

LOWERING THE PRICE(S) OF MATERIALISM: CAN SECURE PERSONAL
ATTACHMENTS BE UTILIZED TO REDUCE MATERIALISTIC VALUES AND
BEHAVIORS?

by

CHRISTOPHER D. HENRY

(Under the Direction of Leonard L. Martin)

ABSTRACT

Materialism is the desire to possess unneeded material goods and the tendency to view happiness and success in life in terms of what one owns. In addition to traditional religious and social criticisms, recent empirical evidence also has suggested that materialism is problematic for both individuals and society. After reviewing research suggesting problematic correlates and consequences of materialism in major areas of psychological well-being, a number of factors influencing the development of materialism are considered, with special consideration given to the role of experiences of insecurity. Then, after identifying an intervention aimed at priming relational security, I present two studies that explore the effects of this procedure. Hypothesizing that increasing relational security can decrease materialism, these studies focus on the effects of priming relational security on endorsement of materialistic values (Study 1) and engagement in materialistic behaviors in a social commons dilemma (Study 2). The general relational security hypothesis received limited support from Study 1, but strong support from Study 2.

INDEX WORDS: Materialism, Insecurity, Relational Security, Values, Commons Dilemma

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DEDICATION

I would like to dedicate this dissertation to all those in my personal life who have stood by me so steadfastly throughout my long and winding academic career. Through numerous schools, degrees, moves, and all the ups and downs of life, you all have meant more to me than I can express.

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CHAPTER 1

INTRODUCTION

Materialism and Its Discontents

In many industrialized nations, entire fields of business, such as the advertising and marketing industries, strongly encourage citizens to engage in lifestyles characterized by high levels of material consumption. At the individual level, consumption habits are influenced by an individual's level of materialism, or the tendencies to desire and acquire material objects not strictly needed for subsistence, as well as to view success and happiness in terms of what one owns.

Yet, despite its function as an engine of consumer spending, individual materialism has been subject to frequent criticism throughout history. All major world religions, for instance, have criticized excessive materialism as antithetical to religious fulfillment (Belk, 1983). Social critics as well have attacked materialism on a number of levels. On the personal level, materialism has been criticized for its tendencies to lead to overreliance on material goods for meaning (Williams, 1980; Lasch, 1979) and to an ongoing sense of personal dissatisfaction, as material goods consistently fail to deliver expected levels of happiness and well-being (Scitovsky, 1976; Campbell, 1994).

At the social level, materialism has been criticized for its tendencies to lead to superficial displays of "conspicuous consumption" aimed at maintaining individual and/or class differences (Veblen, 1899; Bourdieu, 1984; Schor, 2000), to soaring levels of personal debt and bankruptcy (Schor, 1998), and to a general undermining of civic engagement and a corresponding

impoverishment of the public sector (Galbraith, 1957). And at the global level, materialism (as well as the consumer culture that it fuels) has been attacked for its role in the exploitation of laborers in third world countries (Goodman & Cohen, 2004) and in abuses of the natural environment committed in the efforts to produce more material goods (Durning, 1992; Taylor & Tilford, 2000; Winter, 2004). While materialism is not without its defenders (e.g., Douglas & Isherwood, 1996; Fiske, 1989; Twitchell, 2000), the vast majority of the critiques of materialism are of a decidedly negative bent.

In the present dissertation, I will begin by discussing the available empirical evidence that there is, in fact, ample reason for concern about the negative consequences of materialism. I will do so by, first, exploring a large body of research, drawn from a range of academic fields, documenting the negative outcomes associated with the pursuit of materialistic goals and behaviors. Then, I will discuss evidence related to factors that contribute to the development of high levels of individual materialism. And finally, I will present the execution and results of an attempted intervention aimed at decreasing individual materialism, conducted across two original empirical studies. The first study attempts to lower individual endorsement of materialistic values, while the second attempts to decrease explicitly materialistic behaviors. But first, I will begin by outlining a number of major theoretical conceptualizations of materialism.

Empirical Conceptualizations

Marketing professor Russell Belk has conceptualized materialism as a collection of personality traits. In his original formulation, Belk (1984) argued that materialism consists of three primary traits. *Possessiveness* is theorized as a tendency to maintain close control over one's possessions, while *nongenerosity* reflects an unwillingness to give to or share with others,

and *envy* is characterized by displeasure over another person's ownership of a desired object. Belk has developed a widely-used materialism measure, consisting of three sub-scales for possessiveness, nongenerosity, and envy (Belk, 1985). A fourth trait, *preservation*, referring to a tendency to concretize, or make tangible, personal experiences through material objects such as photographs and souvenirs (Ger & Belk, 1996), has also been proposed for this conceptualization, though it is not reflected in current versions of the Belk measure.

After examining numerous definitions of materialism, marketing professors Marsha Richins and Scott Dawson concluded that three themes were dominant (Richins & Dawson, 1992). First, materialists tend to place possessions and their acquisition at the center of their lives (*acquisition centrality*). Second, materialists tend to view possessions and acquisition as essential to happiness and well-being (*acquisition as pursuit of happiness*). And finally, materialists tend to judge their own and others' success by the material goods that they own (*possession-defined success*). Richins and Dawson have developed a widely-used materialism measure to assess individual endorsement of each of these values (Richins & Dawson, 1992).

Beginning with an application of Maslow's hierarchy of needs (Maslow, 1954), political scientist Ronald Inglehart has defined materialism as a chronic focus on lower-level needs for comfort and safety at the expense of higher-level needs for belonging, esteem, and self-fulfillment (Inglehart, 1990). Inglehart has expanded his application beyond Maslow's individually-oriented model by reframing materialism as a sociopolitical orientation. His primary method has been to ask participants to prioritize a number of national goals. Consistent with an individual focus on comfort and safety, materialists tend to place greater value on goals such as economic growth and strong national defense (Abramson & Inglehart, 1995).

Ahuvia and Wong have compared and contrasted the materialism constructs of Belk, Richins and Dawson, and Inglehart, presenting a succinct and helpful categorization scheme (Ahuvia & Wong, 2002). Specifically, they have labeled Belk's trait-based materialism construct as *personality materialism*, Richins & Dawson's belief-based materialism construct as *personal values materialism*, and Inglehart's more broadly-based conceptualization as *sociopolitical materialism*. These three prominent constructs have recently been joined by a more explicitly social psychological conceptualization of materialism, which I will outline in the following section.

Psychological Approaches to Materialism

Prior to the last decade or so, surprisingly few psychologists had explored the individual effects of materialism. But consistent with the traditional criticisms outlined above, those few attempts also have tended to be of a critical nature. For instance, Erich Fromm (1955) described a "marketing character," resulting from a failure to meet one's needs for relatedness, resulting in a loss of sense of inherent worth, and a tendency to come to see oneself in commodity terms. Fromm (1976) also discussed two distinctive modes of existence, the experiential mode of *being*, and the materialistic mode of *having*, with the latter conceptualized as diminishing the quality of the former. Humanistic theorists (e.g., Maslow, 1954; Rogers, 1961) and self-determination theorists (e.g., Deci & Ryan, 1985) have also argued that materialistic strivings detract from happiness and well-being while alienating people from the things that are truly meaningful in life, such as growth, connection with others, and autonomy.

More recently, psychology has finally begun to address these issues in a more sustained and empirical manner, with the work of Tim Kasser and his colleagues being of special

significance (beginning with Kasser & Ryan, 1993). Kasser (e.g., 2002) has conceptualized materialism within the framework of a *materialistic value orientation* (MVO). Materialistic values are theorized as synonymous with extrinsic pursuits, such as wealth, fame, and image, while intrinsic pursuits such as relationships, personal growth, and community involvement, on the other hand, are held to represent nonmaterialistic values. Work in this area has often involved assessing the correlates and consequences of pursuing extrinsic (materialistic) goals rather than intrinsic (nonmaterialistic) goals (e.g., Kasser & Ryan, 1993, 1996).

The work of Kasser and his colleagues focuses primarily on how well the materialistic value orientation meets (or fails to meet, as the case might be) a number of central human needs. Following the work of Maslow (1954) and Deci and Ryan (1985), Kasser focuses on a number of needs viewed as basic to motivation, functioning, and well-being: needs for safety and security; for competence, efficacy, and self-esteem; for connectedness; and for autonomy and authenticity (Kasser, 2002).

Kasser, et al's conceptualization overlaps somewhat with the predominant materialism conceptualizations discussed above. Yet, with its emphasis on values and needs and close ties to psychological approaches to well-being, it is perhaps uniquely suitable to a social psychological exploration of materialism and the attempt to reduce it through experimental interventions. In the chapter that follows, I will present evidence related to the individual, interpersonal, and social impacts of materialism, much of it consistent with Kasser's materialistic value orientation approach.

CHAPTER 2

MATERIALISM'S CORRELATES AND CONSEQUENCES

Materialism and Personal Well-Being: Happiness, Health, and Self-Esteem

Considerable empirical evidence suggests that the relationship between materialism and personal well-being is, at best, nonsignificant, and at worst, deeply problematic. Many studies have failed to show any positive gains related to wealth or materialism. Early, so-called “happiness” studies, for instance, suggested that rich and poor countries have roughly equal proportions of happy individuals and that increases in national wealth do not lead to changes in proportions of happy people (e.g., Easterlin, 1974).

More recently, Ed Deiner and colleagues followed 500 adults over a nine-year period, determining that changes in participants’ incomes did not significantly predict changes in their happiness and life satisfaction (Deiner, et al., 1993). And Myers (2003) reported that while average personal income rose dramatically from 1957 to 1995, the percentage of Americans describing themselves as “very happy” actually fell from 35 to 32 percent.

The available research consistently suggests that progress towards materialistic goals does not result in demonstrable well-being benefits (e.g., Sheldon & Kasser, 1998). Perhaps surprisingly, not even winning a state lottery appears to elevate well-being in any sort of enduring way (Brickman, Coates, & Janoff-Bulman, 1978). Studies such as these, at a minimum, bring into question the widely accepted view that materialistic lifestyles lead to greater happiness and personal well-being.

Further evidence suggests that materialism not only fails to increase personal well-being, but may actually work to undermine such well-being. Much research, in fact, suggests that highly materialistic people are, in general, less happy and satisfied with their lives than less materialistic people (e.g., Belk, 1984; Csikszentmihalyi, 1999; Kasser & Ryan, 1993; Richins & Dawson, 1992; Sirgy, et al., 1998).

Additional research documents connections between high individual levels of materialism and an array of specific negative health factors. These include higher levels of depression and anxiety (Kasser & Ryan, 1993), more frequent physical symptoms of illness (Kasser & Ryan, 1996), higher occurrences of a variety of mood, conduct, substance abuse, and personality disorders (Cohen & Cohen, 1996), and less frequent experiences of positive emotions (Sheldon & Kasser, 1995). Perhaps most surprisingly, highly materialistic individuals also report experiencing more negative emotions after purchases than do less materialistic individuals (Richins, 1994).

Materialism also appears to be related to lower self-esteem in general (Kasser & Ryan, 2001). And when co-occurring with high self-esteem in individual participants, materialism may be at least partially attributable to the higher than expected rates of narcissism found among highly materialistic participants (e.g., Cohen & Cohen, 1996; Kasser & Ryan, 1996). These findings suggest that the self-esteem of highly materialistic individuals may be unstable and contingent, rather than secure (cf., Kernis, et al., 1993).

There does appear, however, to be one important qualification to the consistently negative findings on materialism and well-being: increased wealth and materialism are associated with a higher overall standard of living (Richins & Rudmond, 1994). And for those living below basic subsistence levels, incremental increases in material ownership may play an

important role in survival and the maintenance of a basic sense of dignity. But beyond meeting basic survival needs, wealth appears to do little to elevate satisfaction with life. In fact, in nations in which the per capita annual income is above \$10,000, higher levels of wealth do not successfully predict greater well-being (Inglehart, 1990). Beyond that level, increased wealth and consumption appear to offer rapidly diminishing returns.

Materialism and Relatedness with Others

Values, in general, have been conceptualized in terms of their opposition to other values (e.g., Rokeach, 1973). And the work of values researcher Shalom Schwartz suggests that materialistic values such as wealth, social recognition, and public ambition are inherently opposed to nonmaterialistic values such as honesty, helping others, desiring true friendship and mature love, tolerance, and protecting the welfare of others and the natural environment (Schwartz, 1996). Consistent with this, empirical assessments have found that participants with highly materialistic value orientations (i.e., those focused on wealth, fame, and image) tend to report lower overall quality relationships with their friends and lovers. Specifically, they report shorter and more negative relationships characterized by more conflict and emotional extremes (Kasser & Ryan, 2001).

Highly materialistic individuals have also been shown to be less likely to show empathy (Sheldon & Kasser, 1995), less likely to report engaging in prosocial behaviors, such as lending time or money (McHoskey, 1999), more likely to engage in instrumental friendships, based upon what others can do for them (Schwartz, 1994), more likely to report using others for instrumental purposes (Khanna & Kasser, 2001, as cited in Kasser, 2002), more likely to score high in Machiavellianism (McHoskey, 1999), and more likely to compete than cooperate in a “prisoner’s

dilemma” game (Sheldon, et al., 2000). There is also evidence that these tendencies are readily apparent to other people, such that a widely-held negative cultural stereotype about highly materialistic people exists (Fournier & Richins, 1991).

In addition to the preceding interpersonal difficulties associated with high levels of materialism, problems have been documented at the broader cultural level as well. For instance, American college students focused on financial success have been shown to be more likely to report feelings of estrangement from their culture and to feel that their ideas and opinions on important matters differ from religious and national norms (McHoskey, 1999). These findings have been corroborated by another study in which both American and Indian students who were high on the materialistic value orientation reported more feelings of alienation and separation from society (Khanna & Kasser, 2001, as cited in Kasser, 2002).

Kasser (2002) argues that at least two processes account for this array of findings. First, compared to less materialistic people, highly materialistic individuals tend to devalue explicitly close relationships and community involvement. And in fact, a qualitative study of people high or low on materialism suggests that highly materialistic individuals avoid intimacy and connection with others even in their dreams (Kasser & Kasser, 2001)! Second, it may be that materialistic values undermine the relationships that highly materialistic individuals do have. According to this rationale, materialistic values damage one’s abilities to satisfy the relational needs of both self and others for closeness and connection.

While the exact manner in which materialism impacts relationships has yet to be demonstrated definitively, the evidence cited above suggests that the overall effects are highly damaging to the relationships of highly materialistic individuals. I now turn to evidence

suggesting that materialism also undermines one's ability to find satisfaction in authentic self-direction.

Materialism and Autonomy: Freedom and Authenticity

The work of Schwartz (1996) suggests that, to the extent that people endorse materialistic values, they also tend to devalue nonmaterialistic values. In addition to being opposed to values that concern relatedness with others, Schwartz argues that materialistic values also stand opposed to values related to self-direction, freedom, and authenticity.

At first glance, it may appear difficult to reconcile this argument with the widely-held cultural stereotype of the highly materialistic person as assertive, driven, and uncompromising in the pursuit of his or her goals. But it can be asked whether one's motivations for engaging in materialistic behaviors (such as wealth accumulation) are of an inner-directed or outer-directed nature. This is an important question, as research consistently suggests sub-optimal outcomes on a variety of measures of psychological well-being for extrinsically motivated individuals, relative to their more intrinsically motivated counterparts (e.g., Kasser & Ryan, 1993; Kasser & Ryan, 1996).

Autonomy and authenticity have been theoretically defined as closely related to intrinsic motives (e.g., Deci & Ryan, 1985), whereas materialistic values have been defined as closely related to extrinsic motives, which are concerned with the expectations and opinions of others. And classic social psychological research has established that extrinsic motivation can come to undermine intrinsic motives, and by extension, autonomous self-direction (e.g., Deci, 1971; Deci, Koestner, & Ryan, 1999). These findings suggest that extrinsic and intrinsic motivations may indeed stand opposed to one another. And if individuals high in materialism are also high in

extrinsic motivation, this suggests that these individuals may find it difficult to satisfy their intrinsic needs for autonomous and authentic self-direction.

There is also empirical evidence to support this contention. For instance, participants scoring high on materialism tend to report more social anxiety and more frequent feelings of public self-consciousness (Schroeder & Dugal, 1995), to report being more concerned with appearing successful to others (Srivastava, et al., 2001), and to focus more on obtaining rewards than having choices (Kasser & Ryan, 1993). Highly materialistic individuals also tend to report pursuing goals due to internal guilt and/or external pressure than for intrinsically satisfying reasons (Sheldon & Kasser, 2001; Srivastava, et al., 2001). This external focus also leads highly materialistic individuals to report fewer characteristics of flow in their work (Khanna & Kasser, 2001, as cited in Kasser, 2002).

Additional evidence for lack of autonomy comes from clinical work suggesting that, for at least some people high in materialism, materialistic behaviors such as shopping are felt as compulsions, rather than freely-chosen activities (Kottler, 1999; Hartston & Koran, 2002). Research suggests that between 2% and 10% of adults in the United States, Canada, Germany, and the United Kingdom are considered compulsive shoppers, who experience considerable distress and incur considerable debt, as a result of their addictions to shopping (Elliott, 1994).

And even among the non-compulsive shopping public, there is evidence that materialistic purchases are less satisfying than purchases aimed at acquiring unique life experiences, such as skydiving or sampling international cuisine (Van Boven & Gilovich, 2003; Van Boven, 2005). While the latter offer opportunities to fulfill one's needs for personal growth and authenticity, the former are subject to all of the forms of dissatisfaction chronicled above.

Kasser (2002) suggests that materialistic value orientations work against intrinsic experiences of autonomy and self-direction in at least three related ways. First, materialistic values lead us to focus on extrinsic rewards. Second, materialistic values lead us to be especially concerned with how others see us, and decrease our satisfaction in intrinsic experiences, which often require a loss of self-awareness and self-focus (Csikszentmihalyi, 1990). And third, materialistic values encourage behaviors that are low in their potential for experiences of flow, such as watching television. All of these factors work together to undermine one's ability to experience true autonomy through the pursuit of materialistic values.

Materialism and the “Big Picture”: The Natural Environment and Globalization

Before turning to evidence regarding the causes of the materialistic value orientation, it is important to address, at least briefly, some of the consequences of materialism that reach beyond the individual and his or her immediate social environment and in fact, extend to the global level. For some time now, various writers have written of the impact of high societal rates of materialism on the natural environment (Durning, 1992; Taylor & Tilford, 2000; Winter, 2004), as well as its impact of the lives of those who labor to produce our goods around the world (Marx, 1867/1976; Goodman & Cohen, 2004; Kasser, et al., in press). And while the focus of this discussion is largely on the implications of a materialistic value orientation and the pursuit of materialistic goals for the individual, any analysis of materialism that fails to address these important aspects would be myopic. As such, I now address briefly some of the thought and research relevant to these areas.

At the environmental level, Fromm (1976) argued that obsessive indulgence in the materialistic mode of *having*, rather than the experiential mode of *being*, leads to an attitude of

disdain for the natural world. And multiple theoretical conceptualizations agree that materialistic values conflict with values about protection of the environment (e.g., Abramson & Inglehart, 1995; Schwartz, 1996). It has also been documented empirically that individuals high in the materialistic value orientation have more negative attitudes about the environment and engage in fewer environmentally conscious behaviors than their less materialistic counterparts (Richins & Dawson, 1992; Saunders & Munro, 2000). Individuals high in materialism have also displayed higher levels of greed and consumption in environmentally-oriented dilemmas (Sheldon & McGregor, 2000).

With respect to the plight of laborers around the world, I have already discussed work suggesting that highly materialistic individuals are more likely to see other people in terms of their instrumental uses, rather than their full personhood (Schwartz, 1994; Khanna & Kasser, 2001, as cited in Kasser, 2002), and are characterized by Machiavellian attitudes towards others (McHoskey, 1999). But Goodman and Cohen (2004) argue that even with the best of intentions, materialism can still contribute to a kind of “anonymous inequality,” in which our materialistic consumption patterns (whether high or low) inadvertently contribute to global inequalities. This is because, in a global marketplace, each of our purchases supports existing trading relationships between countries, the particular forms of government in the countries of manufacture (which are sometimes oppressive), and existing relations between management and workers around the world (which are sometimes brutally one-sided, as in the case of “sweatshop” labor).

These are weighty concerns that are perhaps seen as beyond the purview of psychological analysis. But when combined with the evidence discussed above demonstrating that highly materialistic people are less satisfied with their lives, are less physically and psychologically healthy, and have less successful and satisfying relationships, it becomes incumbent on

psychologists to begin to offer constructive remedies for this state of affairs. While alternatives may be offered at a number of levels, consistent with the present dissertation's social psychological approach, I will attempt to do so at a more micro, individual level, rather than a macro, cultural level. Before doing so, however, one must be able to identify and articulate the factors that contribute to the materialistic value orientation and lifestyle. I turn to this task in the following chapter.

CHAPTER 3

FACTORS INFLUENCING THE MATERIALISTIC VALUE ORIENTATION

Given that the available evidence suggests that endorsement and pursuit of materialistic values are consistently correlated with a range of negative traits, behaviors, and experiences, it seems a logical next step to attempt to articulate a model of materialistic value development. The evidence suggests two primary antecedents of the materialistic value orientation rooted in social developmental processes: experiences of *insecurity*, and exposure to *modeling* of materialistic values and behaviors (Kasser, et al., 2004). An additional social perception process has also been suggested as relevant to individual levels of materialism, that of *social comparison* (Richins, 1995). I now turn to evidence from each of these areas.

Experiences of Insecurity

Cross-cultural research suggests that materialism is higher in individuals who are insecure and doubtful of their self-worth (Ger & Belk, 1996). Emotional insecurity, in turn, is often theorized as rooted in insecure attachments with primary caregivers (e.g., Bowlby, 1969, 1973). And in fact research with materialistic teenagers suggests that they have less nurturing mothers (Kasser, et al., 1995), that they perceive their parents to be less likely to listen to their perspectives, acknowledge their feelings, and support their desires for autonomy (Williams, et al., 2000), and that they are more likely to come from divorced families than less materialistic teens (Rindfleisch, et al., 1997). Parents of materialistic teens have also been found to be more likely to be possessive of their children, to believe their children can not take care of themselves,

and to provide low structure but administer harsh punishments (Cohen & Cohen, 1996). These parental strategies are consistent with insecure attachment styles (e.g., Ainsworth, 1973).

At a broader level, the insecurities associated with low socioeconomic status and economic difficulties also appear to be significant predictors of materialism. Research suggests that individuals with high materialistic value orientations come disproportionately from lower socioeconomic backgrounds (Kasser, et al., 1995; Cohen & Cohen, 1996), that people in poorer nations endorse more materialistic values than those from wealthier nations (Inglehart & Abramson, 1994), and that people everywhere appear to become more materialistic in periods of economic difficulty or when national security is threatened (Abramson & Inglehart, 1995).

While the temporal sequence of variables in many of these studies suggests insecurity as a plausible cause of materialism, none of them are able to establish definitively a causal link between insecurity and materialism, due to their inherently correlational nature. Recently, however, experimental evidence has been generated suggesting that insecurity may indeed play a causal role in the development of a materialistic value orientation.

For instance, terror management theory (e.g., Solomon, Greenberg, & Pyszczynski, 1991) argues that when participants are asked to contemplate their mortality, feelings of insecurity are aroused. And in an experimental application to the issue of materialism, individuals who were asked to contemplate their mortality reported expecting higher incomes in the future and behaved more materialistically in a “forest management” game (Kasser & Sheldon, 2000). Additionally, participants who were high in chronic self-doubt endorsed more materialistic values after being primed to experience doubt and insecurity and participants with chronic perceptions of *anomie* (beliefs that society lacks clear guidelines for behavior; cf., Seeman, 1991) endorsed more materialistic values after being primed with the concept of normlessness (Chang & Arkin, 2002).

These experimental studies, along with correlational studies suggesting that feelings of inadequacy in an area of personal importance are associated with higher materialism (Braun & Wicklund, 1989), suggest that materialism may be used as something of a coping strategy when one's insecurities are brought to light. They offer evidence that materialism may be increased by momentary threats to individual security as well as the more chronic experiences of insecurity cited above. Additionally, they offer promising initial evidence for the causal role of insecurity in the formation of the materialistic value orientation.

Modeling of Materialistic Values and Behaviors

Modeling of values and behaviors can serve as powerful elements in others' learning processes (Bandura, 1971). Modeling also can be aided by the additional process of *internalization*, through which individuals come to adopt dominant familial and cultural values and regulations for behavior (Ryan & Connell, 1989). And research suggests that individuals who report growing up in social environments with highly materialistic role models (e.g., parents, friends, teachers) in fact score high in materialistic value orientations themselves (Ahuvia & Wong, 1998). More specifically, mothers who place strong emphasis on financial success tend to have children who do so as well (Kasser, et al., 1995).

One of the most powerful sources of the modeling of materialistic values and behaviors in contemporary Western culture is commercial television. And a number of correlational studies suggest that highly materialistic individuals do indeed watch more television than the average person (Rahtz, Sirgy, & Meadow, 1989; Sirgy, et al., 1998; Kasser & Ryan, 2001). This suggests that their embrace of materialistic values might stem from high exposure to the materialistic models featured so prominently in commercial mass media.

While it can be difficult to disentangle causality in such studies, the consistency of their findings in the context of the broader issue of modeling raises interesting possibilities. Even if one argues that an individual's preexisting materialism drives his or her television viewing habits, this does not rule out the influence of *earlier* sources of modeling, such as significant socialization agents. In other words, whether one's level of TV viewing is a cause or consequence of materialism, modeling (in one form or another) remains a compelling candidate for one of the root causes of materialism.

Social Comparison Processes

Social critics have long argued that materialistic pursuits are fueled by a desire for "conspicuous" or "competitive" consumption aimed at communicating one's relative social standing (Veblen, 1899; Schor, 2000). Consistent with these criticisms is Richins' (1995) suggestion that the idealized materialistic images presented to us through mass media and other channels trigger upward social comparisons, which reveal stark discrepancies between those idealized images and our actual circumstances.

And evidence suggests that highly materialistic people are both more concerned with social comparison (Sirgy, 1998) and more likely to engage in upward social comparison with more wealthy and successful models (Richins, 1992). The results are often dissatisfaction with who we are and the motivation to reduce perceived discrepancies through increased consumption. Yet, as the evidence presented in the previous chapter illustrates, this turns out to be a rather poor remedy for the initial negative feelings.

Research supports Richins' thesis by demonstrating high positive correlations between television viewing levels and endorsement of materialistic values, with accompanying low levels

of reported well-being from those at the high end of these correlations (Sirgy, et al., 1998; Kasser & Ryan, 2001). Richins (1991) also found that women who viewed advertisements of idealized models reported lower satisfaction with their own attractiveness. Collectively, these studies suggest that materialism undermines personal well-being and happiness by forcing us to compare ourselves to the often impossibly high standards presented in the highly materialistic images found in advertising and other channels of commercialized culture.

Implications for the Present Studies

While acknowledging the multiple factors influencing personal levels of materialism, I propose to focus in these studies on the implications of one specific factor in individual materialism, namely the role of insecurity. The large body of research exploring the relationship between insecurity and materialism makes this a promising avenue. Additionally, an experimental procedure developed by Mikulincer and colleagues (e.g., Mikulincer, et al., 2001; Mikulincer, et al., 2003), which will be detailed in the following chapter, has already proven successful in fostering relational security in participants. Such a procedure might prove useful in reducing the insecurity that fuels materialism.

Operating under the assumption that decreasing insecurity should lead to lower levels of materialism, the present studies will attempt to apply the relational security procedure developed by Mikulincer and colleagues with the goal of lowering both the endorsement of materialistic values and the pursuit of materialistic behaviors. The next chapter offers ethical, theoretical, and methodological considerations for applying such an intervention.

CHAPTER 4

REDUCING MATERIALISM: WHAT CAN BE DONE?

The preceding chapters have documented evidence that materialism does not lead to increases in happiness or personal well-being, and that the materialistic value orientation actually appears to undermine important needs for esteem, relatedness, and autonomy. Further critiques have asked us to consider the implications of materialism on such macro-factors as the natural environment and global labor arrangements.

While previous research and critique have thoroughly documented the problems connected with materialism, as well as suggested its root causes, surprisingly little research has been done that attempts to offer corrective measures that might lead to lower levels of endorsement of materialistic values and engagement in materialistic behaviors and lifestyles. But given the pressing nature of the problem at individual, interpersonal, societal, and global levels, it is imperative that researchers begin to move beyond the merely descriptive phase and begin to offer constructive interventions aimed at reducing personal levels of materialism. Thus, the present research seeks to address this problem in an applied manner.

Objectivity, Ethics, and the Goal of Reducing Materialism

Before outlining the present attempt, however, it may be necessary to address potential concerns about the inherent value assumptions of such an approach. In attempting to reduce materialism, one opens the door to possible charges of a moralistic anti-consumerism or anti-

capitalism bias, as well as concern that such biases damage the objectivity of one's work. Two primary responses are available to such concerns.

First, it is inherent in the applied approach to psychology that one seeks to address, and potentially remedy, pressing real world concerns through carefully designed and executed research. The Ethical Standards of the APA, in fact, highlight the injunction that psychological knowledge should contribute to general human welfare (American Psychological Association, 2002). The present research is an attempt to do so by addressing the large and consistent body of research leading to the conclusion that materialism is harmful to individual happiness, well-being, and interpersonal relationships, with the overall aim of offering some form of alleviation for these negative consequences.

And second, potential charges of bias against research aimed at reducing materialism could be said to highlight something of a disciplinary double standard, as many decades of work by psychologists aimed at *increasing* materialism have rarely generated serious criticism. At least since John B. Watson's work for the J. Walter Thompson advertising agency in the late 1920's (cf., Kreshel, 1990), psychologists have maintained close relationships with the marketing and advertising industries. The work of such psychologists is explicitly aimed at increasing public levels of materialistic acquisition, in order to increase the sales revenues of the companies that employ them.

Though this state of affairs has come under some recent scrutiny, particularly in the area of marketing to children (e.g., Kanner, 2000; Levin & Linn, 2004), it has as yet evoked no large measure of controversy, and in fact, appears to be accepted by much of the psychological establishment as a valid and natural convergence of interests. Therefore, I argue that if work aimed at *increasing* materialism is considered acceptable, even in light of considerable research

documenting its negative associations and effects, then such evidence combined with the APA's ethical codes suggests that work aimed at *decreasing* materialism should be accorded at least comparable acceptance and encouragement from the psychological research community.

Having attempted to articulate an ethical defense for the overall aims of the present studies, I now turn to theoretical and methodological specifics.

Insecurity and Materialism

As discussed in the previous chapter, research suggests that materialism develops out of a number of primary pathways: experiences of insecurity, the presence of materialistic models, and social comparison processes. Given the considerable negative correlates and consequences of materialism documented in earlier chapters, an understanding of the processes that lead to materialism presumably could be utilized to develop an intervention aimed at reducing it. The present research aims to do so by further exploring the implications of one specific root contributor to personal materialism, namely experiences of insecurity.

To recap briefly, evidence suggests that insecurities in attachments with early caregivers are strong predictors of the development of a materialistic value orientation later in life (Cohen & Cohen, 1996; Kasser, et al., 1995; Rindfleish, et al., 1997; Williams, et al., 2000). Research on broader factors also suggests that the development of a materialistic value orientation is associated with coming from lower socioeconomic backgrounds (Kasser, et al., 1995; Cohen & Cohen, 1996) and with societies experiencing economic difficulties and uncertainties (Inglehart & Abramson, 1994; Abramson & Inglehart, 1995). And finally, momentary experiences of insecurity have also been demonstrated to produce more materialistic behaviors and endorsement of materialistic values in experimental settings (Kasser & Sheldon, 2000; Chang & Arkin, 2002).

The available evidence suggests that, if higher levels of materialism are rooted in experiences of insecurity, then interventions aimed at increasing feelings of security might be able to lower levels of both materialistic behaviors and endorsements of materialistic values. In order to understand how such feelings of security might be produced, it may be instructive to turn to prominent theories of attachment.

Attachment Styles

According to Bowlby (1969, 1973), how others react to one in times of need and stress has important consequences for one's overall emotional and interpersonal well-being. Specifically, if others generally are available and supportive in our times of need, this facilitates the development of a secure attachment style with them. The formation of such secure attachments is argued to contribute to our abilities to regulate our emotions, develop positive "working models" of self and others, maintain self-esteem, and engage in explorative activities.

Insecure attachments, on the other hand, generally take one of two major forms. Avoidant attachments are characterized by distrust of others, as well as attempts to avoid emotional involvements and commitments. Alternatively, anxious-ambivalent attachments are characterized by preoccupations with concerns over whether or not others will be supportive or available in stressful times.

Research has demonstrated that individuals who display more secure attachment styles react with less distress and physiological arousal to stressful events (Feeney & Kirkpatrick, 1996), are more likely to seek social support in times of stress (Fraley & Shaver, 1998), hold more positive expectations about relationship partners and are more positive in explaining partner behaviors (Collins, 1996), and have higher self-esteem (Mikulincer, 1998) than

individuals who display less secure attachment traits. Given that materialists tend to pursue wealth and consumer products in times of doubt (Kasser & Sheldon, 2000; Chang & Arkin, 2002), rather than turn to others or search for inner strengths, it would appear that interventions capable of producing greater feelings of security could succeed in lowering tendencies towards materialistic solutions to problems stemming from personal insecurities.

In the context of ongoing therapy with clients suffering from acquisitive disorders and other problems stemming from high levels of materialism, Kottler, Montgomery, and Shepard (2004) have offered a number of suggestions for therapeutic interventions. These include establishing a solid therapeutic relationship, exploring unfinished business from early attachments, exploring fears of failure and intimacy, and structuring ongoing support. All of these interventions aim to address clients' personal insecurities and to suggest more secure models of attachment for present and future relationships. Such interventions are no doubt desirable in long-term therapeutic relationships. But consistent with a social psychological focus, the present research seeks to identify more immediate situational influences that might produce analogous shifts in materialistic values and behaviors. What remains is to locate a suitable method for doing so.

Priming Secure Relational Schemas

Recent work on *relational schemas* has focused on how we perceive, interpret, and recall information about interpersonal experiences in ways that influence both our sense of self and current social interactions (Baldwin, 1992). The cognitive maps of the social world, relational schemas may be thought of as internalized patterns of relations that are built up through repeated experiences with similar interaction patterns, and include the thoughts and feelings that are

typically experienced in those situations. The repeated experiences that lead to relational schemas can create “overlearned” expectations about interpersonal interactions, which can come to function more or less automatically in future experiences in which the relational schema is triggered.

In intriguing tests of this notion, Baldwin and colleagues have utilized priming techniques to make relational schemas more accessible. For instance, Baldwin and Holmes (1987) found that college women who previously had been primed to think of their parents rated a sexually permissive story as less enjoyable than did a control group primed to think of their friends. Similar studies, utilizing a subliminal priming technique, found that a scowling picture of the Pope led to less enjoyment by Catholic women of a sexually permissive passage, while a scowling picture of their department chair led to more criticality by graduate students of their own research ideas (Baldwin, Carrell, & Lopez, 1990). And participants who were led to believe that they would meet someone similar to earlier self-generated descriptions of either a good or bad relationship reported anticipatory feelings that were consistent with their experience of the previous relationship (Hinkley & Andersen, 1996).

Collectively, these studies suggest that one’s present experiences may depend at least partially upon the relational schema that is currently active. By extension then, the priming of warm, approving, and supportive relationships might lead to behaviors and expressions of values less consistent with materialistic pursuits, and more consistent with intrinsic values such as growth, relationships, and community involvement.

To this end, Mario Mikulincer and colleagues have developed a number of strategies to prime secure base schemas. They have utilized techniques such as subliminal presentation of secure base words, such as “love” and “support” (Mikulincer & Shaver, 2001, Study 1),

exposing participants to pictorial depictions of distressed individuals being comforted by a concerned and caring other (Mikulnacer, et al., 2003, Study 2), asking participants to imagine situations in which they are surrounded by sensitive, responsive people in a time of stress (Mikulancer & Shaver, 2001, Study 2), to visualize a real, supportive person from their lives (Mikulancer & Shaver, 2001, Study 3), to recall a stressful instance in which others were available and supportive (Mikulancer, et al., 2003, Study 1), and to read a story describing an interpersonal scenario illustrative of a secure attachment (Mikulancer, et al., 2001, Study 1).

These procedures, in turn, have led to perceptions of relationship partners in more positive terms (Mikulancer & Arad, 1999), less negative evaluations of out-groups (Mikulancer & Shaver, 2001), and more empathic responses to others' needs (Mikulancer, et al., 2001). Perhaps most importantly from a values perspective, these techniques have led to heightened endorsements of self-transcendent values, such as benevolence and universalism (Mikulancer, et al., 2003). Given Schwartz's (1996) contention that materialistic values stand opposed to such values, this offers some hope for the applicability of this approach to an effort to reduce materialistic values, and perhaps by extension, materialistic behaviors as well.

Before proceeding, two important points related to this line of work should be made. First, it is important to note that no significant interactions between secure-base priming and an individual's preexisting attachment style have been found (Mikulancer & Arad, 1999; Mikulancer & Shaver, 2001). Thus, even among individuals with chronically insecure attachment styles, a sense of having a secure base can be activated contextually by encounters with available and supportive others (Mikulancer, et al., 2000). Presumably, this is because most people have had at least some experiences of available and supporting others (or can at least imagine them vividly). So the secure relational schema, no matter how latent it might be in some

avoidant or anxious-ambivalent individuals, appears to be successfully evoked and activated by the secure base priming procedures in the majority of participants.

And second, Mikulincer and his colleagues have been careful to control for the possible effects of general positive affect. Because secure-base words, images, and conceptualizations have positive affective connotations, it is important to rule this out as a possible cause of the findings. By including a positive affect control, in addition to a true, neutral control condition, they have been able to make a strong case that the significant effects of secure-base priming are not attributable to the positive connotations of the secure-base concept. This precaution strengthens the hypothesized link between security/insecurity and levels of materialism.

With a theoretical framework and methodological model in place, I now move to the methodological specifics of the current set of studies, in which the secure base priming procedure is utilized in an attempt to reduce both explicit endorsement of materialistic values (Chapter 5) and the extent to which materialistic individuals engage in materialistic behaviors (Chapter 6).

CHAPTER 5

STUDY 1: SECURE RELATIONAL SCHEMAS AND MATERIALISTIC VALUES

In Study 1, I proposed to examine whether the salience of secure base attachments could lead to lower levels of endorsement of materialistic values such as wealth, fame, and image, while simultaneously leading to higher levels of endorsement of nonmaterialistic values such as personal growth, relationships, and community involvement. Utilizing a priming procedure adapted from Mikulincer, et al. (2003, Study 1), participants were asked to recall and describe, in writing, an instance in which they were confronted with a problem they could not solve on their own, but through the help of supportive others, were able to resolve. The purpose of this procedure was to activate a sense of secure base attachment, and to assess whether this could in turn lead to lower endorsement of materialistic values.

To provide a baseline assessment of participants' value endorsements at the beginning of the session, a number of materialism measures were administered (as described below). An alternative form of value endorsement assessment was employed at the end of the session to provide a measure of any shifts in reported values as a result of the secure base priming procedure.

Study 1 predicted that, after controlling for participants' baseline endorsement of materialistic values, priming condition would significantly predict participants' scores on the outcome ("chips") measure. Specifically, it was predicted that participants who were primed with secure relational schemas would display significantly lower endorsement of materialistic values such as wealth, fame, and image on the outcome measures (relative to their initial baseline

measures), and a correspondingly greater endorsement of nonmaterialistic values such as personal growth, relationships, and community involvement, than participants receiving the neutral prime (relative to their initial baseline measures).

Method

Participants

Participants consisted of 63 undergraduates at the University of Georgia who participated in exchange for partial fulfillment of course requirements. Participants consisted of 29 males and 34 females, with an overall average age of 19.59 years ($SD = 2.51$). Race of participants (based upon participants' self-reports) was broken down as follows: 49 White Americans, 6 African-Americans, 4 Asian Americans, 2 Hispanics, and 2 participants who selected "Other."

Notice of openings for a study on personal values was posted to the Experimentrix system, and there were no restrictions on who could sign-up for the sessions (e.g., gender, age, race, etc.). Each experimental session involved a single participant, and was conducted by one of the two experimenters dedicated to the study (a White male and a White female). The procedures in this study took approximately 30 minutes to complete, and participants received 0.5 research credits for their participation.

Materials

Materialism Measures

1. The Aspirations Index

The full version of the Aspirations Index (Kasser & Ryan, 1996) contains seven categories of life goals, each of which is represented by five individual goals. The categories of goals include extrinsic aspirations such as wealth, fame, and image, and intrinsic aspirations such

as personal growth, relationships, and community involvement. An additional goal, related to physical health, is included in the full version of the Index, though researchers often have omitted this goal in their analyses. For each of the 35 individual goals contained in the complete Aspirations Index, participants are asked to answer three questions, related to: 1) the importance of the goal, 2) participants' beliefs about the likelihood of attaining the goal, and 3) the extent to which the goal has already been attained. Responses are routinely totaled for each of the value groups, resulting in two additional subscales for extrinsic values (wealth, fame, image) and intrinsic values (growth, relatedness, community involvement).

The present study modified the Aspirations Index by, first, excluding the goals related to physical fitness. This reduced the measure to six sets of goals (for a total of 30 individual goals), which could be categorized as generally extrinsic or intrinsic in nature. Similar, reduced versions of the Aspirations Index have been utilized previously and have produced results consistent with earlier work involving the complete Index (e.g., Sheldon, Sheldon, & Osbaldiston, 2000; Sheldon & McGregor, 2000). Second, the questions concerning the likelihood of attaining the goal and the extent to which it has been attained were excluded, leaving only the question of the importance of each goal. This was due to the current study's emphasis on the present, relative importance of materialistic and nonmaterialistic goals. And finally, all items utilized a five-point Likert-scale, rather the seven-point scale of the original Index. This allowed for standardization with other materialism measures included in this study. A copy of the modified Aspirations Index is included in Appendix A.

2. The Belk Materialism Scale

Belk's (1984) materialism scale measures materialism as a set of personality traits, and consists of 24 items, representing three subscales for possessiveness (nine items), nongenerosity

(seven items), and envy (eight items). Participants state their level of agreement with each statement on a five point Likert-scale, and some items are reversed scored to guard against the effects of a unidirectional measure. The Belk materialism scale was included here as an alternative measure of materialism, and a copy of the measure is included in Appendix B.

3. The Richins and Dawson Materialism Scale

The Richins & Dawson (1992) materialism scale assesses materialism as a personal value orientation. It consists of 18 items, representing three subscales for how much people think possessions reflect success in life (*success*; six items), how central materialism is to their lives (*centrality*; seven items), and how happy they believe that material wealth and possessions will make them (*happiness*; five items). Participants state their level of agreement with each statement on a five point Likert-scale, and some items are reversed scored to guard against the effects of a unidirectional measure. The Richins and Dawson Belk materialism scale was included to allow for an alternative measure of materialism, and a copy of the measure is included in Appendix C.

4. Abramson and Inglehart's World Values Survey

Abramson and Inglehart (1995) have utilized a set of twelve sociopolitical values to measure values related to materialism. Seven items reflect materialistic concerns such as “maintaining a high level of economic growth,” while five items reflect nonmaterialistic, or “postmaterialistic” values, such as “protecting free speech.” In the typical procedure, participants are given three successive sets of four values and asked to choose the two values most important to them from each set. In a modification of this procedure, participants in this study were asked to state their endorsement of each value on a five-point Likert-scale. This was in order to allow for standardization with the other materialism measures contained in the present study. The

Abramson and Inglehart measure was included as another alternative measure of materialism, and a copy of the modified World Values Survey is included in Appendix D.

Other Materials

1. Attachment Styles Questionnaire

Hazan and Shaver (1987) developed a set of descriptions for attachment styles (representing secure, avoidant, and ambivalent styles), from which participants would select the description that they felt best fit themselves. Mikulincer, et al. (1990) later decomposed these statements into five components each, allowing for more subtlety in the classification process. A copy of Mikulincer, et al.'s (1990) modification of this attachment measure is included in Appendix E, and was included in this study in order to guard against the possibility that any potential effects of the priming procedure might be attributable to participants' preexisting attachment styles.

2. Dangerous and Threatening Social World View Scale

Adapting items from Altemeyer (1988), Duckitt, et al. (2002) have developed a scale designed to measure the extent to which individuals endorse the view that the social world is a dangerous, hostile, and threatening place. Participants state their level of agreement with each statement on a five point Likert-scale, and some items are reversed scored to guard against the effects of a unidirectional measure. A copy of this measure is included in Appendix F, and was included in this study to assess whether the potential effects of the priming procedure might be mediated by participants' views of the social world as dangerous and threatening, rather than secure and stable.

3. *Competitive Jungle Social World View*

Adapting items from Altemeyer (1998), Duckitt, et al. (2002) have developed a scale designed to measure the extent to which individuals endorse the view that the social world is essentially competitive, rather than cooperative. Participants state their level of agreement with each statement on a five point Likert-scale, and some items are reverse scored to guard against the effects of a unidirectional measure. A copy of this measure is included in Appendix G, and was included in this study to assess whether the potential effects of the priming procedure might be mediated by participants' views of the social world in competitive, "might as right" terms, rather than a cooperative, sharing-based social formulation.

Procedures

Upon arrival to the lab, participants were asked to read and sign an informed consent form. Then, all participants were asked to complete a questionnaire packet, consisting of:

- 1) a modified version of the Aspirations Index,
- 2) the Belk's materialism scale,
- 3) the Richins and Dawson's materialism scale,
- 4) a modified version of the World Values Survey,
- 5) the attachment styles questionnaire,
- 6) the Dangerous and Threatening Social World View questionnaire, and
- 7) the Competitive Jungle Social World View questionnaire.

These measures were used to provide baseline measurements of participants' relative endorsements of a range of materialistic and nonmaterialistic values prior to priming of the

secure base attachment. The measures also provided baseline assessments of participants' attachment styles and social worldviews.

Upon completion of the questionnaire packet, participants were assigned via ABBA counterbalancing to one of two groups, who were asked to recall and write about either: 1) an instance in which a problem that could not be solved alone was resolved through the aid of available and supportive others (secure base condition), or 2) an instance of brushing their teeth (neutral condition). This priming procedure was adapted from Mikulincer, et al. (2003, Study 1), and full instructions for the conditions in this procedure are included in Appendix H.

Upon completion of the recall and writing task, participants were told that the final portion of the session would consist of a new procedure that the experimenters were assessing for possible conclusion in future studies. In fact, the procedure was employed to assess any possible shifts in their endorsements of various values from the time of completing the initial questionnaire packet. This slightly deceptive cover story was employed to avoid communicating the true purpose of the task, which was to assess any *change* in expressed values as a result of the priming procedures, and to avoid potential guessing by participants as to the relation of the task to the values questionnaires given earlier in the session.

The task employed to assess participants' endorsement of values after the priming procedures was an alternative form of values assessment based upon the logic of the Aspirations Index, but employing a more experiential approach. Specifically, using a self-designed method developed in previous research on values that I have conducted, and described in Martin, Campbell, and Henry (2004), participants were asked to assign 100 poker chips to cards bearing the labels and descriptions of the values of wealth, fame, image, personal growth, relationships, and community involvement. The first three reflect the core extrinsic/materialistic values of the

Aspirations Index, while the latter three reflect its core intrinsic/nonmaterialistic values. (A copy of the descriptions for each of the values is included in Appendix I.)

After placing the six cards in front of participants, they were asked to place varying amounts of the chips on each of the values until all chips had been allotted, and the resulting proportions on each value (relative to all other values) were deemed by participants to be representative of their value structures. This procedure allowed for an approximation of the Aspirations Index, while also avoiding the potentially taxing repetition of the Index within such a short span of time.

Once participants had completed the “chips” task, they were debriefed as to the study’s broader rationale, they were awarded their participation credits, and they were thanked for their time and participation. Once participants had left the lab, experimenters recorded the number of chips allotted to each of the values as the study’s outcome measures.

Results

Before proceeding to the main analyses, it was necessary to compute a number of subscales from the measures contained in the initial questionnaire packet. After reverse scoring appropriate items, subscales were computed by taking the mean scores of all items reflecting each construct component. All resulting subscale scores reflected a range of one to five consistent with the Likert-type scaling of the original questionnaire items.

For the Aspirations Index, a total of eight subscales were computed, six for the individual values of *appearance*, *popularity*, *wealth*, *community*, *growth*, and *relationships*, and two additional subscales for total *extrinsic* values (averaged across all appearance, popularity, and wealth items) and total *intrinsic* values (averaged across all community, growth, and

relationships items). Three subscales were computed for the Belk materialism scale, reflecting the components of *possessiveness*, *nongenerosity*, and *envy*. For the Richins and Dawson materialism scale, three subscales were computed for *success*, *happiness*, and *centrality*. For the final materialism measure included in this study, the World Values Survey, two subscales were computed for *materialism* and *postmaterialism*.

Additional subscales were computed for the attachment and social worldviews questionnaires utilized in the study. For the attachment questionnaire, subscales were computed for *security*, *avoidance*, and *ambivalence*, and single scores were computed to reflect the *dangerous and threatening* and *competitive jungle* social worldviews. In sum, a total of 21 subscales were calculated for inclusion in the analyses as potential predictors of effects observed on the outcome task (the “chips” task).

Statistical analysis began by assessing the outcome measures on the “chips” task as criterion variables in a series of regression models. There were eight total outcome measures, consisting of the number of chips participants invested in each of the individual values of *appearance*, *popularity*, *wealth*, *community*, *growth*, and *relationships*, as well as the number of chips they invested in these values collapsed into *extrinsic* (appearance, popularity, and wealth) and *intrinsic* (community, growth, and relationships) subscales. Of these, the key outcome variables of theoretical interest were the extrinsic and intrinsic subscales.

Regression models were assessed in which each of the eight outcome measures was regressed sequentially on: 1) priming condition (security or neutral recall), for the effect of the experimental intervention without inclusion of any additional factors, 2) priming condition plus each of the individual measures subscales computed from the questionnaire packet (one subscale per model), for the main effects of each, and 3) the full regression model containing priming

condition, each individual measure, and the interaction terms computed from participants' priming conditions and each of the individual differences subscales (with separate analyses for each subscale). For all analyses, the predictors were zero centered.

Outcome Extrinsic Value Ratings

I began by analyzing the effects of secure priming on participants' overall endorsement of extrinsic values (i.e., number of chips invested in appearance, popularity, and wealth). The purpose of this analysis was to see if my data would conceptually replicate and extend the patterns obtained by Mikulincer, et al. (e.g., 2001, 2003). Namely, would secure priming reduce commitment to extrinsic goals? Across most of the analyses, it did not.

Considered in isolation from other potential factors, priming condition alone proved to be a nonsignificant predictor of participants' extrinsic value endorsements on the chips task, $\beta = .01$, $t(61) = .10$, $p = .91$. Decomposing this outcome measure into the individual values, priming condition alone proved to be a nonsignificant predictor of participants' outcome endorsements of appearance, $\beta = -.07$, $t(61) = -.54$, $p = .59$, popularity, $\beta = .10$, $t(61) = .76$, $p = .45$, and wealth, $\beta = .01$, $t(61) = .07$, $p = .95$. In other words, there was no overall effect of security priming on participants' endorsement of extrinsic goals.

The general hypothesis, however, was that priming a secure relationship would reduce endorsement of materialistic values in interaction with participants' initial levels of materialism. The analyses offered some support for this hypothesis, although it rarely did so in an unequivocal way. For example, the only materialism scale that interacted significantly with secure priming was the happiness subscale of the Richins and Dawson measure, $\beta = .36$, $t(59) = 2.31$, $p = .03$. Recall that this subscale measures the extent to which participants believe that attaining material possessions would make them happy.

To investigate the precise nature of this interaction, predicted values on the extrinsic outcome measure were calculated for participants at one standard deviation above and below the grand mean for all participants on the happiness subscale. These values revealed that for participants who tended not to believe that the attainment of material possessions would make them happy, secure priming resulted in lower endorsement of extrinsic values (Predicted Value = 17.85) relative to neutral priming (Predicted Value = 23.33). This reduction was consistent with expectations, but was not statistically significant, $\beta = -.17$, $t(59) = -1.18$, $p = .24$. Conversely, participants who tended to believe that the attainment of material possession would make them happy displayed greater investment in extrinsic goals following the secure prime (Predicted Value = 44.47) than the neutral prime (Predicted Value = 34.80). This increase was statistically significant, $\beta = .30$, $t(59) = 2.14$, $p = .04$, and ran contrary to the study's hypothesis. The predicted values from these analyses are plotted in Figure 1.

Because the measure of extrinsic goals was composed of the individual ratings of appearance, popularity, and wealth, additional analyses explored the combined effects of priming and the materialism/happiness belief on each of these values independently. These individual analyses suggested that the previously described interaction was due largely to a significant difference in participants' endorsements of popularity, $\beta = .39$, $t(59) = 2.19$, $p = .03$. Priming condition alone was a marginally significant predictor of endorsements of wealth, $\beta = .27$, $t(59) = 1.68$, $p = .10$, but a nonsignificant predictor of endorsements of appearance, $\beta = .26$, $t(59) = 1.49$, $p = .14$.

In short, the security prime decreased endorsement of the value of popularity for participants who tend not to believe that attainment of materialistic goals would lead to happiness, though to a nonsignificant degree. The security prime also increased endorsement of

popularity among participants who do tend to believe that attainment of materialistic goals would make them happy. This statistically significant finding was unexpected and ran contrary to the security priming hypothesis.

Outcome Intrinsic Value Ratings

Mirroring the above finding on the extrinsic values, priming condition alone proved to be a nonsignificant predictor of participants' intrinsic value endorsements on the outcome task, $\beta = -.02$, $t(61) = -.12$, $p = .91$. Decomposing the intrinsic measure into its individual values, priming condition alone was a nonsignificant predictor of participants' outcome endorsements of community, $\beta = .19$, $t(61) = 1.53$, $p = .13$, growth, $\beta = -.20$, $t(61) = -1.56$, $p = .13$, and relationships, $\beta = -.11$, $t(61) = -.84$, $p = .41$.

Again mirroring the earlier results, the only materialism subscale that interacted significantly with secure priming was the happiness subscale of the Richins and Dawson inventory, $\beta = -.35$, $t(59) = -2.26$, $p = .03$. Calculating and plotting predicted values one standard deviation above and below the mean happiness score for all participants revealed that for participants low on the materialism/happiness beliefs, secure priming increased their endorsement of intrinsic values (Predicted Value = 82.15) relative to neutral priming (Predicted Value = 76.89). This increase was nonsignificant, however, $\beta = .16$, $t(59) = 1.13$, $p = .26$. For participants high in their materialism/happiness beliefs, the security prime decreased their endorsement of intrinsic values (Predicted Value = 55.53) relative to the neutral prime (Predicted Value = 65.15). This finding was statistically significant, $\beta = -.29$, $t(59) = -2.12$, $p = .04$, and ran contrary to the study's hypothesis. The predicted values for these analyses are plotted in Figure 2.

Because the outcome intrinsic subscale was composed of the individual ratings of community, growth, and relationships, additional analyses explored the effects of priming and materialism/happiness beliefs on each of these values independently. These analyses suggested that the previously described interaction was due largely to differences in the participants' endorsement of community goals, $\beta = -.38$, $t(59) = -2.29$, $p = .03$. There was a marginal effect for the relationships goal, $\beta = -.35$, $t(59) = -1.82$, $p = .07$, but no effect for the growth goal, $\beta = .04$, $t(59) = .24$, $p = .82$.

In short, a security prime increased the endorsement of the value of community among participants who tend not to believe that the attainment of materialistic goals would make them happy, though this increase was nonsignificant. The security prime also decreased endorsement of the community value among participants who do tend to believe that attainment of materialistic goals would make them happy. The latter, significant finding was unexpected and ran contrary to the security priming hypothesis.

Mediating Effects

Although the findings for participants low on the materialism/happiness subscale were generally in the direction predicted by the study's hypothesis, the differences also tended to be nonsignificant. The effects of the security prime on participants high on this subscale, however, were unexpected and ran counter to the study's prediction. In order to determine if these unexpected effects might have been attributable to participants' relationship styles or their social worldviews, I conducted mediation analyses for the secure, avoidant, and ambivalent subscales of the relationships questionnaire, as well as for the dangerous and threatening worldview and competitive jungle worldview.

In order to test for a potential mediating role of competitive social worldview on the findings for the extrinsic values, the extrinsic subscale was regressed on the priming by happiness ratings interaction model (which also included priming condition and happiness ratings as main effects), resulting in a finding of $\beta = .36$, $t(59) = 2.31$, $p = .03$. Next, I considered the priming by happiness interaction and participants' competitive worldview ratings as simultaneous predictors of extrinsic subscales. The effect of competitive worldview was highly significant, $\beta = .52$, $t(58) = 4.62$, $p < .01$, while the effect of priming by happiness was reduced to nonsignificance, $\beta = .05$, $t(58) = .35$, $p = .73$. The significance of the mediation of competitive worldview was confirmed by a Sobel test, $z = 2.94$, $p < .01$.

Participants' materialism/happiness beliefs were positively correlated with their endorsements of the competitive worldview, $r = .53$, $p < .01$. In other words, individuals who were high in materialism were more likely than those low on materialism to believe that it is a "dog eat dog" world in which winning is the primary goal. When differences in this belief are statistically removed, the combined effects of security priming and the materialism/happiness belief are reduced.

Additional testing revealed no significant mediation effects for the dangerous and threatening worldview for participants' extrinsic or intrinsic subscales. There were also no effects obtained for the secure, avoidant, or ambivalent subscales of the relationships questionnaire. Only competitive worldview proved to play a significant mediating role in the obtained results. Thus, the observed effects appeared to be driven primarily by the extent to which participants endorsed a basically competitive worldview.

Additional Findings

The results just reported were the most theoretically relevant ones. In the course of performing analyses on the various combinations of individual difference measures and dependent measures, a small number of less interesting but significant effects emerged. The most interesting of these was that priming emerged as a significant predictor of participants' outcome endorsements of the value of community in the model containing participants' scores on the competitive worldview scale, $\beta = .24$, $t(60) = 2.42$, $p = .02$. Thus, secure relational priming successfully promoted the value of community when the extent to which participants endorse a basically competitive worldview was controlled for. This finding is consistent with the study's hypothesis.

Discussion

Based on research suggesting links among insecurity, materialism, and relational attachment, I hypothesized that priming relational security could reduce participants' materialism. More precisely, I predicted that secure priming would reduce participants' commitment to extrinsic goals (and, by extension, also increase their commitment to intrinsic goals), and that it would do so in interaction with the level of materialism. The data generally did not support this prediction. Several of the findings frankly were unexpected, and require additional examination.

Consider, first of all, that the priming procedure interacted with materialism only as it was manifested in participants' beliefs that materialistic pursuits and acquisitions would lead to happiness (as assessed by the happiness subscale of the Richins and Dawson measure). This result fits with the suggestion that materialism is a multi-dimensional construct and that different

measures of materialism assess different aspects of this construct. But why was the materialism/happiness belief the only dimension that interacted with security priming in Study 1? It may be that this measure was the one most relevant to the outcome task.

In the chips task, participants were asked to place chips on cards representing various goals and to do so in proportion to their commitment to those goals. In other words, the chips task may reflect the participants' beliefs regarding the consequences of pursuing certain goals. Individuals may pursue popularity, for example, because they believe that doing so will lead to happiness. This, in turn, would be related to the participants' belief that certain types of goals (e.g., popularity) would make them happy. In other words, the outcome measure may reflect most closely the materialism/happiness component of materialism. Of course, this interpretation is speculative and additional data would be needed to support the interpretation. It seems generally safe to conclude, though, that different components of materialism are likely to influence performance on different tasks.

Additionally, while the priming procedure generally worked as predicted for participants low in the belief that materialism brings happiness, the obtained difference usually were not statistically significant. The secure priming procedure also had the unexpected effect of significantly *increasing* endorsement of the extrinsic values for participants who were high on the materialism/happiness belief. I propose three possible explanations for this unexpected finding.

First, following the work of Mikulincer, et al. (e.g., 2001, 2003), I had assumed that secure priming would reduce materialism by reducing insecurity. Given the increase among those high on the happiness belief component of materialism, it is possible that secure priming exerts its effects through a different means. Perhaps its main effect was to disinhibit participants,

such that they felt emboldened to pursue their initially stated values with increased vigor. Thus, those high on the materialism/happiness belief became more committed to extrinsic goals, whereas those low on that belief became (somewhat) more committed to intrinsic goals. Although the results of Study 1 generally are consistent with this hypothesis, the data do not allow for a check of this alternate explanation.

A second potential explanation might be that the outcome measure was unreliable. More precisely, the chips task is patterned after the Aspirations Index, which is composed of goals that are assumed to reflect intrinsic and extrinsic values. The relation between the values and the goals may not be universal, however. For example, while wealth, appearance, and popularity are treated as extrinsic goals in general, it might be that for some participants, these actually represent freely-chosen intrinsic strivings (see Carver & Baird, 1998). Thus, the secure prime might have had the intended effect of decreasing extrinsic pursuits and increasing intrinsic pursuits, but as these were defined *by participants*, rather than by the AI's (possibly arbitrary) categorization scheme. The materials used in Study 1, however, did not assess participants' *reasons* for endorsing various goals and values. Thus, it is not possible to assess this alternate explanation for the current study.

A third possibility, and one that is testable given the results of Study 1, is that the prime had different effects for different participants. More specifically, some participants may have recalled an instance from their lives that truly exemplified a secure attachment, and as a result felt more secure. Others, however, may have had difficulty recalling a time when someone was truly supportive. This might have led them to experience even greater *insecurity*, leading in turn to an increased need to compensate through materialism.

To investigate this possibility, I returned to participants' written responses to the priming instructions, in order to assess the extent to which they truly exemplified secure interpersonal attachment. This revealed that participants gave a large range of responses, from stories that recounted deep personal bondings around difficult life events (e.g., others helping one through the loss of a loved one, or to cope with a sexual assault) to stories that told of receiving momentary aid in a difficult predicament, but without any resulting sense of secure attachment (e.g., being bailed out of jail by an angry and disappointed sibling). Thus, it might be possible that the more these responses reflected secure attachment, the more likely it would be that the priming procedure would reduce participants' commitment to extrinsic goals.

I then coded participants' written responses to the priming instructions in terms of the extent to which they reflected secure interpersonal attachment. One other rater and I read the life events described by each participant who received the security prime. We utilized a one to five Likert-type scale, and were blind to the participants' levels of materialism. Upon completion of the ratings, I was able to verify that we had achieved a high degree of interrater reliability, $r = .82$. So, our ratings were averaged to arrive at a single variable reflecting participants' success in recalling an instance exemplifying secure interpersonal attachment.

I next correlated our success of recall variable with the materialism/happiness belief, revealing a negative, but nonsignificant correlation, $r = -.21$, $p = .25$. This suggested that participants who were high on the materialism/happiness belief tended to have some difficulty in recalling an instance of secure attachment, though this tendency was statistically nonsignificant.

Visual inspection of a scatterplot, however, revealed a participant who appeared extreme on both variables. This scorer was 1.94 standard deviations from the sample mean on the materialism/happiness belief, and 1.56 standard deviations from the sample mean on our success

of recall variable. Taking the z -scores of a newly computed variable based upon the average of these two variables revealed this scorer to be 3.18 standard deviations from the sample mean, when both variables were considered simultaneously. (No other scorer was more than 1.78 standard deviations from the sample mean on this combined measure.) After removing this single extreme scorer, the correlation between participants' success of recall and their endorsements of the materialism/happiness belief increased considerably, $r = -.40$, $p = .03$. Thus, analysis proceeded without further consideration of this participant.

The significant negative correlation between participants' success of recall and their endorsements of the materialism/happiness belief (after removal of the extreme scorer) suggests that participants high on the materialism/happiness belief tended to write stories that reflected less emotional and social support. This finding lent support to the notion that these participants might have had greater difficulty in recalling instances that exemplified secure attachment, and that this in turn could have led to increased feelings of insecurity. This might then account for the reversal in the effects of priming on their endorsement of extrinsic goals.

To test this notion further, I conducted regression analyses in which participants' extrinsic and intrinsic outcomes were regressed sequentially on: 1) participants' materialism/happiness ratings and our ratings of participants' success in recalling and recounting an instance of secure attachment, and 2) materialism/happiness ratings, success of recall ratings, and the interaction term computed from materialism/happiness ratings and success of recall ratings. All predictors were zero centered.

For participants' extrinsic outcomes, analysis revealed a significant main effect for materialism/happiness, $\beta = .58$, $t(28) = 3.85$, $p < .01$, such that participants higher on this belief tended to endorse extrinsic values more. The main effect for success of recall was nonsignificant,

$\beta = -.18$, $t(28) = -1.21$, $p = .24$. These results were qualified, however, by a significant materialism/happiness by success of recall interaction, $\beta = -.48$, $t(27) = -3.96$, $p < .01$.

Calculating predicted values on the extrinsic outcome measure at one standard deviation above and below the overall mean for the happiness subscale revealed that this interaction was driven primarily by participants who had difficulty in recalling an instance of secure relational attachment. Among such participants, those who were higher on the materialism/success belief placed dramatically more chips on the extrinsic values (Predicted Value = 52.41) than did such participants who were lower on the materialism/success belief (Predicted Value = 9.13). This difference was highly significant, $\beta = 1.15$, $t(27) = 6.11$, $p < .01$. Participants who were more successful in recalling an instance of secure relational attachment showed a far less dramatic difference between levels of the materialism/success belief (Predicted Value for Low Materialism/Success Belief = 17.23; Predicted Value for High Materialism/Success Belief = 23.25), a difference that was nonsignificant, $\beta = .16$, $t(27) = .98$, $p = .34$. The predicted values for these analyses are plotted in Figure 3.

For participants' intrinsic outcomes, a complementary pattern emerged to that outlined above with the extrinsic value endorsements. There was a significant main effect for materialism/happiness, $\beta = -.58$, $t(28) = -3.85$, $p < .01$, such that those high on this belief tended to endorsement intrinsic values less than those low on the belief. The effect of success of recall was nonsignificant, $\beta = .18$, $t(28) = 1.21$, $p = .24$. These findings were qualified by a significant materialism/happiness by success of recall interaction, $\beta = .48$, $t(25) = 3.96$, $p < .01$.

Predicted values suggested that this interaction also was driven primarily by participants who were unsuccessful in recalling an instance of secure relational attachment. Among such participants, those who were lower on the materialism/success belief placed far more chips on

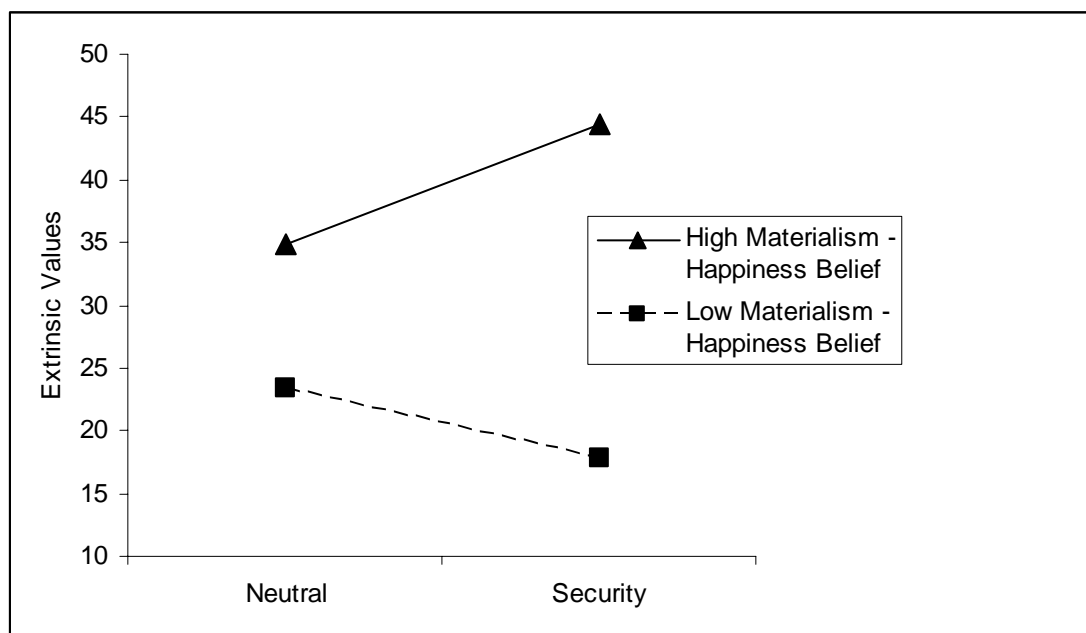
the intrinsic values (Predicted Value = 90.87) than did such participants who were higher on the materialism/success belief (Predicted Value = 47.59). This difference was highly significant, $\beta = -1.15$, $t(27) = -6.11$, $p < .01$. Conversely, participants who were more successful in recalling an instance of secure relational attachment showed a much smaller difference between differences on the materialism/success belief (Predicted Value for Low Materialism/Success Belief = 82.77; Predicted Value for High Materialism/Success Belief = 76.75). This difference was nonsignificant, $\beta = -.16$, $t(27) = -.98$, $p = .34$.

Thus, when the additional factor of participants' success in recalling an instance of secure attachment is taken into account, an explanation for the study's initially unexpected results is generated. Specifically, the unexpected finding that the secure prime appeared to increase materialism for those high on the materialism/happiness belief appears to be due to the fact that these participants found it very difficult to generate a meaningful example of secure attachment. In light of this difficulty, participants may have experienced increased insecurity, and sought to address this insecurity through increased materialism.

Given the findings of previous research on the link between materialism and insecurity (e.g., Chang & Arkin, 2002; Kasser & Sheldon, 2000), this explanation appears plausible. Thus, for participants for whom the priming task truly primed relational security, consistent results were obtained in the expected directions. These participants decreased their commitment to extrinsic values and increased their commitment to intrinsic values. For those participants for whom the priming task may have primed relational insecurity, however, results opposite to those initially predicted were obtained. These participants increased their commitment to extrinsic values, and decreased their commitments to intrinsic values. Yet both patterns make sense within the larger underlying argument that one of materialism's root causes may be relational insecurity,

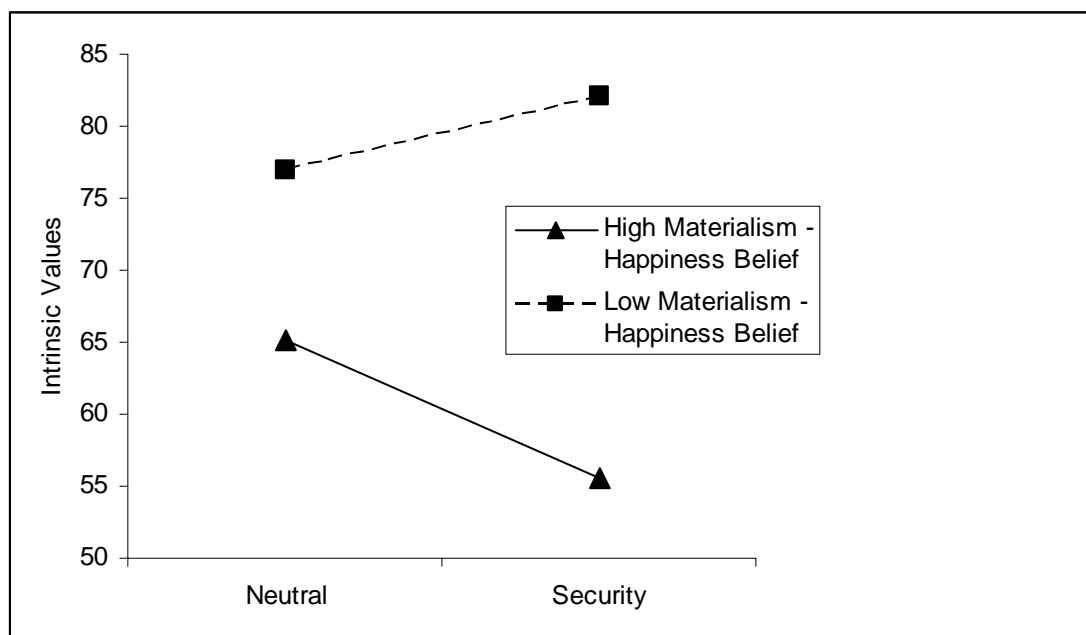
while one of its potential remedies may be increasing relational security. Thus, the study generated considerable support for the first component of this argument (that relational insecurity increases materialism), while generating more limited support for the second component (that relational security can decrease materialism).

FIGURE 1



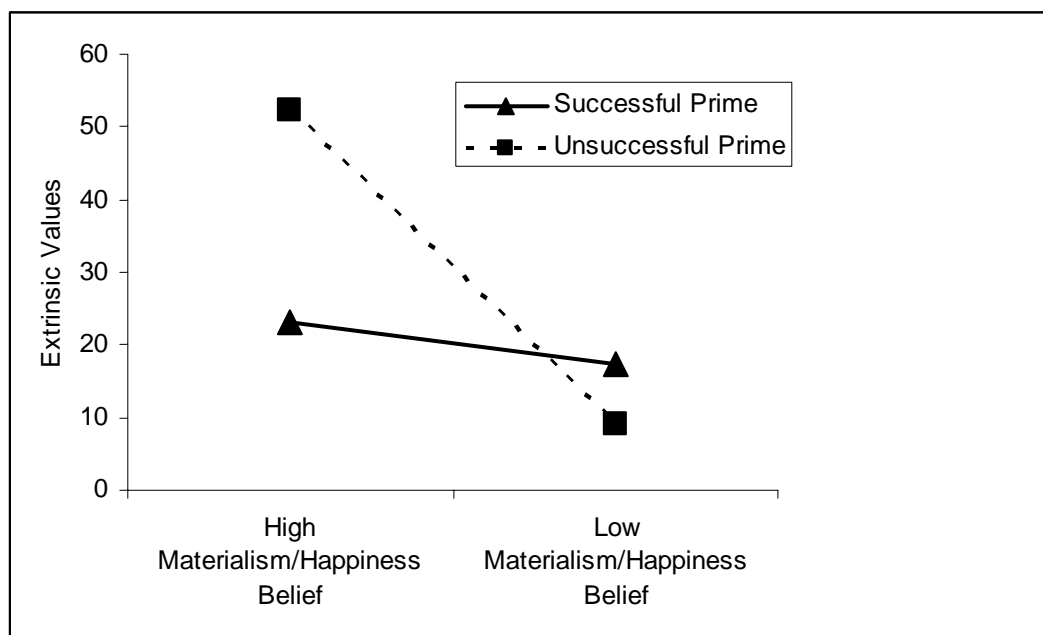
Interaction of Priming Condition by Materialism/Happiness Belief
on Outcome Extrinsic Value Ratings

FIGURE 2



Interaction of Priming Condition by Materialism/Happiness Belief
on Outcome Intrinsic Value Ratings

FIGURE 3



Interaction of Materialism/Happiness Belief by Success of Security Priming
on Outcome Extrinsic Value Ratings

CHAPTER 6

STUDY 2: SECURE RELATIONAL SCHEMAS AND MATERIALISTIC BEHAVIORS

That attitudes and behaviors are often discrepant is a classic idea in social psychology (e.g., La Pierre, 1934; Wicker, 1969). Though values are not synonymous with attitudes, it was important to assess whether the value shifts predicted in Study 1 would be accompanied by corresponding shifts in behavior. Additionally, as Fishbein and Ajzen (1975) have argued, *levels of specificity* must correspond between intentions and behaviors. Thus, a global measure of value endorsements, such that assessed in Study 1, might not predict how much materialistic behavior an individual actually will exhibit in a specific context. Because of significant differences in levels of specificity, Study 2 went beyond a simple behavioral replication of Study 1, and turned the focus from global value endorsements to specific, explicit behaviors. Specifically, Study 2 examined whether the salience of secure base attachments could lead to lower levels of competitive behaviors (and correspondingly higher levels of cooperative behaviors) among highly materialistic individuals participating in a resource dilemma game.

Study 2 began with an initial assessment of participants' endorsement of materialistic values. Then, participants received either the secure base or neutral primes detailed in Study 1. And finally, the materialistic behaviors of participants were assessed through a resource dilemma game, modeled on the "tragedy of the commons" phenomena (Hardin, 1968).

In Hardin's (1968) original formulation, the tragedy of the commons occurs when individuals utilize a common and self-replenishing public resource, such as the water supply, common grazing fields, or other natural resources. Often, some individuals choose to maximize

their own self-interest by utilizing large amounts of this resource. When others perceive this, they often begin to take more of the resource themselves, leading ultimately to the “tragedy” itself: an overall rate of depletion that outstrips the resource’s ability to replenish itself. Thus, what begins as a rational maximization of individual self-interest often eventuates in a tragedy for the community as a whole over the long-term.

This conceptualization is relevant to the present study on materialism for (at least) three important reasons. First, it is reasonable to assume that highly materialistic individuals may be more likely to exploit a commons situation, and less likely to temper their rates of acquisition in the face of a dwindling resource. Second, consistent with the present discussion’s linking of materialism and extrinsic value orientations, Sheldon and McGregor (2000) found that extrinsically oriented individuals tend to take more resources than intrinsically oriented individuals in a commons scenario. This finding further establishes the link between extrinsic values and materialism by offering a demonstration of materialistic (i.e., acquisition-oriented) behavior among extrinsically oriented individuals.

And third, the tragedy of the commons model offers opportunities to explore both the individual costs of materialism (e.g., the long-term negative consequences of chasing after short-term boosts through acquisition), as well as its costs to others dependent upon limited natural resources, and to the long-term health of the global environment more generally. Such a procedure, if successful in the present context of attempting to lower the frequency and intensity of materialistic behaviors, could prove to have use in a wide range of areas including, but specifically limited to, individual well-being.

Consistent with the present discussion’s focus on the role of insecurity in materialistic behavior, Study 2’s primary predication was that, after controlling for participants’ baseline

endorsement of materialistic values, priming condition would significantly predict participants' acquisitive behavior in a resource dilemma game. Specifically, it was predicted that participants who were primed with secure relational schemas would display significantly less competitive (i.e., materialistic) behaviors, and significantly more cooperative (i.e., nonmaterialistic) behaviors, than participants receiving the neutral prime.

Method

Participants

Participants consisted of 153 undergraduates at the University of Georgia who participated in exchange for partial fulfillment of course requirements. Participants consisted of 72 males and 81 females, with an overall average age of 19.52 years ($SD = 1.68$). Race of participants (based upon participants' self-reports) was broken down as follows: 127 White Americans, 15 African-Americans, 6 Asian Americans, and 5 participants who selected "Other."

Notice of openings for a study on social games was posted to the Experimetrix system, and the only restriction on who could sign-up for the sessions was that participants could not have participated in Study 1. This was because debriefing from Study 1 made clear the rationale for both of the studies presented here, and therefore would have created confounds related to participant knowledge for Study 2. Each experimental session involved from two to four participants, and was conducted by one of the three experimenters dedicated to the study (a White male and two White females). The procedures in this study took approximately one hour to complete, and participants received one research credit for their participation.

Materials and Procedures

Sessions were scheduled such that participants arrived to the lab in groups of four, although the study's design could also accommodate groups of two or three. Upon arrival to the lab, participants were asked to read and sign an informed consent form. Then, all participants were asked to fill out the same questionnaire packet utilized in Study 1, consisting of:

- 1) a modified version of the Aspirations Index,
- 2) the Belk's materialism scale,
- 3) the Richins and Dawson's materialism scale,
- 4) a modified version of the World Values Survey,
- 5) the attachment styles questionnaire,
- 6) the Dangerous and Threatening Social World View questionnaire, and
- 7) the Competitive Jungle Social World View questionnaire.

These measures were used to provide baseline measurements of participants' relative endorsements of a range of materialistic and nonmaterialistic values prior to priming of the secure base attachment. The measures also provided baseline measurements of participants' attachment styles and social worldviews.

Utilizing an ABBA counterbalancing scheme, all participants of groups reporting to the same experimental session received either the secure base prime (A) or neutral control prime (B). The priming procedures were adapted from Mikulincer, et al. (2003, Study 1), and were the same as described in the previous chapter. Specifically, participants were asked to recall and write about either: 1) an instance in which a problem that could not be solved alone was resolved through the aid of available and supportive others (secure base condition), or 2) brushing their teeth (neutral condition).

Upon completion of the priming procedures, participants were asked to participate in a second, presumably unrelated task. This task was a social dilemma game, modeled on the well-known “tragedy of the commons” problem (Hardin, 1968), and modified from Sheldon and McGregor’s (2000) study of extrinsically motivated individuals in the commons dilemma. Specifically, the study offered a situation in which participants were asked to imagine that they harvest timber for their livelihood, that they are being given access to a large national forest, and that they will be given the opportunity to buy from 0 to 10 acres per year from this forest for harvesting purposes.

Participants were told that, in addition to themselves, one of the other participants also would be harvesting the same forest, although they were not told whom, in order to minimize communication or negotiation between participants. They were told that after each round, their bids and the bids of the other participant would be calculated by the experimenter, who would also add back a 10% “replenishment” of trees before each additional round. And finally, participants were told that the scenario would continue until 25 rounds were completed, or until the forest was completely depleted. Specific instructions for the forest dilemma are included in Appendix J.

In actuality, participants were assigned via an ABBA counterbalancing scheme (based upon seating arrangement in the laboratory) to play the game not with another participant, but with scripted bids that were either highly materialistic in nature (with bids averaging eight acres per round) or relatively low in materialism (with bids averaging three acres per round). The experimenters orchestrated this deception by collecting all participant bid sheets after each round, and then recording the scripted bids based upon participants’ assigned counterbid condition (high or low), rather than the bids of the other actual participants. Bid sheets were then

returned to participants for the subsequent round. Participants' acquisitive, materialistic behaviors were assessed by the amount of their bids (potentially ranging from 0 to 10).

When participants had completed the commons dilemma, they were debriefed as to the study's broader rationale, they received their participation credits, and they were thanked for their time and participation.

Results

Following the methods described in Study 1, subscales were computed for each of the materialism, relationships, and social worldview measures included in the questionnaire packet. In sum, a total of 21 subscales were calculated for inclusion in analyses as potential predictors of the effects observed in the forest management game. Initial analyses revealed a possible experimenter effect, in that one of the experimenters collected data that consistently diverged from the data collected by the other two experimenters. Thus, this experimenter's data was excluded from further consideration and analysis proceeded with a reduced data set of 100 participants.

Analyses were concerned primarily with the effect of the security priming on participants' opening bids. Because this bid was unconfounded by counterbid and the amount of forest left, it may be viewed as a relatively clean measure of the effects of security priming on motivation to engage in materialistic behavior. Three additional outcome measures were assessed in other analyses. These were: 1) participants' average bids across all completed rounds, 2) number of rounds completed for each participant (a measure of how long the hypothetical forest survived in each simulation), and 3) participants' total amount of timber harvested across rounds. The general hypothesis was that priming a secure attachment would reduce materialistic,

acquisitive behavior, and that it might do so differently for individuals high or low on materialism.

Opening Bid

To assess the immediate impact of the priming conditions, statistical analysis began by assessing participants' opening bids as the criterion variable in a series of regression models. Regression models were assessed in which opening bid was regressed sequentially on: 1) priming condition (security or neutral recall), for the effect of the experimental intervention without inclusion of any additional factors, 2) priming condition plus each of the individual measures subscales computed from the questionnaire packet (one subscale per model), for the main effects of each, and 3) the full regression model containing priming condition, each individual measure from the questionnaire packet, and the interaction terms computed from participants' priming conditions and each of the subscales from the questionnaire packet (with separate analyses for each subscale). Predictors were zero centered for all analyses.

Considered in isolation from other potential factors, priming condition alone proved to be a marginally significant predictor of participants' opening bids, $\beta = -.18$, $t(98) = -1.81$, $p = .07$. Participants receiving the security prime tended to place lower opening bids ($M = 5.41$) than did participants receiving the neutral prime ($M = 6.27$). This tendency is consistent with the study's hypothesis. None of the individual difference measures (materialism, relationships styles, and social worldviews) were significant as main effects. Thus, priming appeared to be the single best predictor of participants' opening bids.

In order to assess the conjunction of priming and materialism levels, I began by analyzing the effects of secure priming and the overall extrinsic and intrinsic ratings of the Aspirations Index on participants opening bids. There was a significant interaction between priming and AI

intrinsic scores, $\beta = .39$, $t(96) = 2.48$, $p = .02$, but no significant effect between priming and AI extrinsic scores, $\beta = -.06$, $t(96) = -.37$, $p = .71$.

To investigate the precise nature of the priming by intrinsic interaction, predicted values for participants' opening bids were calculated for participants at one standard deviation above and one standard deviation below the grand mean for all participants on the AI's intrinsic subscale and plotted (see Figure 4). The significance of this interaction appeared to be driven by participants who initially reported low intrinsic values. Specifically, participants low in their endorsement of intrinsic values on the Aspirations Index placed high initial bids in the neutral priming condition (Predicted Value = 7.27), but placed low initial bids in the secure priming condition (Predicted Value = 5.22), a difference that was highly significant, $\beta = -.43$, $t(96) = -3.08$, $p < .01$. The initial bids of participants who highly endorsed intrinsic values on the Aspirations Index fell within these two extremes (Predicted Value for Neutral = 5.28; Predicted Value for Security = 5.60), and did not vary significantly as a result of priming, $\beta = .07$, $t(96) = .48$, $p = .64$. Thus, the security prime appeared to neutralize the tendency of participants low in commitment to intrinsic goals to place high opening bids. These results are consistent with the general security priming hypothesis.

Because the intrinsic subscale of the Aspirations Index reflects the individual values of community, growth, and relationships, it makes sense to analyze each of these values independently. These analyses suggested that the interaction between secure priming and the overall intrinsic score was driven largely by individual differences in commitment to community goals, $\beta = .41$, $t(96) = 2.92$, $p < .01$. The effect of growth goals was marginal, $\beta = .27$, $t(96) = 1.71$, $p = .09$, whereas the effect of relationships goals was non-significant, $\beta = -.06$, $t(96) = -.45$, $p = .65$.

A significant interaction was also obtained in the analysis examining the effects of security priming and postmaterialism ratings on the World Values Survey, $\beta = .37$, $t(96) = 2.72$, $p < .01$. Recall that these ratings reflect nonmaterialistic sociopolitical values such as promoting a humane, tolerant society and protecting freedom of speech. In other words, participants who are lower in postmaterialism are higher in materialism. Calculation and analysis of predicted values revealed a pattern consistent with that reported above for participants' initial reports of intrinsic values. Specifically, participants who were low on postmaterialism placed high initial bids in the neutral condition (Predicted Value = 6.62), but placed low initial bids in the secure prime condition (Predicted Value = 4.50), a difference that was highly significant, $\beta = -.44$, $t(96) = -3.26$, $p < .01$. The bids of participants high on postmaterialism fell within these two extremes (Predicted Value for Neutral = 5.90; Predicted Value for Security = 6.28), and did not vary significantly by priming condition, $\beta = .08$, $t(96) = .58$, $p = .56$. Thus, the security prime worked primarily by neutralizing the tendency of individuals who were low on postmaterialism to place high opening bids.

Given the significant mediating role of competitive worldview of the security prime effects observed in Study 1, I also conducted mediation testing for each of the findings discussed above. Conducting the regression path analyses and Sobel testing methods utilized in Study 1 revealed no significant mediation for competitive worldview on either of the observed interactions. Additionally, no significant mediation was found for dangerous worldview, or the security, avoidance, or ambivalence relationship subscales for any of the interactions. Thus, the observed effects were not mediated by any of the variables measured in this study.

In sum, analyses of the initial bids were generally consistent with predictions. Participants who were low in their commitment to intrinsic or postmaterialistic goals made high

bids unless they had been exposed to a security prime. After such a prime, their bids fell to the level of participants high in their commitment to intrinsic or postmaterialistic goals.

Average Bids

Assessing the impact of the security prime on participants' opening bids provided a measure of the immediate effect of priming. To measure the effect of the prime throughout the duration of the forest management game, I next assessed the effect of priming on participants' average bids across rounds. It was important for the analysis to reflect accurately the effects of the counterbid condition as well as priming condition. So, I computed the average bid by omitting the data from the opening round. After all, the initial bids did not reflect any possible effects of the counterbid, which participants received only *after* placing their opening bids. Thus, an average bid was computed by totaling participants' bids across rounds 2 through 25, and dividing this total by the number of rounds each participant completed (minus 1 for the opening round).

To assess the impact of the priming conditions across rounds, as well as to assess the impact of receiving either a consistently high or consistently low counterbid, I conducted a series of analyses in average bid was regressed sequentially on: 1) priming condition (security or neutral recall) and counterbid condition (high or low), for the main effects of each of these, and 2) priming condition, counterbid condition, and each of the individual measures subscales from the questionnaire packet (one subscale per model), 3) priming condition, counterbid condition, each individual measure, and the three two-way interactions possible between them, for the effects of each two-way interaction, and 4) priming condition, counterbid condition, each individual measure, the three two-way interactions, and the three-way interaction computed from

all of the predictors, for the effect of the three-way interaction of all key terms. For all analyses, the predictors were zero centered.

Analyses of main effects revealed nonsignificant effects for both priming, $\beta = -.07$, $t(97) = -.71$, $p = .48$, and counterbid, $\beta = .14$, $t(97) = 1.36$, $p = .18$. A nonsignificant effect was also observed for the priming by counterbid interaction, $\beta = -.07$, $t(96) = -.39$, $p = .70$. Thus, neither priming nor counterbid by themselves successfully predicted average bids, nor did the combined effects of the two.

In order to assess the conjunction of priming condition, counterbid, and participants' prior materialism levels, I began by analyzing the effects of secure priming and the overall intrinsic and extrinsic scores on the Aspirations Index. These analyses revealed a significant priming interaction for participants' scores on the extrinsic subscale, $\beta = -.31$, $t(93) = -1.88$, $p = .06$, but a nonsignificant priming interaction for participants' scores on the intrinsic subscale, $\beta = .15$, $t(93) = .92$, $p = .36$.

Analyzing the components of the extrinsic score revealed that the interaction was due primarily to differences in the participants' endorsement of wealth, $\beta = -.34$, $t(93) = -2.22$, $p = .03$, and appearance, $\beta = -.32$, $t(93) = -2.03$, $p = .05$. The interaction of priming condition and participants' endorsement of the value of popularity was nonsignificant, $\beta = -.05$, $t(93) = -.28$, $p = .78$.

To investigate further the priming by wealth interaction, predicted values were calculated at one standard deviation above and below the mean for all participants on the wealth subscale of the Aspirations Index. As can be seen, the interaction was driven primarily by participants who were high in their endorsement of wealth as a goal. Specifically, participants who were highly committed to wealth as a goal placed high average bids in the neutral condition (Predicted Value

= 7.31), but placed low average bids in the secure prime condition (Predicted Value = 6.17). This difference was significant, $\beta = -.37$, $t(96) = -2.67$, $p = .01$, and consistent with the hypothesis of the study. The bids of participants low in their commitment to wealth as a goal were generally low and did not differ significantly as a result of security prime (Predicted Value = 6.46) or neutral prime (Predicted Value = 5.87), $\beta = .19$, $t(96) = 1.41$, $p = .16$. The predicted values from these analyses are plotted in Figure 5.

A similar pattern of findings was revealed in the significant interaction between priming and participants' endorsements of appearance as a goal. Participants who were high in their desire to appear attractive to others placed high average bids in the neutral condition (Predicted Value = 6.81), but placed low average bids in the secure prime condition (Predicted Value = 5.95), $\beta = -.28$, $t(96) = -1.94$, $p = .05$. The average bids of participants low in their endorsement of appearance were generally low and did not differ significantly as a function of security (Predicted Value = 6.63) or neutral prime (Predicted Value = 6.20), $\beta = .14$, $t(96) = .95$, $p = .34$. These findings are consistent with the general security priming hypothesis.

Four additional significant interactions continued this pattern of findings in support of the general security priming hypothesis. First, the interaction of priming condition by participants' scores on the possessiveness subscale of the Belk scale was significant, $\beta = -.39$, $t(93) = -2.63$, $p = .01$. Recall that this measure reflects the tendency to maintain tight control over one's material possessions. Participants who were high in possessiveness made high average bids in the neutral condition (Predicted Value = 6.83), but low average bids in the secure prime condition (Predicted Value = 5.84), $\beta = -.32$, $t(96) = -2.28$, $p = .03$. The bids of participants who were low in possessiveness fell between these extremes and did not differ as a function of security prime

(Predicted Value = 6.73) and neutral prime (Predicted Value = 6.19), $\beta = .18$, $t(96) = 1.25$, $p = .21$. These findings are consistent with the general security priming hypothesis.

Second, the interaction of priming condition by participant's scores on the success subscale of the Richins and Dawson materialism scale was also significant, $\beta = -.51$, $t(93) = -3.72$, $p < .01$. Recall that this subscale reflects the extent to which participants believe that success in life is measured by one's material possessions. Participants who were high on the materialism/success belief placed higher average bids in the neutral condition (Predicted Value = 7.24) than in the secure prime condition (Predicted Value = 5.90), $\beta = -.43$, $t(96) = -3.20$, $p < .01$. This finding was consistent with the general security priming hypothesis. Participants who were low on the materialism/success belief, on the other hand, placed average bids that were higher in the security condition (Predicted Value = 6.74) than in the neutral condition (Predicted Value = 5.88), $\beta = .28$, $t(96) = 2.08$, $p = .04$. This finding was unexpected and ran counter to the general security priming hypothesis.

Third, there was a significant interaction of priming condition and participants' scores on the materialism subscale of the World Values Survey, $\beta = -.36$, $t(93) = -2.44$, $p = .02$. Recall that this subscale reflects participants' endorsement of sociopolitical values that are tied to materialistic markers, such as performance of the national economy. Participants who were high on sociopolitical materialism placed higher average bids in the neutral condition (Predicted Value = 7.24) than in the secure prime condition (Predicted Value = 6.33), $\beta = -.29$, $t(96) = -2.14$, $p = .04$. The average bids of participants low on sociopolitical materialism were generally low and did not differ as a function of security prime (Predicted Value = 6.28) and neutral prime (Predicted Value = 5.74), $\beta = .18$, $t(96) = 1.26$, $p = .21$. These findings were consistent with the general security priming hypothesis.

Fourth, there was a significant interaction between priming condition and participants' scores on the postmaterialism subscale of the World Values Survey, $\beta = .30$, $t(93) = 2.18$, $p = .03$. Recall that this subscale reflects participants' endorsements of sociopolitical goals that are tied to nonmaterialistic markers, such as promotion of tolerance and free speech. Thus, low scores on this subscale reflect higher materialism. For this interaction, a pattern emerged that was complementary to the pattern observed above for sociopolitical materialism. Participants low in postmaterialism placed significantly higher average bids in the neutral condition (Predicted Value = 7.23) than in the secure prime condition (Predicted Value = 6.35), $\beta = -.28$, $t(96) = -2.10$, $p = .04$. The average bids of participants high on postmaterialism were generally low and did not differ as a function of security prime (Predicted Value = 6.26) and neutral prime (Predicted Value = 5.77), $\beta = .16$, $t(96) = 1.16$, $p = .25$. These results also were consistent with the general security priming hypothesis.

Finally, I conducted mediation testing for each of the significant effects reported above. Conducting the regression path analyses and Sobel testing methods utilized in Study 1, no significant mediation was found for competitive worldview, dangerous worldview, or the security, avoidance, or ambivalence relationship subscales for any of the interactions. Thus, the observed effects were not mediated by any of the variables measured in this study.

Rounds Completed

Although high bids may allow participants to gain a great deal of the forest in the short run, it may not be the most lucrative strategy in the long run. With high bids, the forest may become depleted leading to lower profits in the long run (Sheldon & McGregor, 2000). If a security prime lowers the average bids participants are making, then it may allow participants to harvest the forest for more rounds.

To address this possibility, I assessed the impact of priming and counterbid on the number of rounds participants completed (a measure of how long the hypothetical forest survived with remaining timber). Specifically, I conducted analyses in which number of rounds completed for each participant was regressed sequentially on: 1) priming condition (security or neutral recall) and counterbid condition (high or low), for the main effects of each of these, 2) priming condition, counterbid condition, and each of the individual measures subscales from the questionnaire packet (one subscale per model), 3) priming condition, counterbid condition, each individual measure, and the three two-way interactions possible between them, for the effects of each two-way interaction, and 4) priming condition, counterbid condition, each individual measure, the three two-way interactions, and the three-way interaction computed from all of the predictors, for the effect of the three-way interaction of all key terms. In all analyses, the predictors were zero centered.

Initial analyses revealed that priming condition alone was a significant predictor of number of rounds completed, $\beta = .24$, $t(97) = 2.63$, $p < .01$. Thus, the forest survived longer for participants in the security priming condition ($M = 23.44$ rounds) than for participants in the neutral condition ($M = 21.93$ rounds). Not surprisingly, counterbid also was a significant predictor of number of rounds completed, $\beta = -.36$, $t(97) = -3.98$, $p < .01$. Thus, the forest survived longer with participants paired with the low counterbid ($M = 24.04$ rounds) than with participants paired with the high counterbid ($M = 21.75$ rounds). Both findings were consistent with the hypothesis of the study, and were not qualified by the priming condition by counterbid interaction, $\beta = .12$, $t(96) = .72$, $p = .47$.

Analyses of the effects of priming, counterbid, and levels of materialism on number of rounds participants completed revealed only marginally significant effects for priming and the

success subscale of the Richins and Dawson scale, $\beta = .24$, $t(93) = 1.87$, $p = .07$, and priming and the community subscale of the Aspirations Index, $\beta = -.23$, $t(93) = -1.69$, $p = .09$. No other interactions involving priming condition were significant, or approached significance, in any of the analyses for number of rounds. Thus, the security prime had an overall main effect on number of rounds completed, and this effect was not qualified significantly by any of the various measures of participants' materialism levels.

Additionally, mediation testing for the significant effect of priming discussed above revealed no significant mediation for competitive worldview, dangerous worldview, or the security, avoidance, or ambivalence relationship subscales. Thus, the observed effect of the security prime was not mediated by any of the variables measured in this study.

Total Harvest

Sheldon and McGregor (2000) found that groups of highly extrinsic participants tended to deplete the forest and thus sabotage their long term harvest, whereas groups of intrinsic participants harvested less each round but ended up harvesting more in the long run because they ensured the survival and longevity of the forest. Would priming and materialism interact to produce related results? To address this question, I regressed participants' total amounts harvested sequentially on: 1) priming condition (security or neutral recall) and counterbid condition (high or low), for the main effects of each of these, 2) priming condition, counterbid condition, and each of the individual measures subscales from the questionnaire packet (one subscale per model), 3) priming condition, counterbid condition, each individual measure, and the three two-way interactions possible between them, for the effects of each two-way interaction, and 4) priming condition, counterbid condition, each individual measure, the three two-way interactions, and the three-way interaction computed from all of the predictors, for the

effect of the three-way interaction of all key terms. In all analyses, the predictors were zero centered.

Initial analyses revealed nonsignificant effects for both priming, $\beta = .11$, $t(97) = 1.05$, $p = .30$, and counterbid, $\beta = -.13$, $t(97) = -1.27$, $p = .21$, as well as for the priming by counterbid interaction, $\beta = .04$, $t(96) = .21$, $p = .83$. Thus, neither priming nor counterbid successfully predicted total harvest, nor did the combined effects of the two. Analyses including the materialism measures, however, yielded two significant findings, both of which were consistent with the general hypothesis.

First, a significant interaction was found for priming by participants' scores on the possessiveness subscale of the Belk scale, $\beta = -.36$, $t(93) = -2.39$, $p = .02$. This subscale reflects the extent to which individuals maintain close control over their possessions. Participants who were low on possessiveness harvested significantly more following the security prime (Predicted Value = 151.81) than following the neutral prime (Predicted Value = 132.64), $\beta = .29$, $t(96) = 2.03$, $p = .05$. The harvest of participants who were high on possessiveness were between these two extremes and did not differ as a function of security prime (Predicted Value = 141.12) and neutral prime (Predicted Value = 145.20), $\beta = -.08$, $t(96) = -.54$, $p = .59$. In short, the secure nonmaterialists (i.e., lack of possessiveness) harvested the most in the long run. The predicted values for this interaction are plotted in Figure 6.

And second, a significant interaction was found for priming by participants' scores on the success subscale of the Richins and Dawson measure, $\beta = -.36$, $t(93) = -2.56$, $p = .01$. This interaction was similar to the priming by possessiveness interaction described above. Specifically, it was driven primarily by participants who were low on the materialism/success belief, who harvested significantly more following the security prime (Predicted Value = 156.24)

than following the neutral prime (Predicted Value = 133.02), $\beta = .35$, $t(96) = 2.51$, $p = .01$. The harvest of participants who were high on the materialism/success belief fell between these extremes and was not affected by security prime (Predicted Value = 136.98) or neutral prime (Predicted Value = 146.11), $\beta = -.14$, $t(96) = -.98$, $p = .33$. In short, the secure nonmaterialists (as indexed by the materialism/success belief) harvested the most in the long run.

Mediation testing for the significant interactions discussed above revealed no significant mediation for competitive worldview, dangerous worldview, or the security, avoidance, or ambivalence relationship subscales. Thus, the observed effects were not mediated by any of the variables measured in this study.

Discussion

Based on the premise that one of the root causes of materialism might be relational insecurity, Study 2's hypothesis was that priming relational security might lower participants' acquisitive, materialistic behaviors in a resource dilemma game. The overall findings of Study 2 provide strong support for this hypothesis.

The effect of the security prime on participants' opening bids was marginally significant ($p = .07$). Thus, participants receiving the security prime showed a tendency to make lower opening bids than participants receiving the neutral prime. This trend is consistent with the hypothesis that priming relational security lowered the participants' need to compensate for feelings of relational insecurity through materialistic acquisition.

The significant interactions between priming and the endorsement of intrinsic goals (especially the community goal) and between priming and the endorsement of postmaterialism served to clarify the manner in which the priming procedure had its effect on participants'

opening bids. Specifically, the security prime was most effective for participants who reported low intrinsic values or low endorsement of sociopolitical postmaterialism. These more materialistic participants had a tendency to place very high opening bids in the neutral condition, while placing dramatically lower opening bids in the secure prime condition. Thus, the security prime had a tendency to neutralize the natural tendencies of the highly materialistic participants.

Results obtained for the analysis of participants' average bids across all completed rounds offered additional support for the relational security hypothesis. Specifically, there were significant interactions between priming and the endorsement of wealth, appearance, possessiveness, materialism/success beliefs, sociopolitical materialism, and postmaterialism. Each of these interactions was driven primarily by the more materialistic participants (those high on wealth, appearance, possessiveness, materialism/success belief and sociopolitical materialism, as well as those low on postmaterialism). Specifically, the more materialistic participants placed significantly higher bids after the neutral prime than after the security prime. This pattern suggests that the priming of relational security can neutralize the habitual tendencies of the more materialistic participants.

Results obtained for the number of rounds completed (a measure of how long the hypothetical forests survived with remaining timber) also lent support to the study's hypothesis. Participants receiving the security prime maintained the forest longer than did participants receiving the neutral prime. This finding is consistent with the hypothesis that when individuals have less need to compensate for insecure relationships through materialistic acquisitions, they are more likely to sustain the availability of social resources.

And finally, the priming hypothesis was supported by the results for participants' total harvest. Participants who were low in their endorsement of possessiveness and

materialism/success beliefs harvested significantly more timber after receiving the security prime than the neutral prime. In other words, the participants who were presumably least motivated to attain the resources were those most likely to attain them in the long run.

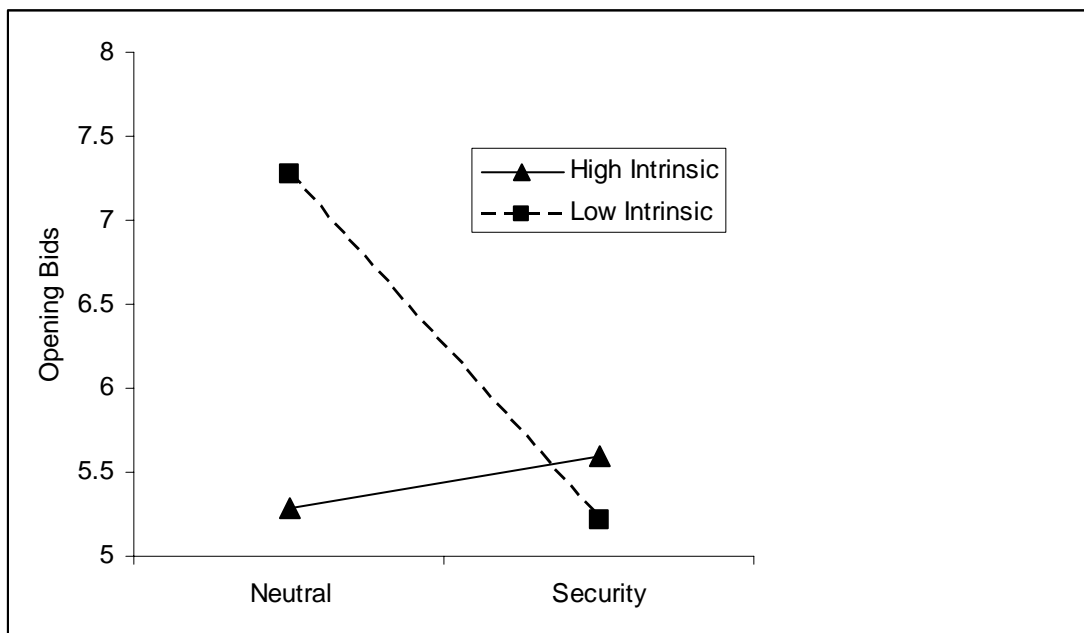
Taken together, the results offer strong support for the study's hypothesis that increasing relational security can reduce materialistic behavior. Moreover, it did so in ways that highlight a variety of the benefits of reducing materialism. Specifically, the low materialists who received the secure prime not only harvested more in the long run, but did so in a way that maintained the resources they were harvesting. Thus, their behaviors benefited themselves, as well as contributed to the maintenance of the commons (i.e., the forest). The highly acquisitive participants, on the other hand, sabotaged their long term performance through their overly high early bids, and made the commons unavailable to others.

Two additional aspects of the results require some mention. First, there was a persistent trend for the predicted effects to be obtained among participants who were high on the various materialism measures (or, conversely, low on nonmaterialistic measures such as intrinsic values or postmaterialism). Why were the effects of the security prime generally limited to these participants? One possible explanation is that less materialistic participants were subject to a floor effect. With their initial materialism levels already low, they may not have had as much room for a decrease in materialism in response to the security prime. More materialistic participants, on the other hand, had ample room to adjust their natural tendencies downward (as seen in their high opening and average bids in the neutral condition). Thus, they could place significantly lower bids following the security prime. Unfortunately, this explanation cannot be verified with the existing data. Thus, it awaits further research.

A second puzzling trend was for participants low in materialism to place slightly higher average bids after receiving the security prime relative to the neutral prime. This trend was observed in each of the six significant interactions reported for average bid (wealth, appearance, possessiveness, materialism/success belief, sociopolitical materialism and postmaterialism), although it reached statistical significance in only one case (materialism/success belief). One possible explanation for this trend could be that participants low in materialism were already generally high in their level of relational security. If so, then the increased salience of relational security resulting from the security prime might have led them to experience the security as a kind of safe harbor from which to venture out and take chances in directions they otherwise might not pursue. Because the one significant increase among the low materialists could be a Type I error, and because there is nothing in the experiment that could provide insight into this trend, an explanation of it awaits further research.

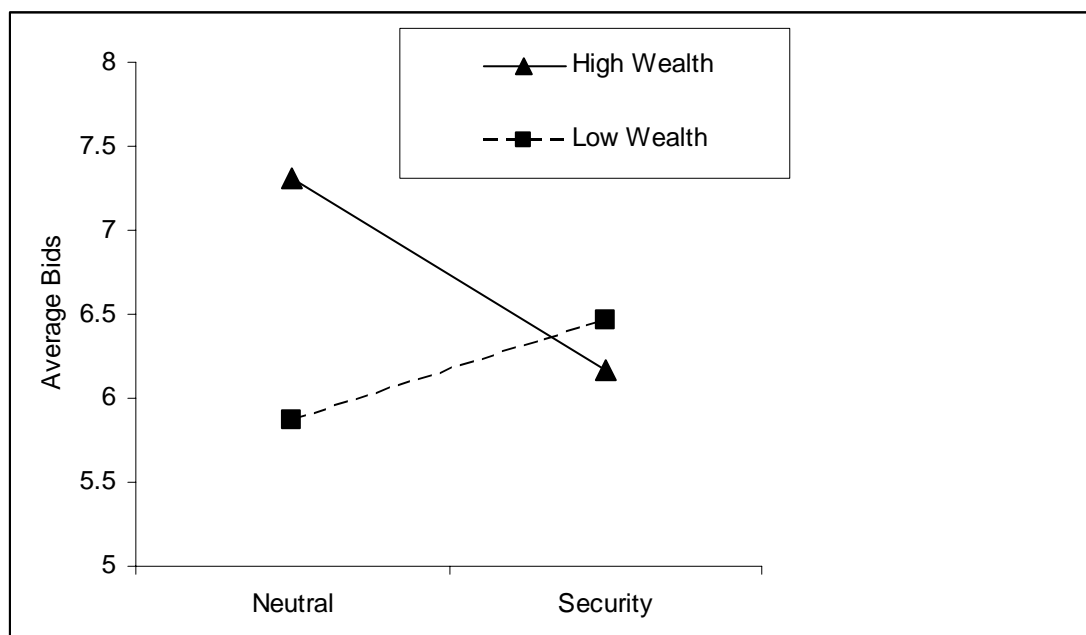
Overall, the picture to emerge from Study 2 is one of strong support for the secure priming hypothesis. The priming of relational security tended to lower the opening bids of all participants and significantly lower the average bids of participants high on certain measures of materialism, findings that are consistent with the hypothesis that increasing relational security decreases materialistic behavior. It also increased the length of time the forests survived and it increased the total amount harvested by participants low on certain measures of materialism, findings which suggest that there are public as well as private benefits to the decreased materialism brought about through increased relational security.

FIGURE 4



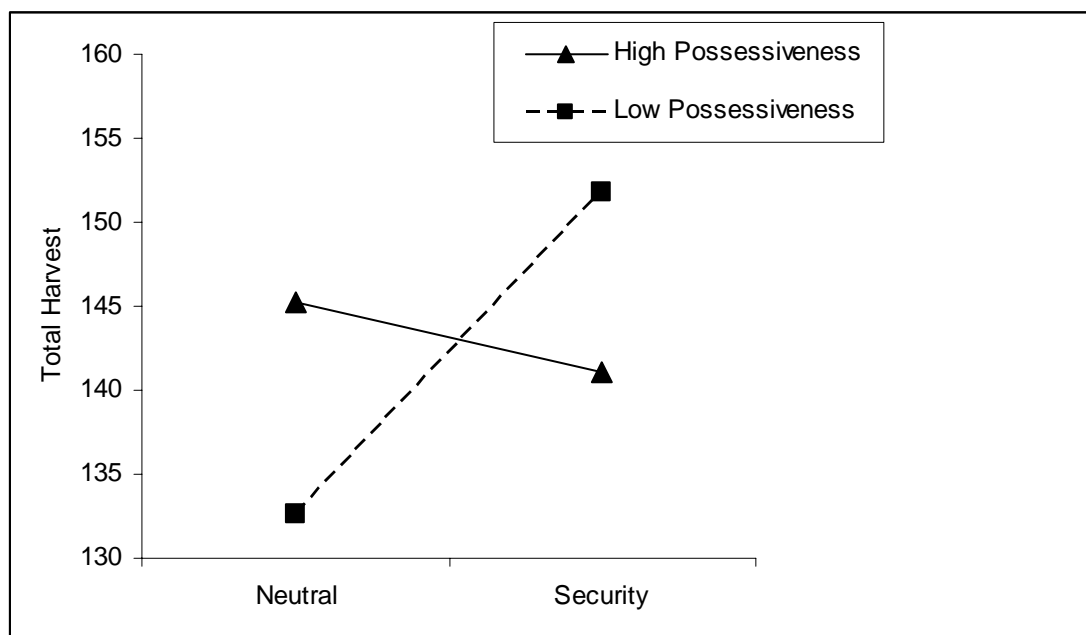
Interaction of Priming Condition by Intrinsic Value Endorsement
on Participants' Opening Bids

FIGURE 5



Interaction of Priming Condition by Wealth Endorsement
on Participants' Average Bids

FIGURE 6



Interaction of Priming Condition by Appearance Endorsement
on Participants' Total Harvests

CHAPTER 7

GENERAL DISCUSSION

Materialism is essentially a set of beliefs that relate the acquisition of material goods to positive outcomes such as happiness, satisfaction, and success. These beliefs are reinforced daily through the endless images of commercial mass media, advertising, and popular culture that so dominate the contemporary landscape. Yet the available research highlights the persistent failures of materialism to deliver on its ubiquitous promise of a better life through material acquisition.

Put simply, the acquisition of material goods does not make people happy (Csikszentmihalyi, 1999; Kasser & Ryan, 1993). In fact, it is associated with lower self-esteem (Kasser & Ryan, 2001) and higher occurrences of a variety of mental disorders (Cohen & Cohen, 1996). It also undermines relational needs by decreasing the quality of an individual's personal relationships (Kasser & Ryan, 2001), and by making individuals less empathetic towards others (Sheldon & Kasser, 1995) and more likely to feel alienated from their culture (McHoskey, 1999). Additionally, when individuals are motivated by materialistic concerns, they tend to ignore their intrinsic motivations and act more from extrinsic considerations (Srivastava, et al., 2001; Kasser & Ryan, 1993) or irrational compulsions (Kottler, 1999; Hartston & Koran, 2002). In short, materialistic pursuits do not deliver on their promise because they fail to satisfy basic human needs.

The negative effects of materialism are evident at not just the individual level, however. People who adopt the materialistic strategy show less concern for the natural environment

(Abramson & Inglehart, 1995; Richins & Dawson, 1992), and ignore the implications of their behaviors on the intricate web of trade and labor arrangements that constitute the global economy (Goodman & Cohen, 2004).

There are good reasons, therefore, to move beyond the merely descriptive phase of identifying materialism's failures and to move constructively in the direction of developing interventions aimed at reducing its importance in people's lives. Doing so, however, may involve a better understanding of the root causes of materialism.

Research from a variety of perspectives suggests that materialism is associated with insecure attachments. Specifically, materialism has been correlated with having less nurturing caregivers (Kasser, et al., 1995; Williams, et al., 2000) and with coming from broken or divorced families (Rindfleisch, et al., 1997). There is also evidence that most individuals become more materialistic during periods of economic difficulty or threat to national security (Abramson & Inglehart, 1995), or when they experience doubt and insecurity more generally (Chang & Arkin, 2002). In short, it appears that insecurity is one instigator of materialism.

Based on these observations, I began my dissertation under the assumption that if experiences of insecurity lead to higher levels of materialism, then decreasing insecurity should decrease materialism as well. To test this general hypothesis, I adapted a method of priming relational security developed by Mario Mikulincer and colleagues (e.g., Mikulincer, et al., 2003). Specifically, Mikulincer's work has shown that priming relational security can produce behavior consistent with a secure attachment style. The present studies were designed to see if priming secure relational schemas could reduce participants' commitment to materialistic values (Study 1) as well as their engagement in acquisitive, materialistic behaviors (Study 2). The

results of both studies generally supported the security priming hypothesis, although the results of Study 1 were qualified by the effectiveness of the priming procedure.

In Study 1, I hypothesized that security priming would reduce materialistic behaviors in the form of a decrease in the endorsement of extrinsic values and a corresponding increase in endorsement of intrinsic values. Consistent with this hypothesis, participants low in materialism endorsed extrinsic goals less and intrinsic goals more following security priming, though not to a statistically significant degree. Contrary to this hypothesis, however, participants high in materialism showed the opposite pattern. Although unexpected, this increase in materialism as a function of relational priming seemed to make some sense in light of additional analysis.

Coding of the security episodes participants were asked to recall revealed that participants high on the materialism/happiness belief recalled stories that were not strong exemplars of secure relational attachment. This seems to be why the secure priming procedure backfired for these participants. Having difficulty recalling an instance of genuine security may have increased the insecurity of these participants. This, in turn, seems to have increased their endorsement of materialistic values. So, while the results of Study 1 do not confirm the priming hypothesis in a straightforward way, they nevertheless offer additional support for the notion that materialism and insecurity are linked closely.

Compared to the results of Study 1, those of Study 2 offered strong support for the security priming hypothesis. Recall that Study 2 set out to apply the secure priming procedure to a reduction of explicitly materialistic behavior in the context of a social commons dilemma (a forest management simulation). Would participants place lower bids after receiving the security prime? How would the forests fare under such participants?

The results suggest that participants receiving the security prime placed lower bids on the opening round (a measure of the prime's immediate effect). Thus, participants primed with relational security did not demonstrate as strong a need to engage in material acquisition at the outset of the scenario. In addition, participants who were high on various measures of materialism and who had received the security prime placed lower average bids across all rounds of the simulation. Thus, the security prime appeared to neutralize certain components of materialism, producing an effect on participants' explicit, materialistic behaviors that lasted beyond the initial bid, and in fact lasted throughout the duration of the scenario.

The results of Study 2 also hinted at the potential social and environmental benefits of increasing relational security. The forests flourished longer under participants who were primed with relational security (as assessed by number of rounds completed), and these participants ultimately harvested more timber across the simulation than did participants who did not receive the security prime. The participants who had been securely primed maintained the health of the forest over the long run, and thus maximized the benefits to themselves, to the forests, and to others dependent upon this common resource.

The bottom line, therefore, is that Study 2 provided strong support for the relational priming hypothesis, and Study 1 provided suggestive evidence while at the same time suggesting additional lines of research.

Future Research

Like all research this project had some unanswered questions. For example, why did the highly materialistic participants in Study 1 fail to recall good exemplars of secure, supportive relationships? There were no theoretically significant differences in the quality of the relationships recalled by the high and low materialists in Study 2. There were two obvious

differences between the studies. Different experimenters ran the studies and the participants in Study 1 were run individually, whereas those in Study 2 were run in groups of four. It remains to be seen if these or some other factors were responsible for the recall differences.

Future research could also attempt to manipulate directly the ability of participants to recall good instances of secure relationships. It may be possible to do this using a variant of the technique developed by Schwarz and colleagues (Schwarz, et al., 1991). They had participants recall either six or twelve instances in which they had acted in an assertive (or unassertive) manner. At the end of this procedure, the participants who had been asked to recall twelve instances rated themselves as less assertive (or unassertive) than participants who had been asked to recall six instances. Apparently, the difficulty of the task made participants feel that they had little support for the conclusion that they were assertive (or unassertive). Analogously, it may be that participants asked to recall a high number of supportive behaviors would feel less secure than those asked to recall a small number. If so, then this type of priming could lead to the boomerang effect seen among the high materialists in Study 1.

Studies 1 and 2 manipulated secure priming and assessed materialistic behavior. Both the priming and the behavior have been shown in previous research to be related to anxiety. Thus, the fact that the secure priming affected the participants' materialistic behavior, and that it did so primarily among those high in materialism, strongly suggests that the results were underlain by anxiety. There was no direct evidence for this, however. Future research on this topic might benefit from manipulations and measures of participants' anxiety.

Additionally, the current studies may be of relevance to future researchers in that they are among the first to pursue the topic of materialism experimentally, and thus to demonstrate concrete ways in which this can be done. They also move beyond the phase of merely describing

materialism's failures to deliver happiness and well-being, and may help to usher in a new form of applied research focused on the reduction of materialism, and by extension, its corrosive effects. And finally, the current studies demonstrate that psychological research on materialism need not be limited to its effects on the individual, but can be utilized to explore its social and environmental implications as well.

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APPENDIX A

MODIFIED ASPIRATIONS INDEX

(Adapted from Kasser & Ryan, 1993, 1996)

Everyone has long-term goals or aspirations. These are the things that individuals hope to accomplish over the course of their lives. Below, you will find a number of life goals, presented one at a time, and we ask you to assess how important each goal is to you, according to the following scale:

not at all		moderately		very
1	2	3	4	5

1. To be a very wealthy person. (W)
2. To grow and learn new things. (PG)
3. To have my name known by many people. (F)
4. To have good friends that I can count on. (R)
5. To successfully hide the signs of aging. (I)
6. To work for the betterment of society. (C)
7. To have many expensive possessions. (W)
8. At the end of my life, to be able to look back on my life as meaningful and complete. (PG)
9. To be admired by many people. (F)
10. To share my life with someone I love. (R)
11. To have people comment often about how attractive I look. (I)

12. To assist people who need it, asking nothing in return. (C)
13. To be financially successful. (W)
14. To choose what I do, instead of being pushed along by life. (PG)
15. To be famous. (F)
16. To have committed, intimate relationships. (R)
17. To keep up with fashions in hair and clothing. (I)
18. To work to make the world a better place. (C)
19. To be rich. (W)
20. To know and accept who I really am. (PG)
21. To have my name appear frequently in the media. (F)
22. To feel that there are people who really love me, and whom I love. (R)
23. To achieve the "look" I've been after. (I)
24. To help others improve their lives. (C)
25. To have enough money to buy everything I want. (W)
26. To gain increasing insight into why I do the things I do. (PG)
27. To be admired by lots of different people. (F)
28. To have deep enduring relationships. (R)
29. To have an image that others find appealing. (I)
30. To help people in need. (C)

Scoring Key

W = Wealth Goals: 1, 7, 13, 19, 25

PG = Personal Growth Goals: 2, 8, 14, 20, 26

F = Fame Goals: 3, 9, 15, 21, 27

R = Relationships Goals: 4, 10, 16, 22, 28

I = Image Goals: 5, 11, 17, 23, 29

C = Community Goals: 6, 12, 18, 24, 30

APPENDIX B

THE BELK MATERIALISM SCALE

(Belk, 1984)

Please state your level of agreement with each of the statements below according to the following scale:

Completely					Completely
Disagree					Agree
1	2	3	4	5	

1. Renting or leasing a car is more appealing to me than owning one. (P) *
2. I enjoy having guests stay in my home. (N) *
3. I am bothered when I see people who buy anything they want. (E)
4. I tend to hang on to things I should probably throw out. (P)
5. I enjoy sharing what I have. (N) *
6. I don't know anyone whose spouse or steady date I would like to have as my own. (E) *
7. I get very upset if something is stolen from me, even if it has little monetary value. (P)
8. I don't like to lend things, even to good friends. (N)
9. When friends do better than me in competition it usually makes me happy for them. (E) *
10. I don't get particularly upset when I lose things. (P) *
11. It makes sense to buy a lawnmower with a neighbor and share it. (N) *
12. People who are very wealthy often feel they are too good to talk to average people. (E)
13. I am less likely than most people to lock things up. (P) *

14. There are certain people I would like to trade places with. (E)
15. I would rather buy something I need than borrow it from someone else. (P)
16. I don't mind giving rides to those who don't have a car. (N) *
17. When friends have things I cannot afford it bothers me. (E)
18. I worry about people taking my possessions. (P)
19. I don't like to have anyone in my home when I'm not there. (N)
20. I don't seem to get what is coming to me. (E)
21. When I travel I like to take a lot of photographs. (P)
22. I enjoy donating things to charity. (N) *
23. When Hollywood stars or prominent politicians have things stolen from them I really feel
sorry for them. (E) *
24. I never discard old pictures or snapshots. (P)

Scoring Key

P = Possessiveness Items

N = Nongenerosity Items

E = Envy Items

* = Reverse Scored Items

APPENDIX C

THE RICHINS AND DAWSON MATERIALISM SCALE

(Richins & Dawson, 1992)

Please state your level of agreement with each of the statements below according to the following scale:

Completely					Completely
Disagree					Agree
1	2	3	4	5	

1. I admire people who own expensive homes, cars, and clothes. (S)
2. I usually buy only the things I need. (C) *
3. I have all the things I really need to enjoy life. (H) *
4. Some of the most important achievements in life include acquiring material possessions.
(S)
5. I try to keep my life simple, as far as possessions are concerned. (C) *
6. My life would be better if I owned certain things I don't have. (H)
7. I don't place much emphasis on the amount of material objects people own as a sign of success. (S) *
8. The things I own aren't all that important to me. (C) *
9. The things I own say a lot about how well I'm doing in life. (S)
10. I enjoy spending money on things that aren't practical. (C)
11. I wouldn't be any happier if I owned nicer things. (H) *

12. I like to own things that impress people. (S)
13. Buying things gives me a lot of pleasure. (C)
14. I'd be happier if I could afford to buy more things. (H)
15. I don't pay much attention to the material objects that other people own. (S) *
16. I like a lot of luxury in my life. (C)
17. It sometimes bothers me quite a bit that I can't afford to buy all the things I'd like. (H)
18. I put less emphasis on material things than most people I know. (C) *

Scoring Key

S = Success

C = Centrality

H = Happiness

* = Reverse Scored

APPENDIX D

MODIFIED WORLD VALUES SURVEY

(Adapted from Abramson & Inglehart, 1995)

Please review each of the possible national goals listed below. Then, state how much you believe each goal is important for our country, using the following scale:

Not at All					Very
Important					Important
1	2	3	4	5	

1. Seeing that people have more say in how things are decided at work and in their communities. (P)
2. Trying to make our cities and countryside more beautiful. (M)
3. Maintaining a high level of economic growth. (M)
4. Making sure the country has a strong defense force. (M)
5. Giving the people more say in important government decisions. (P)
6. Protecting free speech. (P)
7. Maintaining order in the nation. (M)
8. Fighting rising prices. (M)
9. Progress toward a less impersonal society, more humane society. (P)
10. Progress toward a society in which ideas count more than money. (P)
11. A stable economy. (M)
12. The fight against crime. (M)

Scoring Key

M = Materialistic values

P = Postmaterialistic values

APPENDIX E

ATTACHMENT STYLES QUESTIONNAIRE

(Mikulincer, Florian, & Tolmacz, 1990; adapted from Hazan & Shaver, 1987)

Please state your level of agreement with each of the statements below according to the following scale:

Completely					Completely
Disagree					Agree
1	2	3	4	5	

1. I find it relatively easy to get close to others. (S)
2. I am somewhat uncomfortable being close to others. (AV)
3. I find that others are reluctant to get as close as I would like. (AM)
4. I am comfortable depending on other. (S)
5. I find it difficult to trust others completely. (AV)
6. I often worry that my partner doesn't love me. (AM)
7. I am comfortable having them depend on me. (S)
8. I find it difficult to allow myself to depend on others. (AV)
9. I often worry that my partner won't want to stay with me. (AM)
10. I don't often worry about being abandoned. (S)
11. I am nervous when anyone gets too close. (AV)
12. I want to merge completely with another person. (AM)
13. I don't often worry about someone getting too close to me. (S)

14. Love partners often want me to be more intimate than I feel comfortable being. (AV)

15. My desire for closeness sometimes scares people away. (AM)

Scoring Key

S = Secure

AV = Avoidant

AM = Ambivalent

APPENDIX F

DANGEROUS AND THREATENING SOCIAL WORLD VIEW SCALE

(Duckitt, Wagner, Du Plessis, & Birum, 2002; adapted from Altemeyer, 1988)

Please state your level of agreement with each of the statements below according to the following scale:

Completely					Completely
Disagree					Agree
1	2	3	4	5	

1. Although it may appear that things are constantly getting more dangerous and chaotic, it really isn't so. Every era has its problems, and a person's chances of living a safe, untroubled life are better today than ever before. *
2. Any day now chaos and anarchy could erupt around us. All the signs are pointing to it.
3. There are many dangerous people in our society who will attack someone out of pure meanness, for no reason at all.
4. Despite what one hears about "crime in the street," there probably isn't any more now than there ever has been. *
5. If a person takes a few sensible precautions, nothing bad is likely to happen to him or her; we do not live in a dangerous world. *
6. Every day as society becomes more lawless and bestial, a person's chances of being robbed, assaulted, and even murdered go up and up.

7. My knowledge and experience tells me that the social world we live in is a basically safe, stable and secure place in which most people are fundamentally good. *
8. It seems that every year there are fewer and fewer truly respectable people, and more and more persons with no morals at all who threaten everyone else.
9. The “end” is *not* near. People who think that earthquakes, wars, and famines mean God might be about to destroy the world are being foolish. *
10. My knowledge and experience tells me that the social world we live in is basically a dangerous and unpredictable place, in which good, decent people’s values and way of life are threatened and disrupted by bad people.

* = reverse scored items

APPENDIX G

COMPETITIVE JUNGLE SOCIAL WORLD VIEW SCALE

(Duckitt, Wagner, Du Plessis, & Birum, 2002; adapted from Altemeyer, 1998)

Please state your level of agreement with each of the statements below according to the following scale:

Completely					Completely
Disagree					Agree
1	2	3	4	5	

1. Winning is not the first thing; it's the *only* thing.
2. The best way to lead a group under one's supervision is to show them kindness, consideration, and treat them as fellow workers, not as inferiors. *
3. If one has power in a situation, one should use it however one has to in order to get one's way.
4. If it's necessary to be cold blooded and vengeful to reach one's goals, then one should do it.
5. Life is not governed by the "survival of the fittest." We should let compassion and moral laws be our guide. *
6. Money, wealth and luxury are what really count in life.
7. It is better to be loved than to be feared. *
8. It is much more important in life to have integrity in your dealings with others than to have money and power. *

9. It's a dog-eat-dog world where you have to be ruthless at times.
10. Charity (i.e., giving somebody something for nothing) is admirable *not* stupid. *
11. You know that most people are out to "screw" you, so you have to get them first when you get the chance.
12. All in all it is better to be humble and honest than important and dishonest. *
13. My knowledge and experience tells me that the social world we live in is basically a competitive "jungle" in which the fittest survive and succeed, in which power, wealth, and winning are everything, and might is right.
14. Honesty is the best policy in all cases. *
15. There is really no such thing as "right" and "wrong." It all boils down to what you can get away with.
16. Do unto others as you would have them do unto you, and never do anything unfair to someone else. *
17. One of the most useful skills a person should develop is how to look someone straight in the eye and lie convincingly.
18. Basically people are objects to be quietly and coolly manipulated for one's own benefit.
19. One should give others the benefit of the doubt. Most people are trustworthy if you have faith in them. *
20. We can make a society based on unselfish cooperation, sharing and people generously helping each other, and NOT on competition and acquisitiveness. *

* = reverse scored items

APPENDIX H

INSTRUCTIONS FOR PRIMING CONDITIONS

Secure Base Priming Condition

We would like to ask you to recall, as vividly and in as much detail as you can, an instance in which you encountered a problem that was too big to face alone, but through the help of loving and supportive others, you were able to overcome. After you have taken a few moments to recall this, we would like you to describe it in writing below.

There is no right or wrong way to do this. We simply want you to first recall, and then describe, the experience in any way that you please. Please let the experimenter know when you are done.

Neutral Priming Condition

We would like to ask you to recall, as vividly and in as much detail as you can, an instance in which you were brushing your teeth. After you have taken a few moments to recall this, we would like you to describe it in writing below.

There is no right or wrong way to do this. We simply want you to first recall, and then describe, the experience in any way that you please. Please let the experimenter know when you are done.

APPENDIX I

DESCRIPTIONS FOR VALUES ON THE “CHIPS” TASK

Appearance (Attractiveness, Image)

Community (Humanitarianism, Compassion)

Growth (Self-Direction, Self-Acceptance)

Popularity (Fame, Status)

Relatedness (Intimacy, Closeness)

Wealth (Money, Possessions)

APPENDIX J

INSTRUCTIONS FOR COMMONS DILEMMA

Please take a moment to imagine the following scenario:

- You are the owner of a timber company.
- Your company and another timber company both harvest timber from the same national forest.
- There are 100 acres of timbered land within this forest.
- Every year, you and the other company each make separate bids for how many acres you would like to harvest for the coming year.
- Each year, you may bid to harvest anywhere from 0 to 10 acres of the forest.
- The forest regenerates, through new growth, at a rate of 10 acres per year.

Now we would like you to participate in a simulation of this scenario:

- We would like you to place a bid for timber, ranging anywhere from 0 to 10 acres.
- Once you have done so, your bid will be collected by the researcher, who will then coordinate your bid with another participant who represents the other timber company in the scenario described above.
- This process will continue until either 25 rounds (representing 25 years) have been completed, or until the forest is completely depleted, whichever occurs first.

To begin, please place your first bid next to “Year 1” under the “Your Bid” column below. The researcher will complete all of the remaining columns for each round/year.

	Your Bid	Other Bid	Subtotal	New Acres	Remaining Acres
Year 1	_____	_____	_____	+10	_____
Year 2	_____	_____	_____	+10	_____
Year 3	_____	_____	_____	+10	_____
Year 4	_____	_____	_____	+10	_____
Year 5	_____	_____	_____	+10	_____
Year 6	_____	_____	_____	+10	_____
Year 7	_____	_____	_____	+10	_____
Year 8	_____	_____	_____	+10	_____
Year 9	_____	_____	_____	+10	_____
Year 10	_____	_____	_____	+10	_____
Year 11	_____	_____	_____	+10	_____
Year 12	_____	_____	_____	+10	_____
Year 13	_____	_____	_____	+10	_____
Year 14	_____	_____	_____	+10	_____
Year 15	_____	_____	_____	+10	_____
Year 16	_____	_____	_____	+10	_____
Year 17	_____	_____	_____	+10	_____
Year 18	_____	_____	_____	+10	_____
Year 19	_____	_____	_____	+10	_____
Year 20	_____	_____	_____	+10	_____
Year 21	_____	_____	_____	+10	_____
Year 22	_____	_____	_____	+10	_____

Your Bid	Other Bid	Subtotal	New Acres	Remaining Acres
Year 23 _____	_____	_____	+10	_____
Year 24 _____	_____	_____	+10	_____
Year 25 _____	_____	_____	+10	_____