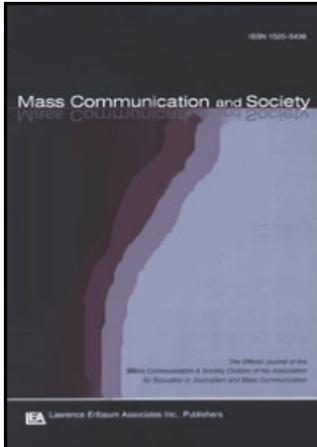


This article was downloaded by:[Universidad Granada]
On: 17 July 2008
Access Details: [subscription number 773444453]
Publisher: Routledge
Informa Ltd Registered in England and Wales Registered Number: 1072954
Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Mass Communication and Society

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t775653676>

Shop 'til We Drop? Television, Materialism and Attitudes About the Natural Environment

Jennifer Good^a

^a Brock University.

Online Publication Date: 01 August 2007

To cite this Article: Good, Jennifer (2007) 'Shop 'til We Drop? Television, Materialism and Attitudes About the Natural Environment', *Mass Communication and Society*, 10:3, 365 — 383

To link to this article: DOI: 10.1080/15205430701407165

URL: <http://dx.doi.org/10.1080/15205430701407165>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article maybe used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

Shop 'til We Drop? Television, Materialism and Attitudes About the Natural Environment

Jennifer Good
Brock University

Cultivation theory research exploring the links between television viewing and attitudes about the natural environment has found evidence that heavier viewers of television are more apathetic about environmental issues than their lighter viewing counterparts. Why this relationship occurs has not, however, been explored. The current research, based on a mail survey sent to a 1,000-person national random sample and a 1,000-person random sample of a national environmental organization, finds that the explanation for the relationship between television and a lack of concern for the natural environment may be explained by materialism. Materialism is found to mediate the relationship between television viewing and attitudes about the natural environment. This finding offers important insights not only into our understanding of cultivation theory but also into our understanding of our relationship with the natural environment at a time when such information has perhaps never been more essential.

“Human activity is putting such a strain on the natural function of Earth that the ability of the planet’s ecosystems to sustain future generations can no longer be taken for granted.” Thus concluded the Board of the Millennium Ecosystem Assessment, initiated by United Nations secretary-general Kofi Annan in 2001 and released in March 2005. The researchers, more than 1,300 experts from around the world, had been given the task of assessing the “consequence of ecosystem change for human well-being and the scientific basis for actions needed to enhance the conservation and sustainable use of those systems and their contributions to human well-being” (preface; Millennium Ecosystem Assessment, 2005). The assessment’s conclusions can be added to a long list of research that increasingly shows concern for the ability of the planet to sustain life on the planet (i.e., see the United Nations Environment Program at <http://www.unep.org>). As such, research that

speaks to how individuals form their sense of relationship with the natural environment has never been more essential.

One way that researchers have explored the creation of attitudes about the natural environment has been to look at the possible role that television viewing plays in the formation of those attitudes. This cultivation theory research has found that there is a correlation between television viewing and a sense of apathy (lack of concern, inability to make a change, etc.) regarding environmental issues (Good & Shanahan, 2002; Shanahan, 1993; Shanahan & McComas, 1999; Shanahan, Morgan, & Stenbjerre, 1997). Meanwhile, content analyses have found a dearth of environmental programming in prime-time television (McComas, Shanahan, & Butler, 2001; Shanahan & McComas, 1999)—the genre of television that cultivation researchers most often study, and the bulk of television that people consume (Shanahan & Morgan, 1999). This *lack* of environmental television programming has raised questions regarding why television viewing is related to attitudes about the environment if television does not contain programming related to the environment. One explanation is that perhaps it is *because of* this lack of coverage, or “symbolic annihilation” (Shanahan & Morgan, 1999) of environmental content, that television viewing is related to environmental attitudes (i.e., people are unable to become concerned about or motivated to take action if they know nothing about the issues). The discussion of the relationship between television and environmental attitudes in the relative absence of environmental themes in prime-time television programs raises the possibility that the link is not directly between television viewing and environmental attitudes; perhaps there is a mediating variable (Baron & Kenny, 1986).

Recent research has investigated the relationship between television viewing and materialism and found that heavier television viewers are more likely to be materialistic than lighter viewers (i.e., Shrum, Burroughs, & Rindfleisch, 2005). In light of such findings, it is certainly reasonable to hypothesize that pro-environmental attitudes (i.e., concern that resources are being depleted; that human activity is affecting the quality of the air, water, and soil; that ecosystems being destroyed and species becoming extinct) might be incompatible with materialistic attitudes (i.e., the more possessions one owns, the better and more successful one is; we are what we buy). The study presented here explores whether materialism may be mediating the relationship between television viewing and environmental attitudes as well as the possible implications for such mediation.

TELEVISION AND ATTITUDES ABOUT THE NATURAL ENVIRONMENT

Shanahan and Morgan (1999) presented the underlying tenet of cultivation theory in this way: “Watching a great deal of television will be associated with a tendency

to hold specific and distinct conceptions of reality, conceptions that are congruent with the most consistent and pervasive images and values of the medium" (p. 3). Cultivation research can be simplistically broken into two steps. In the first step, a content analysis is done to determine the composition of the world portrayed on television. In the second step, a comparison is made to determine whether heavy viewers are more likely than their light-viewing counterparts to draw on the television world to answer questions about the real world.

In their content analysis of environmental programming, McComas et al. (2001) found that only 14% of the nonnews programming—in samples taken between 1991 and 1997—contained environmental "episodes" (an episode was defined as "any discrete portion of an entertainment program involving spoken words or physical action in which environmental issues were specifically implicated or discussed"; Shanahan & McComas, 1999, p. 151). McComas et al. also found that the environment was an "outstanding theme," or focus of the program, in just 2% of the programs.

Environmental cultivation research (research exploring the links between television viewing and attitudes about the natural environment) has found that heavier television viewers tend to have less concern for environmental issues and feel less agency in addressing environmental issues than their lighter viewing counterparts. Shanahan's (1993) early research in this area, based on a college student sample, found that heavier viewers were less likely to rate the environment as an issue of concern (relative to other issues) and less likely to think that they could have an impact on environmental issues than lighter viewers (see also Shanahan & McComas, 1999). Research based on the 1993 and 1994 General Social Surveys (Shanahan & McComas, 1999; Shanahan et al., 1997) found a relationship between heavier television viewing and heightened fear about the environment.¹ Good and Shanahan (2002), making use of data from the 2000 General Social Survey, found that heavier television viewing was related to lower levels of environmental "activism" (joining an environmental organization, signing an environmental petition) and lower scores on an environmental "affirmation" scale (responses to statements such as "There are more important things to do in life than protect the environment.").

¹Cultivation research focuses on exposure to entertainment (i.e., nonnews programming) as this is the programming most people watch most of the time. However, the way in which the environment is covered by the news may help to explain the relationship between heavier television viewing and a "fear response" to environmental issues. The environment as a theme in news coverage has been somewhat more prevalent than coverage of the environment in nonnews programming. Shanahan and McComas (1999) found that the news contained environmental stories in 30% of sampled stories in the early 1990s but dropped to less than 10% in the mid-1990s (compared to the environment as the outstanding theme in 2% of fictional programming). Therefore, environmental coverage in the news is much more prevalent, and news coverage presents issues in a narrative and cyclical fashion that tends to highlight the sensational (perhaps fear-inducing) aspects of the story but may not allow for the expression of the complexity and longevity of many environmental issues (Shanahan & McComas, 1999).

Therefore, based on previous environmental cultivation research, there is the following hypothesis.

- H1: Television viewing will be related to lower levels of concern about the natural environment.

TELEVISION AND ATTITUDES ABOUT MATERIALISM

At a fundamental level, commercial television exists because of an arrangement between those who create television, those who wish to advertise on television, and those who view television. Television assembles audiences, and advertisers buy those audiences to sell goods and services (Leiss, Kline, & Jhally, 1990). According to the American Association of Advertising Agencies (2003), explicit sales pitches are made for products and services during approximately 17 to 20 minutes of every hour of television broadcasting. Ewen (1976) explored the role of advertising in the creation of consumer culture and pointed out that “television carried the consumer imagery into the back corners of home life. . . . On television . . . corporately produced goods and services were being reinforced as the cohesive fiber of daily life and as objects of fantasy” (pp. 209–210). Advertising content is the most obvious way in which messages about materialism reach television viewers and, not surprisingly, researchers—using both qualitative (i.e., Kunkel, 2001; Zinkhan, 1994) and quantitative (i.e., Richins, 1987; Yoon, 1995) approaches—have found positive relationships between exposure to television advertising and favorable attitudes about materialism.

It is not only via advertising, however, that television transmits information about materialism. Television programming has also been found to contain positive images, narratives, and messages about materialism. Cook (1997) used a content analysis to explore materialism in three home-shopping cable channels. His research detailed how materialism is encouraged and “sold” to viewers of that genre. Ferraro and Avery (2000) undertook a content analysis of prime-time programming on the four major U.S. television networks (ABC, CBS, NBC, and Fox) to look at the types of products that are shown and/or talked about during “nonadvertising” programming.² The researchers found that the mean number of brand appearances (verbal or visual) ranged from 18.4 per 30-minute segment for NBC to 7.5 per 30-minute segment for CBS. Sports had the highest number of brands per 30-minute period (58.2) followed by feature magazines (40.6) and news programming (36). “Tone” of the program was also tracked and the highest number of brands per 30-minute period by tone—at 35.5—is “mostly informative.”

²The sample consisted of “brands appearing in situational comedies, made-for-television movies, dramas/series, comedy skit/variety, cartoons and movie reruns” (Ferraro & Avery, 2000, p. 6).

Other research has looked at the relationship between types of television programming/viewing demographics and individuals' materialism-related understandings of the world. For example, in a series of studies, Shrum and his colleagues (O'Guinn & Shrum, 1997; Shrum, Wyer, & O'Guinn, 1998) found that heavier viewers of soap operas were more likely to overestimate rates of societal wealth and consumption than lighter viewers. Brand and Greenberg (1994) found some positive relationships between school children's exposure to Channel One³ and materialistic attitudes. Churchill and Moschis's (1979) early research found a positive relationship between adolescents' television viewing and their materialism. (Easterlin & Crimmins, 1991, also used a sample of teenagers/young adults to look at overall television use and materialism, but their secondary data analysis found inconclusive results.)

Research from other parts of the world has found similar relationships between television and attitudes about materialism. Reimer and Rosengren (1990) found that Swedes who watch fiction/entertainment programming are more likely to have materialistic attitudes, whereas those Swedes who watch nonfiction—news, “high culture”—are more likely to have nonmaterialist attitudes. Cheung and Chan (1996), using a sample from Hong Kong, found a positive relationship between television and materialism. Sirgy et al. (1998) explored the relationship between television viewing and life satisfaction (including materialism) for five countries (China, Turkey, Australia, Canada, and the United States). The pooled sample (the five national samples combined), as well as the Chinese, Australian, and U.S. household samples, showed a positive relationship between overall television viewing and attitudes about materialism (the Turkish sample was nonsignificant, whereas the Canadian sample was negative and significant).

Finally, two cultivation studies with American samples yielded similar results. Harmon (2001), using data from the General Social Survey, found that respondents “who regarded nice things as important” and who “regarded a high income as important” were heavier television viewers.⁴ Shrum et al. (2005), using a survey administered to an American national sample of adults, found a strong positive relationship ($\beta = .37, p < .001$) between television viewing and materialism.

Therefore, based on previous television and materialism research, the following hypothesis is presented:

H2: Television viewing will be positively related to materialism.

³Channel One is a commercial television-based enterprise that shows students a daily 10-minute news broadcast at school (with several minutes of commercials). In return for allowing the news broadcast and commercials to be shown, the school receives monetary and material incentives from Channel One.

⁴The other sample, based on a consumer marketing survey, did not yield significant results.

MATERIALISM AND ENVIRONMENTALISM

Environmentalism and materialism are, arguably, incompatible. As Schumacher (1973) succinctly stated,

An attitude of life which seeks fulfillment in the single-minded pursuit of wealth—in short, materialism—does not fit into this world, because it contains within itself no limiting principle, while the environment in which it is placed is strictly limited. (p. 30)

Or, as Kasser (2002) offered, “we must recognize the place of materialism in the equation [of what causes environmental degradation], as substantial evidence shows that choices arising from a materialistic value orientation are often unconcerned with, or actively hostile toward, nature” (p. 92). Environmentalism is built upon a belief or understanding that the earth’s resources are ultimately finite and that the ecosystems that compose the earth also have inherent value outside of what they are able to provide humans (McKibben, 1989). Conversely, materialism “represents a mind-set or constellation of attitudes regarding the relative importance of acquisition and possessions and their acquisition are at the forefront of personal goals that dictate ‘ways of life’” (Richins & Dawson, 1992, p. 307). Or, as Belk (1985) offered, “[Materialism is] the importance a consumer attaches to worldly possessions. At the highest levels of materialism, such possessions assume a central place in a person’s life and are believed to provide the greatest sources of satisfaction and dissatisfaction” (p. 291).

In their national study on Americans’ environmental attitudes, Kempton, Boster, and Hartley (1995) found that survey respondents from the general public, as well as selected environmental and industry groups, felt that “a ‘less materialistic way of life’ will help the environment” (p. 55) and that this incompatibility of materialism and environmentalism is one of three general precepts that guide Americans in thinking about the environment. Dunlap, VanLiere, Mertig, and Jones (2000) made a case for the content validity of their environmental attitude scale—the new environmental paradigm (NEP) scale —by pointing out that their well-researched and tested scale parallels Kempton et al.’s findings. They summarized Kempton et al.’s three precepts as

1. Nature is a limited resource upon which humans rely; 2. Nature is balanced, highly interdependent and complex and therefore susceptible to human interference; and 3. Materialism and lack of contact with nature have led our society to devalue nature. (p. 429)

They highlighted that their scale is based on concepts of “balance of nature, limits to growth and human domination over nature” (p. 429).

In *The High Price of Materialism*, Kasser (2002) succinctly reviewed some of the academic research that has shown this disconnect between materialism and environmentalism. From Saunders and Munro's (2000) research that found that "Australians who strongly expressed materialistic values also reported negative attitudes toward the environment" (p. 92) to Schwarz's (1992, 1994, 1996) research that showed that "across many cultures, values for wealth oppose concerns to 'protect the environment'" (p. 92), Kasser illustrated that the two value systems are not compatible. He concluded, "When materialistic values drive our behavior, everyone loses, both humans and the other species who inhabit the 'resource' and call it 'home'" (p. 95).

Based on the aforementioned research, this is the third hypothesis:

H3: Environmental attitudes will be negatively related to materialism.

Finally, if television is positively related to materialism and materialism is negatively related to environmental attitudes, then a question can be asked regarding the "role" of materialism in these relationships. A mediator variable *explains* the relationship between two other variables (Baron & Kenny, 1986). As such, perhaps materialism explains the relationship between television viewing and environmental attitudes. Based on this, the following research question is asked:

RQ1: Does materialism mediate the relationship between television and attitudes about the natural environment?

An answer to this question will provide insight regarding a possible explanation for the cultivation findings of a relationship between heavier television viewing and "less positive" attitudes regarding the natural environment—in the relative absence of environmental content on television. The answer might also contribute to a discussion of how we can live in a more sustainable manner on the planet.

METHODS

Data Gathering

To investigate the hypotheses and research question, a survey was administered to two national mailing lists: One list was a national random sample of 1,000 American names and addresses purchased from Survey Sampling (a company that specializes in survey list creation) and the other list was a national random sample of 1,000 members' names and addresses (via an Nth selection process) provided by the National Parks Conservation Association. A six-page survey was sent to the two lists with a response rate of 34% ($n = 295$) for the general list and a response

rate of 49% ($n = 485$) for the environmental list. (Response rates are explored in the Limitations and Future Research section.)

The mean age for the general subsample is 56, and the mean age for the environmentalist sample is 63. Fifty-one percent of the environmentalist subsample is female, whereas the general sample is weighted toward men, with 31% female. Ninety-seven percent of the general subsample and 98% of the environmentalist subsample have English as their first language. The general subsample has "some college" as the mean level of schooling, whereas the environmentalist subsample has a 4-year college education as the mean. The income for the two lists is similar, with the mean for both falling in the \$36,000 to \$55,000 range. The majority of the respondents from the environmentalist subsample are either professionals (44%) or retired (45%), whereas the general subsample has a similar percentage of professionals (45%), with 22% retired and 14% in manual and clerical positions. Respondents from both subsamples reside predominantly in the suburbs (54% for the general subsample and 57% for the environmentalist subsample), but 26% of the general subsample resides in rural areas and 20% in urban areas. In the environmentalist subsample, urban residents compose 25% and rural residents 18%.

Measures and Reliabilities

All of the scales used in this study are established scales that have been developed, tested, and used in previous research.

Environmental attitudes. Dunlap and VanLiere's NEP scale was originally published in 1978 and was retested and reconfigured in 2000 to provide a more comprehensive scale with gender-neutral language and balanced statements (i.e., the original scale had very few antienvironmental statements). The new scale consists of 15 statements that tap into five facets of an ecological worldview: "reality of limits to growth, anti-anthropocentrism, fragility of nature's balance, rejection of exemptionalism (i.e. rejection that humans are exempt from the rest of the environment) and possibility of an eco-crisis" (Dunlap & VanLiere, 2000, p. 432). The scale uses 5-point Likert responses.

The Cronbach alpha for these 15 statements in this study is $\alpha = .84$. (Dunlap & VanLiere found $\alpha = .83$). Based on the strong reliability and other tests of internal consistency, Dunlap and VanLiere (2000) suggested that the scale can reasonably be treated as a single measure. This is what has been done in the study presented here. Treating a multidimensional scale as a single construct allows for a cohesive look at complex concepts like environmentalism or materialism (i.e., multidimensional scales such as these are additive meaning that high scores represent strength of the construct across the dimensions).

Materialism. Richins and Dawson's (1992) 18-point Material Values Scale has been used in the past for research on television's cultivation of materialism (see

Shrum et al., 2005) and is used in the research presented here. The scale taps into three related aspects of materialism: "acquisition centrality, the role of acquisition in the pursuit of happiness and the role of possessions in defining success" (Richins & Dawson, 1992, p. 314). The scale has previously had a high reliability (Shrum et al., 2005, found $\alpha = .84$) and showed similar strong reliability in the study presented here ($\alpha = .85$). Richins and Dawson presented reliabilities for each of the three aspects of materialism ($\alpha = .82$ acquisition centrality; $\alpha = .86$ acquisition in pursuit of happiness; $\alpha = .82$ possessions in defining success) and for the entire 18 items ($\alpha = .87$). As with the NEP scale, the materialism scale for the study presented here was treated as a single construct.⁵

Television viewing. To address past concerns that participants have difficulty quantifying how much television they watch, but are able to say whether they watch "a lot," Shrum and his colleagues (2005) developed a six-statement television-viewing Likert scale (see the appendix). This scale was used in the research presented here. Shrum et al. (2005) found that their scale had a high reliability ($\alpha = .87$) and there is a similarly strong reliability in this study ($\alpha = .86$). This scale has been shown to correlate well with more "traditional" measures of television viewing (Burroughs, Shrum, & Rindfleisch, 2001; Good, 2003).

RESULTS

Environmental Cultivation

Past cultivation research has indicated that heavier television viewing is associated with less concern about the natural environment (Good & Shanahan, 2002; Shanahan, 1993; Shanahan & McComas, 1999; Shanahan et al., 1997). Therefore, to test the first hypothesis that the current data would also reveal a relationship between heavier viewing and less concern about the natural environment, a regression model was used with the NEP scale as the dependent variable. The independent variables describing which research population the group came from (i.e., general or environmentalist subsample) were placed in the first block (to account for differences in the two survey populations), whereas demographic variables (sex, age, income, education, area where one lives, language)⁶ were entered in the second block. Television viewing was entered in the third block.

Sample ($\beta = .4, p < .001$) and sex ($\beta = .15, p < .001$) were both positive predictors of environmental attitudes (i.e., women and respondents from the environmen-

⁵Richins and Dawson (1992) tested their Material Values Scale for susceptibility to social desirability bias. Correlations between their items and a social desirability measure led them to conclude that "social desirability was not a problem for these measures" (p. 310). Other research has shown that social desirability is related to materialism (i.e., Mick, 1996).

⁶These six demographic variables were used as controls in all regression analyses.

talist subsample were more likely to have concern for the environment). In support of H1, that television viewing would be negatively related to concern about the natural environment, scores on the television viewing scale were negative predictors of environmental concern for the entire sample ($\beta = -.07, p < .05$).

Further regression analysis of television viewing and environmental attitudes based on the two subsamples revealed that television viewing is not a predictor of environmental attitudes for the general subsample, but it is a negative predictor for the environmentalist subsample ($\beta = -.11, p < .01$). In addition, sex is not a predictor of environmental attitudes for the environmentalist sample, but it is a positive predictor of environmental attitudes for the general sample ($\beta = .21, p < .001$) such that women in the general sample are more likely than men to be concerned about the environment (see Table 1).

The second hypothesis predicted that television viewing would be positively associated with materialism. A regression analysis was conducted with materialism as the dependent variable, sample in the first independent block, control variables in the second block, and television viewing in the third block. The relationship between television viewing and materialism was positive and significant for the entire database ($\beta = .24, p < .001$), the general sample ($\beta = .21, p < .001$), and the environmentalist sample ($\beta = .25, p < .001$). This supports the second hypothesis. Both samples also show that sex and age are associated with materialism such that women and older people are less likely to be materialistic (see Table 2).

The third hypothesis predicted that materialism would be a negative predictor of environmental attitudes. A regression analysis was conducted with environmen-

TABLE 1
Regression Analysis: Television Viewing and Environmental Attitudes
(Hypothesis 1)

<i>Independent Variable</i>	<i>Dependent Variable</i>	β	<i>t</i>	<i>p</i>
Entire database				
Television viewing	Environmental attitudes	-.07	-1.9	.05
Sex	Environmental attitudes	.14	-4.1	.001
General sample				
Television viewing	Environmental attitudes	<i>ns</i>	<i>ns</i>	<i>ns</i>
Sex	Environmental attitudes	-.21	3.5	.001
Environmental sample				
Television viewing	Environmental attitudes	-.11	-2.5	.01

Note. All regressions were run controlling for sex (1 = male, 2 = female), age, education (1 = junior high/middle school to 6 = postgraduate work), income (1 = less than \$10,000 to 5 = more than \$76,000), language (1 = English as first language, 2 = other first language), and area lived in (1 = urban, 2 = suburban, 3 = rural). Survey (1 = general sample, 2 = environmentalist sample) was also controlled when the entire database was used and was a significant predictor in the aforementioned analysis ($p < .001$).

TABLE 2
Regression Analysis: Television and Materialism (Hypothesis 2)

<i>Independent Variable</i>	<i>Dependent Variable</i>	β	<i>t</i>	<i>p</i>
Entire database				
Television viewing	Materialism	.24	7.2	.001
Sex	Materialism	-.11	-3.2	.001
Age	Materialism	-.18	-5.1	.001
General sample				
Television viewing (scale)	Materialism	.21	3.9	.001
Sex	Materialism	-.12	-2.1	.05
Age	Materialism	-.26	-4.5	.001
Environmental sample				
Television viewing (scale)	Materialism	.25	5.8	.001
Sex	Materialism	-.11	-2.5	.01
Age	Materialism	-.11	-2.6	.01
School	Materialism	.09	1.9	.05

Note. All regressions were run controlling for sex (1 = male, 2 = female), age, education (1 = junior high/middle school to 6 = postgraduate work), income (1 = less than \$10,000 to 5 = more than \$76,000), language (1 = English as first language, 2 = other first language), and area lived in (1 = urban, 2 = suburban, 3 = rural). Survey (1 = general sample, 2 = environmentalist sample) was also controlled when the entire database was used and was a significant predictor ($p < .001$) in the aforementioned analysis.

tal attitudes as the dependent variable, sample in the first independent block, control variables in the second block, and materialism in the third block. The relationship was negative for the entire database ($\beta = -.15$, $p < .001$), the general subsample ($\beta = -.17$, $p < .01$), and the environmentalist subsample ($\beta = -.19$, $p < .001$). This supports the third hypothesis (see Table 3).

The research question asked whether materialism mediates the relationship between television and environmental attitudes such that higher levels of television viewing is related to greater materialism and materialism is related to less positive environmental attitudes. The test for mediation was based on Baron and Kenny's (1986) recommended method. Three regressions were run, and in each regression survey group was entered as an independent variable in the first block and sex, age, school, income, language, and area of residence in the second block. In the first regression, NEP scores were entered as the dependent variable and television viewing was added as an independent variable in the third block. Television viewing was a significant negative predictor ($\beta = -.07$, $p < .05$) as we have seen in an earlier analysis. In the second regression, materialism was the dependent variable and television viewing was added as an independent variable in the third block. Television viewing was a significant positive predictor of materialism ($\beta = .24$, $p < .001$), again, as we have seen in an earlier analysis.

TABLE 3
Regression Analysis: Materialism and Environmental Attitudes
(Hypothesis 3)

<i>Independent Variable</i>	<i>Dependent Variable</i>	β	<i>t</i>	<i>p</i>
Entire database				
Materialism	Environmental attitudes	-.15	-4.5	.001
Sex	Environmental attitudes	-.13	3.7	.001
Age	Environmental attitudes	-.07	-2.0	.05
General sample				
Materialism		-.17	-3.0	.01
Sex		-.19	3.1	.01
Environmental sample				
Materialism		-.19	-4.1	.001

Note. All regressions were run controlling for sex (1 = male, 2 = female), age, education (1 = junior high/middle school to 6 = postgraduate work), income (1 = less than \$10,000 to 5 = more than \$76,000), language (1 = English as first language, 2 = other first language), and area lived in (1 = urban, 2 = suburban, 3 = rural). Survey (1 = general sample, 2 = environmentalist sample) was also controlled when the entire database was used and was a significant predictor ($p < .001$) in the aforementioned analysis.

In the third regression, environmental attitudes were the dependent variable, materialism was an independent variable entered in the third block, and television viewing was an independent variable entered in the fourth block. Materialism was a negative predictor of environmental attitudes ($\beta = -.15$, $p < .001$), but television no longer was. According to Baron and Kenny (1986), the significance of television viewing in the first regression and the loss of significance when materialism was controlled for indicate that materialism fully mediates the relationship between television and environmental attitudes. Therefore, the answer to the research question is that materialism does mediate the relationship between television and attitudes about the natural environment (see Table 4).

DISCUSSION

The Millennium Assessment report, requested by United Nations Secretary-General Kofi Annan, provided a detailed and exhaustively researched account of how the Earth's ecosystems are being threatened by human activity (Millennium Ecosystem Assessment, 2005). Although there have certainly been other points in history when people have sounded the "environmental alarm bell," issues like climate change (see the Intergovernmental Panel on Climate Change) give urgency to the current need to address the impact humans are having on the planet.

TABLE 4
 Mediating Role of Materialism on the Relationship Between Television
 and Environmental Attitudes (Research Question 1)

<i>Independent Variable</i>	<i>Dependent Variable</i>	β	<i>t</i>	<i>p</i>
First regression				
Television viewing	Environmental attitudes	-.07	-1.9	.05
Second regression				
Television viewing	Materialism	.24	7.2	.001
Third regression				
Television viewing	Environmental attitudes	-0.3	-.89	.34
Materialism		-.15	-.15	.001

Note. All regressions were run controlling for sex (1 = *male*, 2 = *female*), age, education (1 = *junior high/middle school* to 6 = *postgraduate work*), income (1 = *less than \$10,000* to 5 = *more than \$76,000*), language (1 = *English as first language*, 2 = *other first language*), and area lived in (1 = *urban*, 2 = *suburban*, 3 = *rural*). Survey (1 = *general sample*, 2 = *environmentalist sample*) was also controlled when the entire database was used.

In light of this, the research presented here performs two functions. First, it offers a possible explanation for why television viewing, in light of its absence of environmental programming, might be related to apathy regarding the issues that face the natural environment. Second, the research offers empirical evidence that there is, perhaps, a very high price that we all pay for our society's, and some would argue our global, often uncritical love of television—and the materialism that television fosters.

The results of this study add to past research (Good & Shanahan, 2002; Shanahan, 1993, 1994; Shanahan & McComas, 1999; Shanahan et al., 1997) that has shown a positive main effect relationship between television viewing and a lack of concern for the natural environment. Or, in the case of the research presented here, that when people are heavy viewers of television, they are less likely see the environment's limits to growth, the fragility of nature's balance, and the possibility of environmental crisis. Instead, heavier viewers are more likely than lighter viewers to feel that humans are isolated from the rest of the environment and apply anthropomorphic thinking to the nonhuman world (Dunlap & VanLiere, 2000).

The results also indicate that the relationship between television viewing and this lack of concern for the natural environment is particularly pronounced for those who have environmental "predispositions" (i.e., the environmentalist subsample). Does this mean that television viewing erodes all pro-environmental attitudes? Clearly not. The environmentalist sample was a random sample of members of the National Parks Conservation Association, so even the heaviest viewing members of this sample are still environmentally involved. The results could suggest that those who might otherwise have had even stronger pro-environmental at-

titudes stand the most to “lose” by exposing themselves to television. This finding supports the cultivation theory-based concept of *mainstreaming* (Shanahan & Morgan, 1999), in which television’s messages function as a center of gravity pulling attitudes and values that are not in line with television-based attitudes/values toward its center. Therefore, the entertainment programming they are watching is having a particularly strong “gravitational pull” on them (i.e., stronger than the pull on a viewer who does not have pro-environmental leanings).

Such environmental cultivation findings—and mainstreaming-type effects—have previously been found (Good & Shanahan, 2002; Shanahan, 1993; Shanahan & McComas, 1999; Shanahan et al., 1997). What was of particular interest in this article was *why* these relationships exist. Analyses of television’s environmental content have revealed that entertainment programming—the bulk of what people watch—has very little environmental content (McComas et al., 2001). In light of this, cultivation researchers have proposed that their findings (i.e., that heavier viewers of television are more likely to be apathetic about environmental issues) may be due to this very absence of environmental content or “symbolic annihilation” (Shanahan & McComas, 1997).

The results of the research presented here offer another way of understanding why there might be a relationship between television viewing and environmental apathy: materialism. Materialism has been shown to mediate the relationship between television viewing and attitudes about the environment. Although such a relationship has been proposed (i.e., Kasser, 2002), the research presented here provides an empirical test of the proposition.

Therefore, in light of this research, and at a time when the planet is arguably under strain to accommodate humans’ often materialistic and wasteful lifestyles, we are encouraged to ask critical questions about the messages we receive from television. Perhaps we need to think of heavy television viewing as not just personally problematic (i.e., higher television is related to higher levels of materialism and higher materialism is associated with lower well-being; see Kasser, 2002) but also problematic for the planet. As Kasser offered, “The ultimate problem implied by these [materialism] studies is that if we continue to be driven by selfishness and materialism, ecological disaster awaits us” (p. 92).

Maybe the time has come when we should view television as a social drug, much the way we view alcohol consumption: enjoyable in small doses but particularly problematic in large sustained quantities, and positively dangerous for the young.⁷ Kasser (2002), in his extensive overview of the academic research on materialism, concluded by saying,

⁷As Kasser (2002) pointed out, “the American Academy of Pediatrics recommends that children under two years of age view no television at all” (p. 105).

To the extent we can break, both personally and collectively, some of the vicious cycles brought about by a focus on materialism, we will be able to improve the quality of life for ourselves, our families, our communities and our planet. (p. 105)

Rethinking our relationship with television may play a large role in breaking such vicious cycles.

Limitations and Future Research

Some of the limitations of this study are inherent in cross-sectional self-administered surveys (i.e., the correlational nature of the surveys means that causality cannot be assumed and the answers were susceptible to social desirability response bias). Shrum et al. (2005) tested the question of whether materialistic people were more drawn to materialistic television programs by experimentally manipulating materialism in television content. The researchers concluded that their data “support[ed] the view that people choose to view television for its general entertainment value and the influence of materialistic content is largely a by-product of this choice” (p. 477)—although they do concede that alternative interpretations of their data are possible. Whether less environmentally concerned people are particularly drawn to television in general, or less “environmentally inclined” television in particular (although, as has been highlighted, most television falls into this category), remains to be studied.

There is also the issue of spuriousness. It is possible that a variable that has not been controlled for (e.g., political affiliation) could explain the relationships found in this study (i.e., perhaps liberals watch less television, are less materialistic, and are more “environmentally friendly” than conservatives). The finding of materialism’s mediation of the television–environmental attitudes relationship would still be noteworthy, but the context in which those relationships exist—and strategies for creating change—would be different from what has been presented here.

It does seem clear that future research exploring the relationship between television viewing and environmental attitude formation would do well to address the issue of causality. Research such as Husemann, Moise-Titus, Podolski, and Eron’s (2003) longitudinal study into the relationship between television viewing and aggressive/violent behavior offers insight into the causal links between elements that cultivation researchers have historically been able to speak about, for the most part, in terms of correlational relationships.

Concerns about social desirability bias and the materialism scale were addressed in the scale’s development. Correlations between their items and a social desirability measure led Richins and Dawson (1992) to conclude that “social desirability was not a problem for these measures” (p. 310). An argument can also be made that if respondents did “lower” their estimates of television viewing and materialism while “raising” their estimates of environmentalism (the socially desir-

able responses), the hypotheses presented in this research would not have been supported. Given that the hypotheses were supported, there is the possibility that if any social desirability was manifest in the answers, the “actual” relationships are in fact that much *stronger*.

Another concern might be that the low response rates leave the data susceptible to nonresponse bias. The reality of data collection today is that response rates have been decreasing over the past decade (Teitler, Reichman, & Sprachman, 2003). Although research has shown that such things as the number of contacts (Schaffer & Dillman, 1998), level of personalization (Schafer & Dillman, 1998), and incentives (Church, 1993) can have a significant positive impact on response rates, the resources were not available in the study presented here for these endeavors. It is clear that nonresponse bias is a problem, but as Teitler et al.’s (2003) research identifies, even when the resources are available and response rates are very high, “significant nonresponse bias remains” (p. 137). The authors point out that research in this area needs to focus less on the money needed to sway individuals to become involved with survey research and more on learning “about the cognitive process underlying survey participation in today’s world” (p. 137).

CONCLUSION

The research presented here is based on attitudinal scales regarding environmentalism and materialism. One question that might be raised is whether these attitudes are related to actual behavioral outcomes. Numerous studies that have made use of the NEP scale have found links between scores on the scale and environmental behaviors. For example, Roberts and Bacon (1997) found that the self-report of purchasing “environmentally friendly” products, reducing energy use, and recycling were all related to various aspects of the NEP. Other researchers (Ebreo, Hershey, & Vining, 1999; Schultz & Zelezny, 1996; Vining & Ebreo, 1992) have also found the NEP to be related to recycling behavior. Schultz and Zelezny (1998) looked at the NEP (as well as other attitudinal measures) and five pro-environmental behaviors (recycling, using public transit, conserving energy, conserving water, purchasing environmentally friendly products) in Mexico, Nicaragua, Peru, Spain, and the United States. The researchers found that scores on the NEP were related to a composite environmental behavior score (minus the public transit) for Mexico, Spain, and (most strongly) the United States.

Similarly, Kasser (2002) provided numerous examples of how materialism is an interplay of values and behaviors. As Kasser pointed out, “materialistic values are not just expressions of unhappiness. Instead, they lead people to organize their lives in ways that do a poor job of satisfying their needs, and thus contribute even more to people’s misery” (p. 28). He also offered that “materialistic values are both a symptom of an underlying insecurity and a coping strategy taken

on in an attempt to alleviate problems and satisfy needs” (p. 42). It would seem that, perhaps even more so than with attitudes about the environment, materialism contains a kind of compulsion to act on the values. Kasser referred to these as the chains of materialism.

Materialistic values are associated with a tendency to feel pressured and compelled, even in behaviors consistent with these values. All of this suggests that, rather than providing paths to freedom and autonomy, people feel chained, pressured and controlled when they focus on materialistic values. (p. 86)

Will a *decrease* in exposure to materialistic messages (i.e., a decrease in television viewing) help to break those chains—and perhaps shift our values to a more sustainable place? The research is waiting to be done; the social movement encouraging such changes cannot begin too soon.

ACKNOWLEDGMENT

An earlier version of this article was presented at the 2003 National Communication Association (Environmental Communication Division) annual conference.

REFERENCES

- American Association of Advertising Agencies. (2003). [News release]. Retrieved June 5, 2003, from http://www.aaaa.org/news/news_releases.
- Baron, R., & Kenny, D. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173–1182.
- Belk, R. (1985). Materialism: Trait aspects of living in the material world. *Journal of Consumer Research*, *12*, 265–279.
- Brand, J. E., & Greenberg, B. S. (1994). Commercials in the classroom: The impact of Channel One advertising. *Journal of Advertising Research*, *34*, 14–24.
- Burroughs, J., Shrum, L. J., & Rindfleisch, A. (2001, October). *Does television viewing promote materialism? Cultivating American perceptions of the good life*. Paper presented at the annual conference of the Association for Consumer Research, Austin, TX.
- Cheung, C., & Chan, C. (1996). Television viewing and mean world value in Hong Kong’s adolescents. *Social Behavior and Personality*, *24*, 351–364.
- Church, A. (1993). Estimating the effect of incentives on mail survey response rates: A meta-analysis. *Public Opinion Quarterly*, *57*, 62–79.
- Churchill, G. A., & Moschis, G. P. (1979). Television and interpersonal influences on adolescent consumer learning. *Journal of Consumer Research*, *6*, 23–35.
- Cook, J. (2000). Consumer culture and television home shopping programming: An examination of the sales discourse. *Mass Communication & Society*, *3*, 373–391.

- Davis, J. A., & Smith, T. W. (1972-2000). *General Social Surveys, 1972-2000* [Machine-readable data file]. Chicago: National Opinion Research Center, producer, 2000; Storrs, CT: The Roper Center for Public Opinion Research, University of Connecticut, distributor. 1 data file (40,933 logical records) and 1 codebook (1,661 pp).
- Dunlap, R. E., & VanLiere, K. D. (1978). The "new environmental paradigm": A proposed measuring instrument and preliminary results. *Journal of Environmental Education, 9*, 10-19.
- Dunlap, R. E., VanLiere, K. D., Mertig, A. G., & Jones, R. E. (2000). Measuring endorsement of the New Ecological Paradigm: A revised NEP scale. *Journal of Social Issues, 56*, 425-442.
- Easterlin, R., & Crimmins, E. (1991). Private materialism, personal self-fulfillment, family life and public interest: The nature, effects, and causes of recent changes in the values of American youth. *Public Opinion Quarterly, 55*, 499-533.
- Ebreo, A., Hershey, J., & Vining, J. (1999). Reducing solid waste: Linking recycling to environmentally responsible consumerism. *Environment and Behavior, 31*, 107-135.
- Ewen, S. (1976). *Captains of consciousness: Advertising and the social roots of the consumer culture*. New York: McGraw-Hill.
- Ferraro, R., & Avery, R. (2000). Brand appearances on prime-time television. *Journal of Current Issues and Research in Advertising, 22*, 1-15.
- Good, J. (2003). *Materialism, Internet use and cognitive processing in television's cultivation of environmental attitudes*. Unpublished doctoral dissertation.
- Good, J., & Shanahan, J. (2002). *Television, the Internet and environmental attitudes*. Unpublished manuscript.
- Harmon, M. (2001). Affluenza: Television use and cultivation of materialism. *Mass Communication & Society, 4*, 405-418.
- Husemann, L., Moise-Titus, J., Podolski, C., & Eron, D. (2003). Longitudinal relations between children's exposure to TV violence and their aggressive and violent behavior in young adulthood: 1977-1992. *Developmental Psychology, 55*, 201-221.
- Kasser, T. (2002). *The high price of materialism*. Cambridge, MA: MIT Press.
- Kempton, W., Boster, J. S., & Hartley, J. A. (1995). *Environmental values in American culture*. Cambridge, MA: MIT Press.
- Kunkel, D. (2001). Children and television advertising. In D. Singer & J. Singer (Eds.), *Handbook of children and the media*. Thousand Oaks, CA: Sage.
- Leiss, W., Kline, S., & Jhally, S. (1990). *Social communication in advertising*. London: Routledge.
- McComas, K., Shanahan, J., & Butler, J. (2001). Environmental content in prime-time network and TV's non-news entertainment and fictional programs. *Society and Natural Resources, 14*, 533-542.
- McKibben, B. (1989). *The end of nature*. New York: Anchor Books Doubleday.
- Mick, D. G. (1996). Are studies of dark side variables confounded by social desirable responding? The case of materialism. *Journal of Consumer Research, 23*, 106-119.
- Millennium Ecosystem Assessment. (2005). *Living beyond our means: Natural assets and human well-being* [Statement from the Board]. Washington, DC: Author.
- O'Guinn, T., & Shrum, L. J. (1997). The role of television in the construction of consumer reality. *Journal of Consumer Research, 23*, 278-294.
- Reimer, B., & Rosengren, K. E. (1990). Cultivated viewers and readers: A lifestyle perspective. In N. Signorielli & M. Morgan (Eds.), *Cultivation analysis: New directions in media effects research* (pp. 181-206). Newbury Park, CA: Sage.
- Richins, M. L. (1987). Media, materialism and human happiness. In M. Wallendorf & P. Anderson (Eds.), *Advances in consumer research, Vol. 14* (pp. 352-556). Provo, UT: Association for Consumer Research.
- Richins, M. L., & Dawson, S. (1992). A consumer value orientation for materialism and its measurement: Scale development and validation. *Journal of Consumer Research, 19*, 303-316.

- Roberts, J., & Bacon, D. (1997). Exploring the subtle relationships between environmental concern and ecologically conscious consumer behavior. *Journal of Business Research*, 40, 79–89.
- Saunders, S., & Munro, D. (2000). The construction and validation of a consumer orientation questionnaire (SOCI) designed to measure Fromm's (1955) "marketing character" in Australia. *Social Behavior and Personality*, 28, 219–240.
- Schaefer, D. & Dillman, D. (1998). Development of a standard email methodology: Results of an experiment. *Public Opinion Quarterly*, 62, 378–397.
- Schultz, P. W., & Zelensky, L. (1998). Values and proenvironmental behavior: A five-country survey. *Journal of Cross-Cultural Psychology*, 29, 540–558.
- Schumacher, E. F. (1973). *Small is beautiful: Economics as if people mattered*. New York: Harper & Row.
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical and empirical tests in 20 countries. In M. Zanna (Ed.), *Advances in experimental and social psychology* (Vol. 25, pp. 1–65). Orlando, FL: Academic Press.
- Schwartz, S. H. (1994). Are there universal aspects in the content and structure of values? *Journal of Social Issues*, 50, 19–45.
- Schwartz, S. H. (1996). Values priorities and behavior: Applying the theory of integrated value systems. In C. Seligman, J. M. Olson, & M. P. Zanna (Eds.), *The psychology of values: The Ontario symposium* (Vol. 8, pp. 1–24). Mahwah, NJ: Lawrence Erlbaum Associates.
- Shanahan, J. (1993). Television and the cultivation of environmental concern: 1988–1982. In A. Hansen (Ed.), *The mass media and environmental issues* (pp. 181–197). Leicester, England: University of Leicester Press.
- Shanahan, J., & McComas, K. (1997). Television's portrayal of the environment: 1991–1995. *Journalism and Mass Communication Quarterly*, 74, 147–159.
- Shanahan, J., & McComas, K. (1999). *Nature stories, depictions of the environment and their effects*. Cresskill, NJ: Hampton Press.
- Shanahan, J., & Morgan, M. (1999). *Television and its viewers. Cultivation theory and research*. Cambridge, MA: Cambridge University Press.
- Shanahan, J., Morgan, M., & Stenbjerre, M. (1997). Green or brown? Television and the cultivation of environmental concern. *Journal of Broadcasting and Electronic Media*, 41, 305–323.
- Shrum, L. J. (1995). Effects of perceptions of life quality in Korea. *Social Indicators Research*, 12, 393–416.
- Shrum, L. J., Burroughs, J. E., & Rindfleisch, A. (2005). Television's cultivation of material values. *Journal of Consumer Research*, 32, 473–479.
- Shrum, L. J., Wyer, R. S., & O'Guinn, T. C. (1998). The effects of television consumption on social perceptions: The use of priming procedures to investigate psychological processes. *Journal of Consumer Research*, 24, 447–458.
- Sirgy, M. J., Dong-Jin, L., Kosenko, R., Meadow, H. L., Rahtz, D., Cicic, M., et al. (1998). Does television viewership play a role in the perception of quality of life? *Journal of Advertising*, 27, 125–142.
- Teitler, J., Reichman, N., & Sprachman, S. (2003). Costs and benefits of improving response rates for a hard-to-reach population. *Public Opinion Quarterly*, 67, 126–138.
- Vining, J., & Ebreo, A. (1992). Predicting recycling behavior from global and specific environmental attitudes and changes in recycling opportunities. *Journal of Applied Social Psychology*, 22, 1580–1607.
- Yoon, K. (1995). Comparison of beliefs about advertising, attitude toward advertising, and materialism held by African Americans and Caucasians. *Psychological Reports*, 77, 455–466.
- Zinkhan, G. (1994). Advertising, materialism, and quality of life. *Journal of Advertising*, 23(2), 1–4.