Frugality, Generosity, and Materialism in Children and Adolescents

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It is a psychological truism that as children grow into adulthood, they begin to take on or internalize the various attitudes and values of society. This process of socialization has been relatively well-studied for a variety of aspects of culture, including how children come to believe certain things about their gender, their race, the nature of their selves, and multiple other aspects of their identities. There is one key feature common to all cultures which has, however, been relatively ignored by empirical research in psychology. Specifically, all children must be socialized with regards to a culture's economy. For any economy to maintain itself, the next generation must develop the set of economic beliefs, attitudes, and practices which are propounded by that particular economic system; if not, that generation will fail to adequately participate in the economy, which will lead the economy, in turn, to falter (Fromm, 1955; Kasser, Ryan, Couchman, & Sheldon, in press).

Cultures can espouse a variety of different attitudes about money and its usage which children might internalize to one extent or another. As shown by the historian Shi (1985), U.S. culture has, since colonial times, reflected two conflicting trends regarding the use of money and the material goods it can purchase. At certain times (e.g., the Great Depression, WWII) and in certain subcultures (e.g., Puritans, hippies), people have focused on "plain living and high thinking" and have attempted to live self-sufficiently and frugally. More commonly, however, a materialistic ethos has dominated U.S. culture, suggesting that citizens and consumers should be concerned with the acquisition of more goods and the maximization of profit. A third attitude can also be discerned in U.S. history, as throughout the decades certain sectors of the populace have encouraged the sharing of one's money and possessions (through philanthropy, charitable organizations, etc.).

These prominence of these attitudes of frugality, materialism, and generosity ebb and flow across time and cultures. Because each attitude has important ramifications not only for people's economic activity, but also for their personal well-being, interpersonal relations, the well-being of others, and environmentally relevant behaviors (see below), it is important to be able to measure these three attitudes and track changes in them over time. Unfortunately, there are no brief measures of these three economic attitudes which have been validated for use in samples of children and adolescents. This study therefore set out to develop such measures in the hope that they will be useful for research and survey purposes.

Economic attitudes

Simply stated, as individuals approach economic behavior, some restrain their purchasing whereas others purchase all they want (i.e., frugality), some share their money and possessions whereas others keep these to themselves (i.e., generosity), and some want to obtain a great deal of money and material possessions whereas others focus on different endeavors (i.e., materialism). Below, I more clearly define each attitude and briefly review some of the existing empirical research concerning each construct.

Frugality. Frugality concerns the extent to which individuals practice self-restraint in their use of money. Individuals high in frugality are rather "tight" with their money, trying to save resources and live with what they have. In contrast, those who are "loose" shows little restraint in their purchases. According to a recent review by Lastovicka, Bettencourt, Hughner, & Kuntze (1999), frugality has been essentially ignored in empirical research; the only related empirical work they found was that of DeYoung (1986), who studied people's motivations for being resourceful with their possessions. Lastovicka et al. attempted to correct for this dearth of work by conducting an impressive series of studies to develop and validate a frugality measure for use with adults. In the studies, they found frugal adults were less compulsive in their buying habits, more conscious of a product's price and value, and more likely to engage in restrained consumer use behaviors (e.g., eating leftovers, timing showers, using a clothesline instead of a dryer, etc.). Lastovicka et al. only investigated adults, however, so no conclusions can be made about the validity of the frugality measure in samples of children and adolescents.

Generosity. Generosity concerns the extent to which individuals share their money and possessions. Generous people are willing to give away or share their possessions and money, and they make life choices that help other people even if they diminish their own personal earnings. Less generous people, in contrast, share less and care little about the beneficial impact they may have on others. Generosity is clearly related to concepts such as altruism and prosocial behavior, which are more widely studied but concern behaviors beyond those that are financial and economic in nature. Although a couple of scales appear to have been developed to measure generosity, no one measure appears to be widely used. Instead, the construct is most frequently measured among children by providing them with some money or tokens and asking them to donate to others. Work with this methodology suggests that generous children have a more internal locus of control (Fincham & Barling, 1978) and higher self-esteem (Miller, Ginsburg, & Rogow, 1981). Little work has apparently been conducted on generosity in adolescents, where a scale might be more appropriately used.

Materialism. Materialistic individuals expend much energy towards becoming wealthy and owning many possessions, especially those which convey status and the "right" image in one's society (Kasser, 2002); people low in materialism care little for such pursuits. Three types of problems have been associated with a strong materialistic tendencies. First, studies in consumer psychology and psychology have found that people oriented in this way also report diminished well-being (see Kasser, 2002, for an extensive review). Such results have been documented with a variety of means of measuring well-being, with various age groups, and in several cultures around the world. At least two studies have replicated these findings in older children (Schor, 2003) and early adolescents (Cohen & Cohen, 1996). Second, research also shows that adults who are strongly concerned with material goals report lower quality relationships (Kasser & Ryan, 2001), are more competitive and less cooperative (Sheldon, Sheldon, & Osbaldiston, 2000), and are more Machiavellian (McHoskey, 1999). Parallel findings occur for adolescents, who report more anti-social activities if they score high in materialism (Cohen & Cohen, 1996; Kasser & Ryan, 1993). Finally, materialistic adults act in more ecologically-degrading ways, consuming more in resource management games (Sheldon & McGregor, 2000), engaging in fewer

materially simple behaviors (Richins & Dawson, 1992), and living lifestyles with higher "ecological footprints" (Brown & Kasser, 2003). To my knowledge, however, the relations of materialism to environmental behaviors have not been investigated in children or adolescents.

The current study

The primary purpose of the current study is to develop short, empirically sound measures of each of these three economic attitudes and validate their usage in samples of children and adolescents between the ages of 10 and 18. There currently exist no widely-used measures of economic generosity in children, and the one extant frugality scale (i.e., Lastovicka et al., 1999) has not, to my knowledge, been used with children. Regarding materialism, although three scales are widely used (Belk, 1984; Kasser & Ryan, 1993; Richins & Dawson, 1992) and the construct has been measured in children and adolescents (Cohen & Cohen, 1996; Kasser & Ryan, 1993; Schor, 2003), all the existing scales are rather long and unwieldy for use in large-scale surveys of children.

Thus, I integrated and adapted the insights and items from previous research to develop initial drafts of the three economic attitude measures. I then used factor analyses to determine which items held together as a single construct in the total sample, as well as in sub-samples divided by gender and age. Once short scales with adequate internal reliability were devised, I attempted to validate them by examining their correlations with each other and with a set of dependent variables that past research suggests should relate to the economic attitudes. Hypotheses are summarized below.

Intercorrelations of the three economic attitudes. Frugality, generosity, and materialism are clearly conceptually distinguishable, but they may be related to each other, as they all concern economic behavior. I therefore examined both their relations to each other and their ability to independently predict outcomes of interest.

In terms of their inter-relations, past research suggests that materialism and generosity are at odds with each other (Kasser, 2002; Schwartz, 1996), as it is very difficult to simultaneously obtain a great deal of wealth and possessions while at the same time giving one's wealth away and not caring about money; indeed, Belk (1984) included "non-generosity" as one of the three defining features of materialism. For

these reasons, I predicted a negative correlation between materialism and generosity. Regarding the relations of frugality to materialism, Lastovicka et al., (1999) found a significant negative correlation between the two (-.26) in a sample of adults; in contrast, Tatzel (2002) argues that the two are independent. No known work or theory was available to suggest hypotheses concerning the relations of frugality to generosity. For both of these correlations, I therefore predicted no relationships.

Because I expected any inter-correlations between the three economic attitudes to be of moderate size at best, each economic attitude was expected to have its own independent relations to dependent variables. This was tested in a series of analyses in which the dependent variables were simultaneously regressed onto frugality, generosity, and materialism (along with age as a control variable).

Gender and Age. Past research suggests that males are typically more materialistic than are females, whereas the converse is true for generosity (Kasser & Ryan, 1993; Weissbrod, 1980). This could of course be due to differential socialization, in which males are still considered to be the primary bread-winners whereas females are supposed to be more concerned with the well-being of others. Concerning frugality, Lastovicka et al. (1999) did not report any gender differences and we had no reasons to expect any.

Past research has not examined changes in frugality with age. Regarding materialism, Cohen & Cohen (1996) found that desires for money and possessions decreased slightly in boys but increased slightly in girls across adolescence. Some research on generosity suggests no changes during adolescence (Comeau, 1980), whereas other research shows that the desire to be useful and of service to others declines through adolescence (Cohen & Cohen, 1996). Mixed results are reported during childhood (Froming, Allen, & Underwood, 1983; Zarbatany, Hartmann, & Gelfand, 1985). Parallel to this slight and confusing literature, arguments can be made for either positive or negative correlations between age and each of the economic attitudes. On the one hand, as children age from 10 to 18, they develop stronger self-regulatory capacities to restrain impulsive behaviors and they develop greater capacities for abstract thought that might lead them to care about problems outside of themselves. As such, one might expect age to be positively correlated with frugality and generosity. On the other hand, as they age children are

also increasingly exposed to a consumer culture that glorifies material acquisition and impulsive spending to satisfy one's own wants (Kasser, et al., in press). As such, we might expect age to be negatively correlated with frugality and generosity while positively correlated with materialism.

Economic behavior. As one primary validational test, I examined how well each of the three scales predicted subjects' imagined use of money. Subjects were asked to imagine that they had received an unexpected windfall of $100, and were told that they could divide the money up by: spending it to buy things for themselves; giving it to church or charity; buying someone a gift; or saving it for the future. I predicted that: frugality would correlate negatively with buying things and positively with saving; generosity would correlate positively with giving to church or charity; and materialism would correlate positively with the amount spent on oneself and negatively with gifts to charity.

Environmental resource conservation. Given that each of the economic attitudes concerns the usage of material resources, each should bear relationships to the environmental impact of consumption behaviors. As described above, past research has indeed shown that frugal adults restrain their use of resources (Lastovicka et al., 1999) whereas materialistic adults use more resources (Brown & Kasser, 2003; Sheldon & McGregor, 2000). However, we know very little about whether these same factors will predict the environmentally-relevant behavior of children and adolescents. Nonetheless, I predicted that frugality should be positively associated with more resource conservation behavior, as such behavior typically involves saving and reusing what one already has. In contrast, materialism was predicted to be negatively related to positive environmental behavior, as the desire for ever-more material goods and wealth often pushes individuals to consume without regard to its impact. I made no predictions about generosity, although I expected that it might relate to more environmental conservation, given that generous individuals care more about the state of the "world at large."

Well-being. As described above, a growing body of research shows that materialism is associated with lower happiness and greater distress (Kasser, 2002) and this finding has been extended to middle schoolers (Schor, 2003) and teenagers (Cohen & Cohen, 1996). As such, I hoped to provide further

validation of the new materialism scale by examining correlations with subjective ratings of happiness, anxiety, and self-esteem.

What work exists on the relationship of generosity to well-being suggests that the two should be positively correlated. For example, children with high self-esteem are more generous (Miller et al., 1981), and adults who feel sad are less likely to be generous (Underwood, 1977). Relatedly, those with strong desires to improve the lives of others generally report greater well-being and less distress (Kasser & Ryan, 1993). We therefore expected generous people to report greater well-being.

Lastovicka et al. (1999) did not explore relations of frugality with happiness, but Tatzel (2002) predicted a quadratic relationship, such that moderate levels of frugality are associated with greater well-being than either high or low levels. I therefore made no predictions about the associations between frugality and well-being, but did explore both linear and quadratic effects.

Risk behavior. Finally, I examined relations of the economic attitudes to four risk behaviors common in children and adolescents: smoking cigarettes, drinking alcohol, fighting, and getting into trouble at school. Materialism has been related to more risk behaviors (such as smoking and drinking; Williams, Cox, Hedberg, & Deci, 2000) and more conduct problems (Cohen & Cohen, 1996; Kasser & Ryan, 1993) in adolescents, suggesting it should relate positively to each of these risk behaviors. I was unable to find any relevant research on the relationships of generosity to risk behavior, although, theoretically, generous individuals should be less likely to fight and get in trouble at school, given their general concern for the welfare of others. I had two reasons for predicting that frugal individuals would be less involved in risky behaviors. First, the self-restraint implied by frugality might carry over to their actions with other people and with addictive substances. Second, frugal people may be likely to see spending money on cigarettes and alcohol as a "waste" and thus not use their resources in that manner.

Method

Adolescents were recruited from one middle and one high school in a rural western Illinois school district. 160 packets were distributed at the middle school to approximately 40 students in each of 5th through 8th grades. Similarly, 143 packets were distributed at the high school to approximately 35

students in each of 9th through 12th grades. Students were provided with a parental permission form and the survey packet to bring home and fill out at their leisure, and asked to bring both back two days later, at which time they were given an honorarium of $3.

Of the 160 packets distributed at the middle school, 94 were returned two days later, for a response rate of 58.8%. Two of these packets were missing the first two pages of the survey, so these subjects were dropped from further analyses. Of the 92 middle schoolers returning completed packets, 20 were in the fifth grade, 24 were in the sixth grade, 31 were in the seventh grade, and 17 were in the eighth grade. Of the 143 packets distributed at the high school, 114 were returned two days later, for a response rate of 79.7%. Of those returning packets, 31 were in the ninth grade, 24 were in the tenth grade, 32 were in the eleventh grade, and 27 were in the twelfth grade.

Of the total 206 participants, 114 were male, 91 were female, and one subject did not report his/her gender. In terms of ethnicity, 197 were white, 1 was black, 1 was Hispanic, 1 was native America, and 6 reported other (mostly mixed) races. Age ranged from 10 to 18 (mean = 14.2 years, SD = 2.3). Of the 186 who knew their father's education, 18 reported their father as having less than a high school education, 73 as having graduated high school, 59 as having had some college education, 24 as having received a four-year college degree, and 12 as having some graduate degree. Of the 198 who knew their mother's education, 9 reported their mother as having less than a high school education, 65 as having graduated high school, 72 as having had some college education, 35 as having received a four-year college degree, and 17 as having some graduate degree.

Measures were administered in the order presented below.

Measures of economic attitudes.

Frugality. We adapted the 8-item frugality scale developed by Lastovicka et al. (1999), slightly changing items 1, 3, and 6 to make them more understandable to a younger sample of participants. Subjects rated their agreement with each item on a five-point scale, from strongly disagree to strongly agree.

Materialism. We developed an 8-item materialism scale by adapting items from a variety of sources, including the financial success domain of Kasser & Ryan's (1996) Aspiration Index, Richins & Dawson's (1992) Materialism scale, Cohen & Cohen's (1996) admiration ratings (materialism subscale), and Schor's (2003) consumer involvement scale. Subjects rated their agreement with each item on a five-point, strongly disagree to strongly agree scale.

Generosity. We developed a 5-item generosity scale by adapting items from the non-generosity subscale of Belk's (1984) materialism scale and the community feeling subscale of Kasser & Ryan's (1996) Aspiration Index. Subjects rated their agreement with each item on a five-point, strongly disagree to strongly agree scale.

Personal well-being measures.

Happiness. We used a single item measure of happiness, asking students to rate on a five-point scale how they have felt lately, from very unhappy to very happy. Similar single item happiness measures have been useful in other samples (e.g., Fordyce, 1988).

Anxiety. The Revised Children's Manifest Anxiety Scale (Reynolds & Richmond, 1978) asks subjects whether or not they have experienced 16 different symptoms of anxiety. Subjects simply respond yes or no.

Self-esteem. The 10-item Rosenberg (1965) self-esteem measure assessed student's self-evaluations. This survey is among the most widely used of self-esteem measures for adolescents. Subjects rated their agreement with items on a five-point, strongly disagree to strongly agree scale.

Risk behavior. Subjects were asked to think about the last three months and rate how often they smoked cigarettes, drank alcohol, got into physical fights, and got in trouble at school. Ratings were made on a five-point scale, from "almost never" to "most every day."

Other validity measures.

Environmental resource conservation. Ten items adapted from Lastovicka et al. (1999) and Brown and Kasser (2003) assessed the frequency with which subjects engaged in positive environmental behaviors that save resources. Some sample behaviors include turning off electric lights in unused rooms,

recycling, reusing paper, and reusing aluminum foil and plastic baggies. I chose behaviors that children and adolescents could possibly engage in, as opposed to others (e.g., choice of investments) that are more adult-oriented. Subjects rated the frequency with which they did each behavior in the last few months on a five point scale, from "never or almost never" to "always or almost always" (alpha = .67).

Imaginary windfall. To explore subjects' usage of money, they were asked to imagine that they had unexpectedly received $100 and could spend it in any of four ways: "buy stuff I want," "give to charity or church," "spend on gifts for other people," and "save for the future." Subjects were told that they could divide the $100 however they wanted, but to make sure that their use of the money in the four categories totaled $100.

Results

Overview. For all three of the economic attitude scales, I followed the same basic analytic strategy. First, a factor analysis was conducted on the relevant items in the entire sample of subjects, and any items which either formed secondary factors or did not load above .5 on the primary factor were dropped. Remaining items were then submitted to factor analyses in each of four sub-samples: girls, boys, middle schoolers, and high schoolers. Items which continued to load strongly on the primary factor in each of these sub-samples were retained for the final version of the scale, whereas those showing substantially worse loading in any of the sub-samples were dropped. Upon obtaining a stable factor structure, Cronbach's alphas were computed for the entire sample and for each of the four sub-samples. After creating a factor-derived scale in this manner, I then examined occurrences of missing data, as well as other descriptive measures including range, mean, standard deviation, skewness, and kurtosis.

Frugality scale. Initial factor analyses in the entire sample suggested a two factor solution, but a clean primary factor emerged which consisted of the items concerning restraint of spending (as opposed to items concerning reuse of resources). As can be seen in Table 1, when factor analyses were conducted with only the four financial restraint items, results were quite comparable across samples.

No missing data were noted for any of the four items composing the final version of the frugality measure. A total frugality score was computed by averaging responses to the four items. This summary variable showed substantial range (scores varied from 1 to 5), a mean near the midpoint of the scale (M = 3.61) and a standard deviation of .68. The distribution was slightly skewed (-.44) and Kurtosis equaled -.03.

Materialism scale. Initial factor analyses yielded a two-factor solution; after dropping the two items which formed the second factor, a third item was also discarded which loaded poorly on the primary factor. Analyses in the sub-samples suggested the deletion of yet a fourth item. Throughout, however, four items loaded consistently on the primary factor; these are reported in Table 2.

Only one person skipped one item, suggesting the participants had little trouble responding to the questions. The four items were averaged to form a summary materialism score, which showed substantial range (varying from 1 to 5), a mean near the scale's midpoint (M = 3.37) and a standard deviation of .79. The scale had a slight negative skew (-.15), and Kurtosis equaled -.28.

Generosity scale. Initial factor analyses showed that one item formed its own second factor, so it was dropped. Later factor analyses with the remaining four items were all consistent across the sub-samples (see Table 3).

In terms of missing data, one participant skipped the entire scale, but otherwise no items were omitted. A summary score was computed by averaging the four relevant items. This generosity scale showed a substantial range (scores varied from 1 to 5), a mean near the scale's midpoint (M = 3.34), and a standard deviation of .79. The distribution was slightly negative skewed (-.37) and kurtosis equaled .36.

Correlations with validitational variables.[1]

Intercorrelations. As predicted, materialism was negatively correlated with generosity ($r = -.31$, $p < .01$). Frugality was uncorrelated with materialism ($r = -.08$, ns) and marginally positively correlated with generosity ($r = .12$, $p = .08$).

[1] I examined whether the patterns of correlations differed by subjects' gender, but no striking trends emerged.

Demographics. Correlations were computed between the three economic variables and subjects' age and grade. Generosity showed significant declines with age ($r = -.25$, $p < .01$) and grade ($r = -.19$, $p < .01$). Frugality showed trends in the same direction ($r = -.13$ with age, $p = .06$; and $r = -.11$ with grade, $p = .11$). Materialism was unrelated to either age or grade (both $ps > .66$).

Next we tested for gender differences. As expected, boys (mean = 3.19) were lower in generosity than were girls (mean = 3.52; $t(202) = -3.08$, $p < .01$). Boys also reported marginally higher materialism (mean = 3.46) than did girls (mean = 3.26; $t(203) = 1.82$, $p = .07$). No gender differences were detected for frugality ($p = .61$).

Prediction of money usage. To test the validity of the three economic attitude measures in an economic situation, each was correlated with how participants reported they would spend the imaginary $100 windfall. As reported in the top portion of Table 4, frugal subjects expected to spend less money buying stuff for themselves, to give more to charity, and to save more. Materialistic subjects expected to spend more money buying stuff, to give less to charity, and to save less. Finally, generous subjects reported that they would buy less stuff, give more to charity, and spend more on gifts for others.

Relations to environmental resource behaviors. The three economic variables also related to positive environmental behaviors (e.g., reusing paper, using less water while showering). Frugality and generosity were each positively correlated with such behaviors, whereas the reverse was true for materialism.

Relations to personal well-being. The economic variables also related to several indices of personal well-being. Generosity was associated with more happiness and higher self-esteem. Materialism related to lower happiness and self-esteem and to more anxiety. Finally, frugality was associated with higher self-esteem; no evidence was found, however, to support Tatzel's (2002) predicted quadratic relationship between frugality and well-being.

Risk behavior. Frugality was associated with less cigarette smoking and less fighting. Generous students reported less engagement in all four of the risk behaviors (i.e., smoking, drinking alcohol,

fighting, and getting into trouble at school). Materialistic subjects reported more use of alcohol and more frequent fights.

Regressions onto the economic attitude measures

Finally, in order to determine whether the three economic attitude measures were redundant with each other or whether they each had independent predictive abilities, each dependent variable was simultaneously regressed onto frugality, materialism, and generosity. Because of the relatively large age range of this sample, age was also entered as a control variable.

These results are reported in Table 5. Frugality was an independent and significant predictor of: spending little money on oneself and saving more money in the imaginary windfall; engaging in positive environmental behaviors; having high self-esteem; and not smoking cigarettes. Generosity was independently associated with: giving more money to charity in the imaginary windfall; engaging in more positive environmental behaviors; being happier and having higher self-esteem; and less frequent alcohol usage, fighting, and trouble at school. Finally, materialism related to: a desire to spend more on oneself and to save less in the imaginary windfall; less frequent positive environmental behaviors; lower happiness and self-esteem scores; and greater anxiety.

Discussion

The results of this study suggest that the three measures of economic attitudes developed herein bear promise for future research. Each measure was composed of four items comprising a single factor, demonstrated sufficient internal reliability, had relatively normal distributions, and related predictably to a number of variables chosen for the purposes of establishing the measures' construct validity.

Overview of results

As expected, materialism was associated with less generosity, but frugality was unrelated to either materialism or generosity, supporting their conceptual independence. Further, each economic attitude predicted its corresponding use of money in an imaginary windfall scenario. Those scoring high in frugality restrained themselves by using less money to buy themselves things and by saving more, whereas the reverse pattern was discovered for those scoring high in materialism. Generosity, in contrast,

predicted how much individuals were willing to donate to church and charity. These results thus provide both predictive and differential validity for the measures.

Relationships with demographic features also support the measures' validity. Consistent with past research, females were more generous than were males, males were more materialistic than were females, and the genders did not differ in frugality. Concerning age, the results were interesting, and somewhat unsettling. Despite the fact that cognitive maturation should allow for greater financial restraint and concern for others, older children were less frugal and less generous than were younger children. These results may indicate that children are being successfully socialized into the consumer beliefs that one should buy what one wants when one wants it, and that they should keep their possessions to themselves, rather than share them. While this might be good news from the perspective of marketers and those who hope to indoctrinate the next generation into a consumer mentality that will support the growth of the U.S. economy, other results suggest numerous problems associated with such "successful" economic socialization.

Specifically, even after controlling for age and the effects of the other economic attitudes (see Table 5), those low in frugality reported lower self-esteem, more use of cigarettes, and increased incidences of fighting with others. Those low in generosity reported being less happy, having lower self-esteem, drinking more alcohol, and getting into more fights and more trouble at school. Those high in materialism reported less happiness, more anxiety and lower self-esteem.

There are additional costs as well. As shown in Table 5, each of the three economic attitudes bore independent associations with subjects' reports of resource usage in the last few months. Subjects low in frugality or generosity, or high in materialism, were unlikely to engage in relatively simple behaviors such as: turning off electric lights in unused rooms; reusing aluminum foil, plastic baggies, and paper; saving water while bathing or brushing one's teeth; and walking or bicycling instead of driving in a car. Americans currently consume resources at an unsustainable rate that may be irrevocably damaging the biosphere (Winter, in press). The present results suggest that the economic attitudes of frugality, generosity, and materialism play at least some role in such activity.

Limitations and future research

Results indicate that researchers interested in tracking trends in these three attitudes, or in better understanding various dynamics concerning individual differences in frugality, generosity, and materialism, might fruitfully use these three short measures. However, there are three glaring weaknesses of the present study which future research would do well to remedy. The first concerns the nature of the sample. Although its size was adequate for the factor analyses conducted, and it was heterogeneous with regard to gender, age and parental education, it was extremely homogenous both geographically and racially. All students were from a rural school district in Western Illinois and almost all were Caucasian. Thus, the structure of the economic attitude measures and/or their relations to other variables may not hold for children and adolescents who live in urban or suburban settings, for those outside the Midwest, and for those who are not Caucasian. Future research should investigate these possibilities.

The second important weakness of the present study is that all measures were self-report in nature. Future research should use a variety of different methods to explore the validity of the economic attitude measures. Will they predict actual rather than imagined economic and ecologically-relevant behavior? Will they relate to diary rather than retrospective measures of happiness, drug use, social behavior, and resource use? Will they agree with informants' assessments of subjects' economic attitudes? Answering these and other questions will give social scientists greater confidence in their validity.

The third key weakness of the current study concern its historical fixity; all data were collected in the first two weeks of January, 2003, a particular moment associated with particular economic, global, and local facts. As described in the introduction, frugality, materialism, and generosity are encouraged and modeled to differing extents at different historical times (Shi, 1985). As the years progress, social and economic circumstances will certainly change, and these might have important ramifications for these economic attitudes. For example, research suggests that economic and personal insecurity often increases materialism (Abramson & Inglehart, 1995; Kasser, 2002). Would this also be the case for frugality? Similarly, experimental work suggests that generosity decreases when people feel sad (Underwood,

1977), an emotion which might occur from any number of social events. Further, how might changes in media practices, the increasing commercial use of the Internet, and other unimagined changes in our lives relate to the economic attitudes of children and adolescents? Answers to these questions clearly await tracking how frugality, generosity, and materialism change over time.

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Table 1. Item factor loadings, eigenvalues, percentage of variance accounted for, and Cronbach Alphas of the frugality scale in the entire sample and split by gender and grade level.

Item	Total	Male	Female	Grades 5-8	Grades 9-12
I believe in being careful in how I spend my money.	.72	.74	.69	.75	.72
I control myself to make sure that I get the most from my money.	.72	.72	.74	.70	.74
I am willing to wait on a purchase I want so that I can save money.	.75	.70	.81	.67	.79
There are things I resist buying today so I can save for tomorrow.	.69	.63	.79	.60	.74
Eigenvalue	2.07	1.95	2.30	1.86	2.25
Percentage Variance	51.7%	48.7%	57.6%	46.4%	56.2%
Cronbach's Alpha	.69	.65	.75	.61	.74

Table 2. Item factor loadings, eigenvalues, percentage of variance accounted for, and Cronbach Alphas of the materialism scale in the entire sample and split by gender and grade level.

Item	Total	Male	Female	Grades 5-8	Grades 9-12
I like to own things that impress other people.	.71	.70	.76	.80	.61
My life would be better if I owned things I don't have right now.	.73	.70	.78	.74	.71
It is important to make a lot of money when I grow up.	.69	.73	.58	.72	.68
When I grow up, I want to have a really nice house filled with all kinds of cool stuff.	.72	.74	.68	.62	.81
Eigenvalue	2.03	2.07	1.98	2.10	2.00
Percentage Variance	50.8%	51.8%	49.5%	52.3%	49.9%
Cronbach's Alpha	.68	.69	.66	.70	.66

Table 3. Item factor loadings, eigenvalues, percentage of variance accounted for, and Cronbach Alphas of the generosity scale in the entire sample and split by gender and grade level.

Item	Total	Male	Female	Grades 5-8	Grades 9-12
I enjoy sharing my things with other people.	.57	.51	.68	.74	.46
I enjoy giving things or money to charity.	.78	.79	.74	.77	.79
So long as the job I have helps people, it doesn't matter how much it pays.	.82	.84	.77	.79	.83
It is really important to me that I work to make the world a better place.	.80	.82	.74	.81	.78
Eigenvalue	2.24	2.27	2.15	2.40	2.12
Percentage variance	56.0%	56.7%	53.7%	60.1%	53.1%
Cronbach's Alpha	.74	.74	.71	.78	.70

Table 4. Pearson correlations between the three economic attitude variables and dependent variables.

Item	Frugality	Materialism	Generosity
Imaginary Windfall			
Stuff	-.25**	.28**	-.28**
Charity	.14*	-.19**	.44**
Gift	-.05	-.10	.15*
Save	.21**	-.17*	-.02
Environmental Behavior	.23**	-.21**	.23**
Well-being			
Happiness	.08	-.22**	.22**
Anxiety	-.11	.27**	-.11
Self-esteem	.19**	-.21**	.25**
Risk Behavior			
Cigarettes	-.25**	.11	-.20*
Alcohol	-.12	.15*	-.37**
Fight	-.15*	.16*	-.21**
School trouble	-.07	.09	-.18**

Note: + = $p < .10$; * = $p < .05$; ** = $p < .01$.

Table 5. Simultaneous regressions of dependent variables onto age, frugality, materialism, and generosity: Betas and R-squared.

Item	Age	Frugality	Materialism	Generosity	R2
Imaginary Windfall					
Stuff	.07	-.20**	.20**	-.17	.16**
Charity	-.27**	.05	-.08	.34**	.27**
Gift	.03	-.07	-.06	.14+	.03
Save	.06	.21**	-.17*	-.09	.08**
Environmental Behavior	.01	.20**	-.14*	.16*	.11**
Well-being					
Happiness	-.02	.04	-.16*	.16*	.08**
Anxiety	.04	-.08	.26**	-.01	.08**
Self-Esteem	.01	.15*	-.15*	.19*	.11**
Risk Behavior					
Cigarettes	.23**	-.20**	.05	-.10	.14**
Alcohol	.35**	-.04	.06	-.26**	.26**
Fight	-.18**	-.13+	.09	-.21**	.10**
School trouble	-.18*	-.06	.02	-.22**	.07**

Note: + = $p < .10$; * = $p < .05$; ** = $p < .01$.