, 1983).

Anxiety was chosen as a relevant trait to measure due to the previously established relationship between insecurity and materialism (Kasser & Sheldon, 2000); indeed, insecurity is postulated as one of the primary routes to materialistic values for the individual as well as for society (Kasser, Ryan, Couchman & Sheldon, 2004).

The Spielberger (1983) trait-anxiety subscale of the STAI has been subject to rigorous testing for construct validity. Neuropsychiatric patients were found to score higher in trait anxiety than “normal” groups, indicating that the scale can identify those with emotional difficulties. A high score on the STAI as a whole was found to be related to emotional problems as defined by a number of personality inventories. The trait anxiety subscale was found to be moderately correlated with the state anxiety subscale, but when participants were subjected to stressful events that altered their state anxiety score, their trait anxiety score remained constant, giving evidence that the scale measures a stable personality trait. Finally, the trait anxiety subscale was highly correlated with a number of other validated scales, indicating that all were a valid measure of a univariate concept.

The scale consists of a questionnaire containing 20 items that individuals respond to using a 4-point scale indicating how often they feel a specific way, from *almost never* to *almost always*. These responses are then summed, with higher scores indicating a higher level of trait anxiety. The possible scores for this measure range from 20 to 80.

### The Life Engagement Test

The Life Engagement Test is a measure of “purpose in life.” It is designed to be used to help assess the extent to which goals are valued, and by extension the extent to which one has a “purpose for living.” In addition, valued goals are considered the mechanism by which one remains “behaviorally engaged in life” (Scheier et al., 2006). The LET has demonstrated a Cronbach’s Alpha of .72-.87, and a four month test-retest reliability ranging from .61 to .76. Although designed primarily for behavioral medicine and health psychology, it may be a useful tool for creating a more detailed profile of the materialistic personality.

The scale consists of a questionnaire containing six items that individuals respond to using a 5-point scale indicating their level of agreement with the statement. These responses are then summed, with possible scores for this measure range from 6 to 30. Higher scores indicating a greater feeling of purpose in life.

Convergent validity was assessed by correlating the LET with a number of other psychosocial measures. Significant positive associations were found between the LET and general health, life satisfaction, and self esteem, while negative correlations were demonstrated between LET and perceived stress, hostility, and depression. In addition, the LET was shown to be positively related to another measure of life

satisfaction, Ryff's (1989) Purpose in Life Scale (as cited in Scheier et al., 2006), and proved a stronger predictor of variables related to well-being than the Purpose in Life Scale.

### The Satisfaction With Life Scale

The Satisfaction with Life Scale is a measurement of subjective well being, or life satisfaction as a cognitive-judgmental process; subjective well being is often regarded as a "global evaluation" an individual makes in regards to his or her whole life (Diener, Emmons, Larsen, & Griffin, 1985), and is often used in the literature synonymously with "happiness" (Ahuvia, 2007). Initial investigation of the scale by the authors show that the five items load onto a single factor, with a coefficient alpha of .87 and a test-retest reliability at two months of .82 (Diener et al., 1985). The univariate nature and high reliability of this scale has been repeated in numerous studies (Shevlin, Brunsten, & Miles, 1998; Pavot, Diener, Colvin and Sandvik, 1991).

The inclusion of a measure of subjective well being is indicated due to its close and contentious relationship with ideas of both income and materialism (Shermer, 2008; Layard, 2005). Many studies indicate that, above the level of poverty, there is a negligible relationship between income and subjective well being (Ahuvia, 2008; Diener & Seligman, 2004; Kahneman, et al., 2006), although some researchers dispute this conclusion (Cummins, 2000, Johnson & Krueger, 2006). However, the real relationship between income and subjective well being may well be explained by the discrepancy between what people have and what they desire (Solberg et al, 2002). Multiple studies have indicated that there is a negative relationship between materialism and subjective well being (Kasser & Ryan, 1993; Kasser, 2003; Nickerson et al., 2003; La Barbara &

Gürhan, 1997). This relationship may be related to the antithetical relationship between the values of materialism and the values of community and interpersonal relationships (Burroughs & Rindfleisch, 2002; Grouzet et al. 2005).

The scale consists of a questionnaire containing five items that individuals respond to using a 7-point scale indicating their level of agreement with the statement. These responses are then summed, with higher scores indicating a greater level of life satisfaction. The possible scores for this measure range from 5 to 35.

Validity in the Satisfaction With Life Scale was established by observing moderately strong correlations with a battery of other subjective well being measures. In addition, the scale was administered to a geriatric population and found to be moderately correlated with the results of formal interviews assessing the participant's activity level and self-directed learning orientation.

### Locus of Control

Locus of control is a belief that a response will or will not influence the attainment of a reinforcement (Furnham & Steele, 1993). Rotter's (1966) Internal-External scale measures the extent to which people feel that they have control over the outcomes of their lives (internally controlled) or whether they feel their destinies are controlled by chance, fate, or powerful others (externally controlled). Levenson (1974) developed a locus of control scale to take into account the nuance between the external variables of feeling that one's outcome is controlled by fate or chance verses being under the control of powerful others. Although a large number of scales purporting to measure locus of control have been developed over the years, there is still disagreement as to the theoretical base, dimensionality and utility of these measures (Furnham & Steele, 1993).

The measure used in this study is the Internal Control Index (ICI) developed by Duttweiler (1984). Factor analysis reveals two distinct factors for this scale: self confidence and autonomous behavior. Although the ICI has been largely neglected by psychological researchers (Jacobs, 1993), several indications suggest that it is good fit for this study. Rather than focus of fate, chance, or luck, the ICI focuses on aspects of belief in oneself, personal choice, and independent action (Duttweiler, 1984). These are some of the specific domains that materialism has been shown to effect (Kasser, 2003). The ICI demonstrates internal consistency between .83 to .85 (Duttweiler, 1984; Jacobs, 1993), which compares favorably to the Rotter scale (.69-.73), and the Levenson scale (alpha for the three subscales at .78, .77, and .64; Goodman & Waters, 1987).

The scale consists of a questionnaire containing 28 items that individuals respond to using a 5-point scale indicating how frequently the statement applies to them, from *rarely* to *usually*. These responses are then summed, with higher scores indicating a more internal locus of control. The possible range of scores for this measure is 28 to 140.

Convergent validity was initially demonstrated against a modification of Rotter's I-E scale (Duttweiler, 1984). Further investigation has found it to be moderately related to four other locus of control scales, with alphas ranging (positive and negative) from .25 to .38 (Goodman & Waters, 1987). Subsequent investigations have confirmed the initial factor structure, as well as reported consistently high internal consistency (ranging from .83 to .85), indicating that the ICI is a reliable and valid measure of locus of control (Jacobs, 1993).

### Socioeconomic Status

Socioeconomic status (SES) has been conceptualized in the psychological literature as a measure of an individual or family's social and economic position most commonly based on measures of education, income, and occupational prestige (American Psychological Association [APA], 2006). In addition to these three criteria, some researchers stress the need to take into account wealth (Demakakos, Nazroo, Breeze, & Marmot, 2008), while others urge the consideration of a more contextualized, multilevel model of SES taking into account the intersections of social class with race, ethnicity, gender, age, sexual orientation, and (dis)ability (APA, 2006).

When studying the correlates of SES, it has been suggested that the different dimensions of SES be considered separately, with a theoretical foundation as to why a particular aspect of SES might relate to the issue in question. Composite measures are discouraged (APA, 2006).

While some consider education to be the most fundamental aspect of SES (APA, 2006), others have pointed to occupational prestige as the strongest predictor of overall SES (McMillan, Henry, Crosby & Dickey, 1995). Some researchers suggest that derivation of SES based solely on the respondent's occupational prestige may provide scores comparable to other more thorough or time-intensive approaches (Cirino, Chin, Sevcik, Wolf, Lovett & Morris, 2002). This is likely a result of the heavy weighting that both income and education play in the relative prestige of a particular occupation; in their creation of the 1989 socioeconomic index of occupations, Nakao and Treas (1992) report that education and income account for between 61 and 76 percent of the variation in



occupational prestige. They also suggest that education carries more weight in determining social standing than income.

The present study seeks to create a profile of the individuals SES by taking measurements of participants' (or their parents') occupational prestige and educational level. Income will not be considered for this study for a variety of reasons. First, there is a paucity of information in the literature regarding sound methods for collecting income data from the intended subjects of this study: college students. It is a fair assumption that college students have incomes disproportionate to either their SES of origin or their expected future earnings. It is a further assumption that many college students would have a difficult time recollecting with accuracy the income level of their parents. On the other hand, students as young as high school have been shown to be able to provide a fairly accurate indication of their parent's education and occupation (McMillan et al., 1995). Second, even without these barriers, good income data have proven to be very difficult to collect. Questions about personal and family income have high item non-response rates (Hauser, 1994; Hauser & Warren, 1996). Third, as the experimental manipulation of the present study hinges upon the participant being primed with either a control image or the image of *money*, it may introduce an unintended confound to have the participant focus their cognitive attention on the subject of money, per se., within the questionnaire (although the survey touches upon many issues related to material goods and possessions, the word "money" is only mentioned in one question: the Richins and Dawson scale, question 10.)

Respondents were asked if they have worked full time in the labor force for a period of five years or more. Those who have were asked to complete SES data for

themselves and their spouse, if applicable. Those who have not were asked to complete SES data for their mother and/or father, depending on whom they have “spent the majority of the time with while growing up.”

Occupational Prestige was measured using the revision of Duncan’s Socioeconomic Index outlined by Nakao and Treas (1992). If occupational prestige scores were generated for two individuals (either both parents or participant and spouse), occupational prestige was only taken for the individual with the highest score (Cirino et al., 2002; Hauser, 1994).

Educational level was measured on a 5-level scale, from “less than high school” to “graduate/professional degree.” Educational level of respondent, their spouse, or their mother and father were assessed independently.

In addition to the measures of objective SES, the questionnaire included a measure of subjective socioeconomic status (SSS). SSS was measured using a picture of a ladder with 10 rungs, along with the instruction:

Think of this ladder as representing where people stand in our society. At the top of the ladder are the people who are the best off – those who have the most money, most education and best jobs. At the bottom are the people who are the worst off – who have the least money, least education, and the worst jobs or no jobs. The higher up you are on this ladder, the closer you are to the people at the very top and the lower you are, the closer you are to the people at the very bottom. Please mark a cross on the rung on the ladder where you would place yourself. (Adler, Epel, Castellazzo, & Ickovics, 2000)

SSS refers to the individual’s perception of their relative position within the social hierarchy, and has proven valuable in health psychology as a predictor of health outcomes (Demakakos et al., 2008; Adler, Boyce, Chesney, Cohen, Folkman, Kahn, et al., 1994).

There is surprisingly little research on the relationship between socioeconomic status and materialism. One study found that SES was a moderating factor in the effects of family disruption (largely divorce) on materialism, that is, lower SES individuals growing up in families experiencing disruption tend to acquire materialistic values at a higher rate than those of higher SES (Rindfleisch, Burroughs, & Denton, 1997).

### Procedure

Sign-up sheets were posted at the university soliciting two individuals per time slot. When only one participant showed up, they were automatically enlisted in completing the full experiment. When more than one participant arrived for a scheduled time period, a coin toss randomly determined who would participate in the full experiment, and who would only complete the questionnaire. In addition, some participants were recruited to group sessions where only the questionnaire was administered.

All participants were provided with the informed consent form, which they read and signed. All participants next completed the questionnaire packet. The questionnaire packet included measures of trait anxiety, life engagement, materialism, satisfaction with life, locus of control, socioeconomic status (measured by education and occupational prestige), and subjective social status. The questionnaire also contained demographic questions: sex, age, marital status, and ethnicity.

Upon completion of the questionnaire, the “questionnaire only” groups were given a debriefing form and a signed extra credit slip. Total time to complete the “questionnaire only” portion of the study was approximately 20 minutes.

Upon completion of the questionnaire, the participants in the “experimental” condition were moved to another part of the room that had been hidden by a partition, and seated at a small desk that contained a Tangram puzzle as well as a “Tangram worksheet”. The worksheet was split in two parts: the top of the sheet contained six images that could be solved by the Tangram puzzle. The bottom of the sheet was blank and contained the following instructions: “Did you create any of your own solutions or images? If so, please describe each one. If you need more space, you can use the back of this form.”

Directly in front of the participants was a set of instructions for using the Tangram, as well as a folder that contained the “Tangram solutions”. Directly to the right of the participants, within their field of peripheral vision and at a distance of approximately half a meter, hung one of two posters: a print of Van Gough’s “Almond Blossoms” or a print of hundred dollar bills (US) cascading from the top of the image and piling at the bottom. These images had previously been matched in a pilot study ( $N = 47$ ) for perceptions of how “engaging”, “interesting”, “attractive”, and “eye-catching” they appeared, and had been found to not differ significantly in any of these criteria. The choice of poster was determined by random assignment.

Participants were informed that they had ten minutes to play with the Tangram. They were told that they could play however they wanted: they could attempt to solve the puzzles on the Tangram worksheet, or they could come up with their own images. They were asked to either mark the images that they had solved, or draw pictures of images that they had created on their own. Finally, they were told that if they

were attempting to solve the images, and they felt “stuck,” solutions were available if they wanted them.

After 10 minutes, participants were informed that time was up, and given a second questionnaire. This questionnaire assessed how “fun,” “interesting,” “boring” or “frustrating” participants found the Tangram, whether they had looked at the solutions, whether they would rather work alone or with a partner in the future, and whether they would rather have solutions be available or not if they were to do this activity in the future. Immediately after handing the participants the second questionnaire, the experimenter explained that there was another study being conducted by a group of psychological science students regarding computer pattern recognition, and that help was needed coding packets as the computer had generated a great deal of output. The participants were given a volunteer form requesting their contact information and how many packets they would be willing to code. They were informed that the packets take approximately three minutes apiece to code, that they would need to be completed within the next three to four weeks, and that they could be completed at home via email. Finally, they were instructed to place the volunteer form in the envelope and return it to the experimenter on the way out, and that if they were unable to help code packets that they could simply leave the form blank. Participants were then left alone to complete the second questionnaire and the volunteer form.

When finished, participants were directed back to the original side of the room (so that they could no longer see the poster) and asked what they thought the “study was about.” This served as a manipulation check for the money poster and the request for help. They were then given a verbal debriefing regarding the research question,

manipulation, and scales used. Their contact information was removed from the volunteer sheet and returned to them, and they were advised that they could remove their results from the study. Participants were then given a signed extra credit slip. Total time for the experimental condition ranged from 35-45 minutes.

Finally, four small group studies were held where participants were given only the initial questionnaire to complete. Upon completion of the questionnaire, this group was given a debriefing form and a signed extra credit slip. Total time to complete this portion of the study was approximately 20 minutes.

## CHAPTER IV

### RESULTS

#### Descriptive Statistics

Data were gathered from two sources: one group of participants ( $N = 128$ ) participated in the full experimental study, and an additional 100 participants completed only the questionnaire, for a total group  $N$  of 228. Questions pertaining to the research hypothesis and experimental manipulation were explored with the smaller group, while the full group was used for correlations and multivariate analysis. Three cases were removed from the experimental group for being outliers, as their response to the helping manipulation fell more than three standard deviations above the group mean, for a final experimental group  $N$  of 125.

Of the full experiment group's 125 participants, 85 (68%) were female and 40 (32%) were male. African Americans comprised 2.4% of the sample, with 7.3% listing their ethnicity as Asian, 66.4% as Caucasian, 12.8% as Hispanic or Latino, 5.6% as Multi-Racial, and 6.4% as Other, with one declining to answer. Their ages ranged from 18 to 56 ( $M = 22.57$ ,  $SD = 5.11$ ).

The total group ( $N = 228$ ) was 72.4% ( $n = 165$ ) female and 27.2% ( $n = 62$ ) male, with one declining to state their gender. The ethnic composition for this larger

group was 3.1% African American, 4.4% Asian, 65.8% Caucasian, 14.5% Hispanic or Latino, 5.7% Multi-Racial, and 6.1% listing Other, with one missing value. Ages again ranged from 18 to 56 ( $M = 22.11$ ,  $SD = 4.82$ ). Single individuals comprised 92.1% of this group, while 6.6% were married, and 1.3% were divorced.

SEI was determined through the use of Duncan's Socioeconomic Inventory (Nakao & Treas, 1992). The principal investigator coded each of the responses, and 77% of the responses were coded independently by an assistant. The alpha of these two codings was .962, indicating very high interrater reliability. As the assistant only coded a portion of the final scores, only the principal investigator's ratings were used in the analysis.

The mean, standard deviation, and highest and lowest values were computed for nine of the socioeconomic and personality measures, as presented in Table 1. These measures included occupational prestige, mother's highest level of education, father's highest level of education, subjective social status, trait anxiety, life engagement, materialism, satisfaction with life, and locus of control.



Table 1

*Descriptive Statistics*

Description	<i>N</i>	Minimum	Maximum	Mean	Std. Deviation
SEI	125	27.84	86.05	52.55	13.42
	226	23.02	86.05	52.46	12.92
Mother's Education	107	1.00	5.00	3.26	1.10
	199	1.00	5.00	3.24	1.09
Father's Education	104	1.00	5.00	3.37	1.16
	191	1.00	5.00	3.28	1.17
SSS	125	3.00	10.00	5.60	1.52
	227	2.00	10.00	5.70	1.52
Trait Anxiety	124	23.00	65.00	38.13	9.07
	225	22.00	65.00	38.73	9.29
Life Engagement	125	9.00	25.00	21.15	3.36
Test	228	9.00	25.00	21.16	3.16
Materialism	125	25.00	75.00	50.68	11.01
	228	25.00	80.00	52.19	11.44
SWLS	124	7.00	35.00	25.30	5.62
	227	7.00	35.00	25.48	5.33
Internal Control	120	78.00	126.00	104.87	10.73
Index	216	64.00	131.00	103.13	11.78

### Experimental Analyses

An independent groups t-test was computed to determine if there was a difference between the number of packets participants offered to help code in the “money poster” condition ( $M = 5.50$ ,  $SD = 6.40$ ) and the “neutral poster” condition ( $M = 6.43$ ,  $SD = 7.43$ ), and the results were found to be non-significant. In addition, the relationship between poster condition and whether the participant looked at the solutions to the tangram was explored using a 2 x 2, poster (money/neutral) by look at solutions (yes/no) chi-square analysis, which was not statistically significant. Independent group t-tests were used to determine if poster condition made a difference in whether the participant would rather work alone or with a partner, and whether the participant would rather have solutions available when working on a similar task in the future; neither of these tests reached statistical significance.

Analysis of covariance was also used to compare helping behavior across poster conditions, controlling for level of materialism. It was determined that the data were suitable for ANCOVA because the assumption of homogeneity of regression slopes was met. The results of the ANCOVA were non-significant. A bivariate correlation was computed between materialism and helping behavior, which also failed to reach significance.

The total materialism level scale was then divided into two groups using a median split: low materialism ( $N = 62$ ,  $M = 41.61$ ,  $SD = 6.12$ ) and high materialism ( $N = 63$ ,  $M = 59.95$ ,  $SD = 6.0$ ). A 2 (money vs. neutral poster condition) x 2 (low vs. high materialism) factorial ANOVA was conducted on the number of packets participants offered to help code. The main effect for poster condition was not significant, nor was

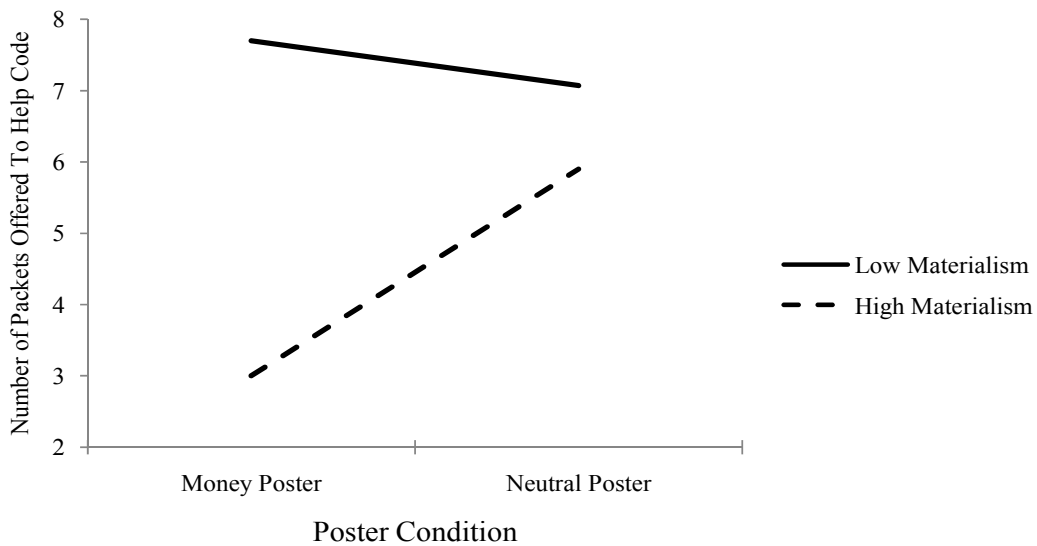
the interaction. However, there was a significant main effect for materialism level on helping offers,  $F(1, 120) = 5.79, p = .018, \eta^2 = .05$ . Participants rated low in materialism offered to help code a mean of 7.41 packets ( $SD = 7.85$ ), whereas participants rated high in materialism offered to help code a mean of 4.56 packets ( $SD = 5.59$ ). These results are illustrated in Figure 1.

This difference in materialism groups was explored further, post-hoc. Whether the money poster condition influenced helping behavior was analyzed using only the high materialism group. Selecting only this group, the poster condition had a significant effect  $t(48.82) = 2.21, p = .039$ . People in the money condition offer to help less ( $M = 3.0, SD = 3.22$ ) than those in the neutral condition ( $M = 5.9, SD = 6.78$ ). The poster condition did not have a significant effect on whether the members of this group would rather work alone or with a partner, whether they would rather have solutions available or not, or whether they looked at the solutions. In contrast, participants in the low materialism group did not display significant differences related to the poster condition on any of these outcome measures.

The relationship between materialism level and looking at the solutions was explored by a 2 (low/high materialism) x 2 (look or not) chi-square analysis, and was not found to be significant. Similarly, the relationships between materialism and whether the participant would rather work alone or with a partner and whether the participant would rather have solutions available in the future were explored using independent group t-tests, which were not significant.

Figure 1

Packets offered to help code as a function of poster condition and materialism level.



### Bivariate Correlations

Simple Pearson correlations were computed between the participant's age, the six socioeconomic status variables, and the five personality measures. Table 2 shows the statistically significant correlations for the analyses.

Table 2

*Significant Correlations*

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Age	--	-.156* (226)			-.152* (227)			-.136* (228)	.180** (227)	.138* (216)
2. SEI		--	.525** (198)	.588** (190)	.200** (225)					
3. Momed			--	.501** (187)	.183** (198)					
4. Daded				--	.268** (190)					
5. SSS					--			.160** (226)		
6. TA						--	-.509** (225)	.242** (225)	-.615** (224)	-.556** (213)
7. LET							--		.469** (227)	.273** (216)
8. MAT								--	-.212** (227)	-.237** (216)
9. SWLS									--	.221** (216)
10. ICI										--

Note. The number in parentheses is the valid pairwise *n*. SEI = Socioeconomic Index, Momed = mother's level of education, Daded = father's level of education, SSS = Subjective Social Status, TA = Trait Anxiety, LET = Life Engagement Test, MAT = Materialism level, SWLS = Subjective Well Being, ICI = Locus of Control (Internal Control Index).

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

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

### Further Analyses

Independent sample t tests were used to determine if level of materialism differed as a function of gender. Overall, the female participants scored higher in materialism ( $M = 53.59$ ,  $SD = 11.05$ ) than the male participants ( $M = 48.6$ ,  $SD = 11.81$ ). Independent sample t-tests were used to examine gender differences in socioeconomic index, subjective social status, mother and father's level of education, trait anxiety, life engagement, locus of control and satisfaction with life; none of these tests revealed significant differences. These variables were also compared across gender as a set of dependent variables, using MANOVA. A significant multivariate effect was found,  $\lambda = .866$ ,  $F(5, 133) = 3.51$ ,  $p = .006$ .

Gender differences in materialism were further explored through independent sample t-tests and the three subscales of the materialism scale: success, centrality, and happiness. A significant difference was found between females and males on the materialism as defining success subscale,  $t(225) = 2.95$ ,  $p = .004$ , as well as the materialism centrality subscale,  $t(225) = 3.57$ ,  $p < .001$ , with females scoring higher than males on both measures. There was no significant gender difference in the happiness subscale.

In order to test the hypothesis that the relationship between materialism and subjective well being is independent of socioeconomic status, two partial correlations were conducted. It was found that materialism and subjective well being were still significantly negatively correlated even when controlling for socioeconomic index,  $r(220) = -.206$ ,  $p = .002$ , as well as when controlling for subjective social status,  $r(221) = -.239$ ,  $p < .001$ . As neither direction nor strength of the relationship was affected by these

controls, it can be inferred that neither occupational prestige (and, it may be inferred, income) nor how individuals believe that they fare relative to others mediates the relationship between materialism and subjective well being.

Partial correlations were also conducted to see if socioeconomic status or subjective social status mediates that relationship between materialism defined happiness and subjective well being: neither of these analyses changed the negative relationship between these variables.

Finally, a partial correlation was conducted to see if trait anxiety mediated the relationship between materialism and subjective well being. The results indicated that trait anxiety is a significant mediator of the effects of materialism on subjective well being; the partial correlation reduced the relationship to non-significance,  $r(219) = -.08, p = .231$ .

### Multiple Regressions

A stepwise multiple regression analysis was used to predict level of materialism from eight predictor variables: socioeconomic index, subjective social status, mother's level of education, father's level of education, trait anxiety, life engagement, subjective well being, and locus of control. The final model returned one predictor and a significant multiple correlation of  $R = .242, F(1, 179) = 11.10, p = .001$ . The single predictor, trait anxiety ( $\beta = .242, p = .001$ ), accounted for six percent of the overall variance in materialism.

In order to further explore the individual differences influencing the construct of materialism, the data were split by gender and the same eight predictor variables were entered into a stepwise multiple regression for males and females separately. For

females, the final model returned one predictor and a significant multiple correlation of  $R = .267$ ,  $F(1, 121) = 9.29$ ,  $p = .003$ . The only significant predictor was locus of control ( $\beta = -.267$ ,  $p = .003$ ), accounting for 7.1% of the variance in materialism.

For males, the final model returned two predictors and a significant multiple correlation of  $R = .505$ ,  $F(2, 46) = 7.87$ ,  $p = .001$ . The two predictors accounted for 25.5% of the variance in materialism, and included father's level of education ( $\beta = .470$ ,  $p = .004$ ), and mother's level of education ( $\beta = -.596$ ,  $p < .001$ ).

Finally, a stepwise multiple regression analysis was used to predict subjective well being from 11 predictor variables: age, socioeconomic index, subjective social status, mother's level of education, father's level of education, trait anxiety, life engagement, locus of control, and the three subscales of the materialism scale: happiness, centrality, and success. The final model returned five predictors and a significant multiple correlation of  $R = .742$ ,  $F(5, 167) = 40.80$ ,  $p < .001$ . The five predictors together accounted for 55% of the variance in subjective well being. They included: trait anxiety ( $\beta = -.554$ ,  $p < .001$ ), life engagement ( $\beta = .249$ ,  $p < .001$ ), materialism defined happiness ( $\beta = -.313$ ,  $p < .001$ ), materialism defined success ( $\beta = .161$ ,  $p = .011$ ), and locus of control ( $\beta = -.141$ ,  $p = .031$ ).



## CHAPTER V

### DISCUSSION

#### Research Hypotheses

##### Effects of Money Reminders

It was hypothesized that the “self sufficient” behaviors previously demonstrated to be activated by reminders of money (offering to help less, seeking solutions less frequently, being less desirous of solutions, and preferring to work alone) would be mediated by level of materialism. Specifically, it was hypothesized that those higher in materialism would be affected more profoundly by the priming effect of money. This hypothesis received partial support. Overall, the research participants did not show the predicted pattern of responses to the money reminders: there was no difference in overall offers to help, frequency with which solutions were looked at, desire for solutions to be available in future instances of puzzle solving, or stated desire to work alone or with a partner in the future. However, when only the high materialism group was analyzed, a different pattern emerged: those high in materialism offered to help less when exposed to the money reminder condition than the neutral condition. This group did not display any other significant predicted effects of the money reminder condition.

## Materialism

It was hypothesized that individuals who were higher in materialism would be less helpful overall. This hypothesis was confirmed, as high materialism individuals offered to help less overall, whether they were in the money reminder or the neutral condition.

It was hypothesized that materialism would be related to socioeconomic status, as well as subjective social status. Overall, this hypothesis was not supported. Materialism was not directly related to any of the measures used to assess socioeconomic status: occupational prestige, mother's highest level of education, or father's highest level of education. Materialism was also found to be unrelated to subjective social status. However, this overall pattern of results was complicated by the finding that mother's level of education and father's level of education were both significant predictors of materialism in men, but not in women. A higher level of maternal education seems to be associated with a decrease in materialism for men, whereas an increase in paternal education seems to have the opposite effect.

It was hypothesized that materialism would be related to trait anxiety. This hypothesis was supported, as trait anxiety was found to be positively related to materialism. For the entire group (but not when the genders were analyzed separately), trait anxiety appears to be the single most influential predictor of overall materialism level.

It was hypothesized that materialism would be negatively associated with locus of control. This hypothesis was supported. For women, but not for men, locus of control was the one significant predictor of overall materialism level.

It was hypothesized that materialism level would be negatively related to subjective well being. This hypothesis was supported. Furthermore, the relationship between materialism level and subjective well being appears to be independent of either objective or subjective measures of socioeconomic status. Further analysis of the factors that influence subjective well being revealed that materialism defined happiness has a significant negative association to life satisfaction; although materialism defined success has a small positive association. Once again, ratings of objective and subjective social status did not mediate the relationship between material defined happiness and subjective well being.

Finally, it was hypothesized that no relationship would be found between materialism and gender. This hypothesis was not supported, as women scored significantly higher in overall level of materialism than men.

### General Conclusions

High materialism individuals do appear to be more susceptible to the “money reminder” effect, although the results of this analysis do not support the overall effect as investigated by Vohs et al. (2006). People who are higher in materialism offer to help less overall, and offer to help significantly less when being reminded of money than when not. However, reminders of money do not seem to affect helping behavior for the overall group. In addition, reminders of money do not appear to affect whether individuals would prefer to work alone or with a partner, whether they look at solutions, or whether they would prefer to have solutions available in the future.

Although the initial hypothesis regarding higher materialism individuals being differentially affected by money reminders was confirmed, the failure to replicate the

money reminder effects on the whole group remains puzzling; a deeper question regards the failure to replicate the effects of money reminders on seeking help or on preferring to work alone as opposed to with a partner, particularly as previous demonstrations of this effect have been quite robust (Vohs et al., 2008). There are several possibilities for these results.

One possibility is that the results of this study represent a Type II error due to the nature of stimulus used; although an 18" by 32" poster was hung less than two feet from the participants and within their peripheral field of vision, some of the participants stated that they "never saw it." However, this stimulus matches previous stimuli that have been used to illustrate these results (Vohs et al., 2006), and it has been further demonstrated that even subtle reminders of money can produce robust changes in behavior (Vohs et al., 2008).

Another possibility is that the money reminder effects could have been subject to historical threats to internal validity. During the period that this experiment was being conducted (Fall of 2008 through Spring of 2009) a global financial recession was becoming salient, and the media was inundated with stories of financial hardships. It is unclear what effects these factors may have had on students: whether they had experienced personal consequences of the recession or experienced any change in their relationship to money due to financial concerns.

Finally, these differences may be due to personality variations related to geographical or institutional differences between the current sample and other groups studied. Northern California may have unique cultural properties when compared to Michigan, Florida, and British Columbia, and psychology students may have different

personality make-ups than business students. On this, the results have been equivocal: although some find business students to be high in materialism (Belk, 1984), others have found no difference in the materialism level between business students and social work students (Gail, Schmidt, & Deuber, 1995). There may also be differences in helping behavior by college department or region that bear further investigation.

The failure to find significant differences in whether the participants looked at the solutions or not is likely due to a poor operationalization of this variable. The literature has suggested that participants primed in a money condition are less likely to ask others for help (Vohs et al., 2006), as the money reminder effect appears to activate social dimensions in the individual (Vohs et al., 2008; Zhou et al., 2009). Removal of the social aspect may have reduced the efficacy of this variable. However, money has been shown to increase performance strivings (Vohs et al., 2008), which would suggest that those reminded of money would be more likely to persevere at a task. This would seem to suggest that they should be less likely to access help, whether through asking others or by looking at printed solutions.

The difference in materialism levels between men and women, as well as the higher proportion of women in the sample, may be indicative of a confound between gender and the experimental manipulation. It could be that the money reminder effect for high materialism individuals may be indicative of the effects of money reminders for females, but not for males. Due to the composition of the population being sampled, it is difficult to separate these two factors.

Despite these possible issues, it does appear that materialism plays a role in the psychological consequences of money. Those who are highly materialistic offer to

help less, and initial support has been offered for the idea that money reminders differentially affect individuals as a function of the personality trait of materialism.

### Materialism

The findings for gender differences in overall levels of materialism were not expected. Previous studies on this issue have had mixed results, although it has been rare to see women emerging as the more materialistic gender. One possible explanation for this may be personality characteristics of males who self-select to enter the predominately female undergraduate psychology major. One study found that the minority gender in a field has cognitive and personality characteristics more typical of the majority within that field than typical of their gender overall, although in psychology the personality differences between male students and the general male population is questionable. However, female psychology students tend to be more self-concerned than psychology males (Radford & Holdstock, 1995).

This increase in self-concern may help explain why locus of control emerged as the single significant factor to predict materialism level for females. Although the effect was small, an increase in internal control was associated with a decrease in overall materialism level. One mediating factor may be trait anxiety, which was both significantly negatively associated with locus of control, as well as the only significant predictor for materialism for the entire group. Feeling less in control of one's situation may lead to an increase in anxiety, which has been associated with an increase in materialistic values (Kasser et al., 2007).

More puzzling are the predictors of materialism levels for the male sample. Father's level of education was positively associated with materialism, whereas mother's

level of education was inversely related. The positive association between father's level of education and materialism is surprising, as socioeconomic status has been believed to be a protector against the life stressors that could lead to materialistic values (Rindfleisch, Burroughs, & Denton, 1997). The negative relationship between maternal educational level and materialism could be explained by not only this factor, but also by the observation that maternal level of education is associated with greater parental warmth (Davis-Kean, 2005), and that greater parental warmth is associated with lower outcomes for materialistic values (Kasser & Ryan, 1995).

It is interesting that parent's sociodemographic variables influence male's materialism level, as overall there was no relationship between any of the socioeconomic status measures and level of materialism. These results defied expectations, and suggest that materialism is a value largely independent of overall socioeconomic status, at least for undergraduate psychology students at this institution. Particularly surprising is the lack of relationship between materialism and subjective social status; people do not seem to value material goods differently regardless of where they place themselves on the social ladder.

### Subjective Well Being

Socioeconomic status does not appear to be related to subjective well being, although subjective social status does. Materialism level did show the expected moderate negative relationship with subjective well being.

If, indeed, the main factor determining the relationship between money and subjective well being is the discrepancy between what one has and what one desires (Solberg et al., 2002), the gulf between these states is likely mediated in the materialistic

individual through the process of hedonic adaptation. Materialism remained consistently negatively associated with subjective well being even when controlling for socioeconomic status and subjective social status. Thus, whether one is either objectively or subjectively successful in life, relative to others, does not change the relationship between materialism and happiness.

In further examining the individual differences that lead to subjective well being, it appears that trait anxiety is deserving of further attention. Not only is insecurity closely related to materialism, when the relationship between materialism and subjective well being is examined controlling for trait anxiety, the relationship becomes insignificant. This leads support to previous observations that the relationship between materialism and subjective well being is largely a function of the role of self-doubt (Srivastava, Locke, & Bartol, 2001).

Life engagement, or “purpose in life,” is also positively related to life satisfaction. This makes sense, as these constructs are highly related, both in terms of positive correlations as well as in the “face validity” of the questions. What is surprising is the negative beta ( $\beta = -.141$ ) returned in the prediction model of locus of control and subjective well being, particularly as there was a significant positive zero-order correlation between these constructs. One test of the satisfaction with life scale returned inconsistent results using Rotter’s locus of control scale: one sample was positively correlated, one was not. In addition, the “self sufficient” trait from the 16PF Multidimensionality inventory was significantly negatively related to subjective well being, and the “self-control” trait from this sample was not related (Emmons & Diener,



1985). Further investigation of the Internal Control Index may prove useful for resolving these disparate results.

In the model for predicting subjective well being, the relationship of the materialism subscales are illuminating. Materialism centrality is not included in the model, materialism defined happiness is negatively associated, and materialism defined success is positively related. When happiness is defined through material success, it is likely subject to the effects of hedonic adaptation: no matter how much one succeeds, it is never enough. Like Sisyphus and his boulder, the zenith is never reached, and “true happiness” is never attained.

However, materialism defined success does seem to be positively related to subjective well being. More research needs to be conducted to explain the relationship between these variables. Although materialism has often been seen as a constellation of goals and values that can “crowd out” more prosocial attributes, it may be possible that aspects of materialism can be beneficial to certain individuals, particularly in the context of consumer culture. The relationship between materialism and subjective well being may be, as suggested by Srivastava et al. (2001), more about the motives than the money.

#### Strengths and Limitations

This study, overall, has accomplished the initial goal of looking deeper into the relationship between the personality variable of materialism and the social psychology of money. It has introduced further nuances of analysis into exciting recent areas of research, as well as presented evidence to help bolster age-old debates. It has included personality measures considered to be both valid and reliable. In addition, it has

the virtue of having examined socioeconomic variables within the context of a study on money: an inclusion that is surprisingly rare in the research literature.

This study also benefits from a relatively large sample size, although the sample did lack in overall diversity. As the population that comprised the sample were largely undergraduate psychology students, it is unsurprising that 72% of the overall sample were females. In addition, the sample was nearly 66% Caucasian, which mirrors the student population of the university as a whole, but may prevent generalizing the findings to more ethnically diverse regions.

Despite these strengths, this study does have limitations. The most salient limitation is the problematic nature of the stimulus used for the money reminder. It is possible that the money poster was out of sight for many students, whose cognitive processes were engaged on solving the tangram puzzle. The study would have benefited greatly by the inclusion of activities that were integrated with the manipulation, whether solving word-descrambling tasks with money-related words (Vohs et al., 2006), drawing money from memory, or sorting representations of dollar bills (Zhou et al., 2009).

Another limitation is that the “asking for help” manipulation should be operationalized as a social task. In this experiment, it would have been better to inform the participants that the experimenter has the solutions (or clues), and they should ask if they want them. Other possibilities have been outlined in the literature (Vohs et al., 2006, Vohs et al., 2008).

Finally, an exploration of socioeconomic status seems incomplete without questions pertaining to income. Although income was left out of this experiment for specific reasons, the failure to include this measure limits some of the overall correlations

between socioeconomic status and the constructs of interest, such as exploring the relationship between materialism and subjective well being. Inclusion of this variable is recommended for future explorations of these questions.

#### Suggestions for Future Research

Half a decade ago, it was suggested that psychology as a discipline had been largely derelict in investigating one of the most central aspects of human existence: the psychological impact of money and consumer culture (Kasser & Kanner, 2004). Since that time, there has been an outpouring of new research in the field, with investigators identifying a number of consistent behaviors resulting from our interactions with money.

Future research should continue to focus on individual differences, as well as overall patterns of behavior. Investigations of the phenomena of money reminders would do well to include more personality measures, such as the Big Five (cf. Goldberg, 1993). More accurate investigations of the contribution of socioeconomic status could include measures of income. Because student populations are in transition, it may also be useful to measure not only their socioeconomic status of origin, but also their aspirations for the future.

It would also be helpful to extend the research beyond the typical population of psychology students, and seek out more diverse samples: business and marketing students, art students, and engineering students. It would be best to sample populations outside of the walls of academia entirely, as money is a universal phenomenon which is imbued with meaning for people in all stations of life.

Finally, the construct of materialism could bear further investigation. While it has often been portrayed as a negative influence on individual's lives, it is possible that it

can have benefits as well. Human beings have always desired more, whether it is more freedom, more knowledge, or more possessions. The crux of this desire is a wish for improvement; this is a wish that has given us all of the benefits of modern society.

Balancing these benefits with the social and environmental tragedies of overconsumption is the challenge of our age. Psychology is in a unique position to meet this challenge.

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## APPENDIX A

APPENDIX A – Second Questionnaire

1. How would you rate the experience of playing with the Tangram? (Please circle)

- |                 |                   |   |   |   |   |   |   |   |   |   |                  |
|-----------------|-------------------|---|---|---|---|---|---|---|---|---|------------------|
| a. Fun:         | Least Fun         | 1 | * | 2 | * | 3 | * | 4 | * | 5 | Most Fun         |
| b. Relaxing:    | Least Relaxing    | 1 | * | 2 | * | 3 | * | 4 | * | 5 | Most Relaxing    |
| c. Boring:      | Least Boring      | 1 | * | 2 | * | 3 | * | 4 | * | 5 | Most Boring      |
| d. Frustrating: | Least Frustrating | 1 | * | 2 | * | 3 | * | 4 | * | 5 | Most Frustrating |

2. Are there any other feelings you had when playing with the Tangram? Please list or describe.

3. Did you check the solution sheet when you were stuck? (Circle) YES NO

4. If you were asked to complete another tangram, would you rather work alone or with a partner? Please circle:

Alone 1 \* 2 \* 3 \* 4 \* 5 With a Partner

5. When solving for specific images with the tangram, do you think you would rather have the option of seeing the solutions, or would you rather not have access to the solutions? Please circle:

Solutions Not Available 1 \* 2 \* 3 \* 4 \* 5 Solutions Available

*Thank you!*

## APPENDIX B

## APPENDIX B – Verbal Debriefing

So, now that you've gone through the study, what do you think it was all about? What do you think I was looking for?

The main thing that I was looking for was whether you were willing to help code data, and if so how many sheets you offered to help code. So, the good news is that you don't really have to spend any time coding data for us. I was also checking to see if you looked at the solutions when completing the tangram.

This study is a follow-up to a study that found that when people are primed to think about money, they tend to be less helpful overall, as well as less likely to want help. In the room where you played with the tangram was a poster. Sometimes it is a poster of money, other times not. We wanted to see if being exposed to one image or the other affects the willingness of people to help others, or seek help for themselves.

The authors of the original study concluded that people who were primed to think about money were less helpful overall, because money makes them feel "self sufficient." We believe that the reasons are more complex than that, so we did a personality assessment that measured five personality variables: locus of control, materialism, trait anxiety, satisfaction with life, and feeling a purpose in life. We also asked some questions associated with socioeconomic status, including the questions about occupation, educational level, and that "ladder" we had you complete. Basically, the aim is to study why some people are less helpful when they are made aware of money, and why this doesn't affect others.

Here is the bottom half of the volunteer sheet, which has your contact information. <<Return to them>> I removed this so that every response you made today remains confidential. It also has my email address on it, so you can email me if you are interested in the results.

Now that you know everything about this study, I want to remind you that you have the right to have your responses dropped from the study with no consequence to you. Can I use your data in this study?

## APPENDIX C

## APPENDIX C – Questionnaire Only Debriefing Slip

### **Thank you for participating in this study!**

This study is concerned with the relationship between several individual difference variables:

- **Trait Anxiety:** a greater proneness to respond to stress with anxiety.
- **Life Engagement:** a measure of “purpose in life,” or how much life goals are valued.
- **Materialism:** the extent to which material goods and possessions and possessions are valued.
- **Satisfaction with Life:** a measurement of subjective well being, sometimes also referred to as “happiness”
- **Locus of Control:** a belief that we have control over the outcomes of our lives.
- **Socioeconomic Status (SES):** a measure of an individual or family’s social and economic position, commonly based on measures of education, income, and occupational prestige.
- **Subjective Social Status (SSS):** an individual’s perception of their relative position within the social hierarchy.

If you have any further questions, or would like to be notified of the results, please contact Jason Tate:  
jtate4@mail.csuchico.edu.



## APPENDIX D

APPENDIX D – Informed Consent

**Informed Consent**

This research study is concerned with individual personality traits and their relationships with approaches and responses to specific tasks. You will be asked to complete a self-evaluation questionnaire consisting of 9 parts. Each part has its own instructions, so please read these carefully. There are no right or wrong answers to any items in the questionnaire, so please answer as honestly as you can. Often, your first choice is the best. Next, you will be asked to play a game, and then answer a few more questions about your experience. Total time for your participation should be under 45 minutes.

Your answers are completely anonymous and confidential. Your name or other identifying information will not be linked in any way to your questionnaire or any other responses you make during the course of the study. This page and your signature below will not be attached or connected in any way to your questionnaire and responses.

Your participation is completely voluntary. If you do decide to participate, you are free to stop your participation at any time without penalty.

Every measure has been taken to minimize the possibility of risk or discomfort to you. We hope you find this experience enjoyable, even fun. Answering the questions might help you find out a bit about yourself (due to the steps taken to ensure your anonymity, however, we will not know or be able to answer any questions about your responses).

You will be given a more thorough explanation of the measures used, as well as the purposes of the study, when your participation is completed.

If you have further questions about this study, please contact Jason Tate at (530)519-5608, or email [jtate4@mail.csuchico.edu](mailto:jtate4@mail.csuchico.edu). You may also contact Dr. Lawrence Herringer at Modoc Hall 203, or email [LHerringer@csuchico.edu](mailto:LHerringer@csuchico.edu).

Thank you for participating in this research study!

I have read the above explanation of the research study and I agree to participate:

\_\_\_\_\_  
Signature

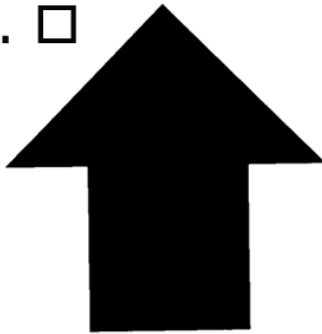
\_\_\_\_\_  
Date

## APPENDIX E

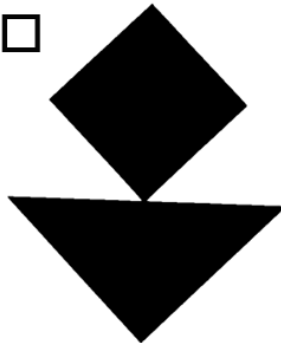
APPENDIX E – Tangram Worksheet

Indicate (by checking the box) which image(s) you were able to solve:

1.



2.



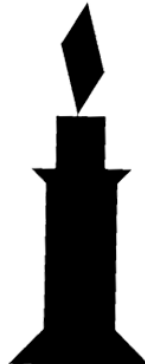
3.



4.



5.



6.



Did you create any of your own solutions or images? If so, please describe each one. If you need more space, you can use the back of this form:

## APPENDIX F

APPENDIX F – Appeal for Help Slip

Please Help!

How many packets can you help us code?  
(Each packet takes approx. 3 minutes)

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Please list your name and contact information  
(preferably email)

---

Thank you! Jason Tate jtate4@mail.csuchico.edu