Materialism and food security.

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Research Report

Materialism and food security

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Abstract

The present studies examined if materialists have an elevated concern about food availability, presumably stemming from a general survival security motivation. Study 1 found that materialists set a greater life goal of food security, and reported more food insecurity during their childhood. Materialists reported less present-day food insecurity. Study 2 revealed that materialists stored/hoarded more food at home, and that obese persons endorsed materialism more than low/normal weight persons. Study 3 found that experimentally decreasing participants’ feelings of survival security (via a mortality salience manipulation) led to greater endorsement of materialism, food security as goal, and using food for emotional comfort. The results imply that materialists overcame the food insecurity of their childhood by making food security a top life goal, but that materialists’ current concerns about food security may not wholly stem from genuine threats to their food supply.

Health professionals and governments have shown increasing interest in food insecurity, which is a state of ‘limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways’ (Olson & Holben, 2002; pg 1841). Simply stated, individuals with food insecurity do not have steady access to enough food. The food insecure tend to have lower socio-economic status, and spend less money on food (e.g. Nord, Andrews, & Carlson, 2003). Currently, around 10\% of US households are food insecure (e.g. Olson & Holben, 2002). Food insecurity arises with or without hunger (e.g. Olson, 1999). Food insecure individuals who are not hungry have found other ways to cope with the insecurity, such as eating foods that are less expensive (but less varied) (e.g. Nord et al., 2003). Thus, whether the food insecure are hungry or not, their dietary intake of essential nutrients are often below the recommended daily allowance (e.g. Dixon, Winkleby, & Radimer, 2001; Kendall, Olson, & Frongillo, 1996; Rose & Oliveira, 1997). Consequently, food insecurity contributes to poorer physical and mental well-being, and increases the risk of chronic diseases such as cancer and heart disease (e.g. Pheley, Holben, Graham, & Simpson, 2002; Siefert, Hefflin, Corcoran, & Williams, 2001).

Practical solutions to food insecurity have been proposed, such as increasing government and community assistance, instituting nutritional education programmes, reducing losses of edible food during production and distribution, reducing poverty, and other advocacy projects (for a review, see American Dietetic Association, 2002). The problem of food insecurity can also be tackled by understanding what makes some people strive for food security. That is, what leads some to make food security a personal life goal? Somewhat surprisingly, materialism may provide insight to this question.

Materialism is ‘the theory or attitude that physical well-being and worldly possessions constitute the greatest good and highest value in life’ (American Heritage Dictionary, 2000). Considerable empirical research has investigated how goods and services gratify materialists (e.g. Belk, 1985; Claxton & Murray, 1994; Holt, 1998; Inglehart, 1977; 1997; Richins, 1994; Richins & Dawson, 1992). However,
investigators have largely overlooked food despite its biological and socio-cultural significance. Food, along with
water and shelter, is necessary for life, and societies use food
to mark social roles and structures (e.g. Fieldhouse, 1995).
Moreover, Rozin (1996) argues that eating ‘is the
principal mode of material transaction between the world
and the person’ (p. 20). Hence, materialists likely
navigate their physical and socio-cultural environments
through food.

Different disciplines conceptualise materialism in
diverse ways. In philosophy, materialism is the position
that the material world precedes thought and is consequently
knowable. Philosophical materialism has different configura-
tions, such as Marvin Harris’ (1979) cultural materialism
and the dialectical materialism of Karl Marx (1867). In
psychology and consumer research, materialism is con-
ceived as a tendency to psychologically invest in one’s
possessions and goods and services in general (e.g. Belk,
1985; Claxton & Murray, 1994; Holt, 1995; Inglehart, 1977;
suggests that materialism is a collection of personality traits
(i.e. envy, non-generosity, and preservation). Richins and
Dawson (1992) propose that materialism is a personal value
that embodies three elements: acquisition centrality,
acquisition as the pursuit of happiness, and possession-
defined success. Claxton and Murray (1994) view materi-
alism from the perspective of symbolic interactionism
theory, and suggest that materialism stems from individuals
relying on material objects (rather than other people) for
of consuming in which persons integrate the symbolic
meanings of products into their self-concepts and use
objects to classify how they differ from others.

However, the present studies concentrate on Inglehart’s
(1977, 1997) socio-political conception of materialism for
survival security plays a principal role. Inglehart maintains
that materialism is a feature of modern culture (the most
salient example is the US during the first half of the 20th
century). Inglehart suggests that survival insecurity typifies
modern culture and stems from fear of military conflict and
concerns about economic self-sufficiency. This survival
insecurity fosters a syndrome of values, norms, and
motivations in a variety of domains such as politics (i.e. a
need for strong leaders, social order, xenophobia), religion
(i.e. emphasis on higher power, absolute rules, predict-
ability), sexuality (i.e. maximise reproduction), and econo-
metics (i.e. strive for economic growth). However, as
modern culture develops economically and future gener-
ations are assured of survival security, the degree of life
satisfaction that economic prosperity provides reaches a
point of diminishing returns. Inglehart suggests that during
this period, the culture shifts from materialism to post-
materialism and modern to post-modern cultural values (e.g.
in the US from the 1970s to the present) in which
maximising subjective well being and self-expression
become the main sources of life satisfaction. Individuals
within a nation also vary in materialism and post-
materialism: a chronic focus on lower order needs (material
comforts and security) characterises materialists, whereas
attention to higher order needs (self-expression) dis-
tinguishes post-materialists.

Western historians suggest that the supply of food has
become more stable and secure over time (e.g. Mennell,
1987; Mennell, Mucrott, & van Otterloo, 1992). Mennell
et al. (1992) observe that ‘This change, roughly, came about
through the post-Columbian metamorphosis in the trade
routes and the import of food crops, through the agrarian and
industrial revolutions and the accompanying revolutions in
agriculture, means of food transport, and food preservation.
At the same the general availability of food has been
enlarged; processes of… democratisation… ensured a more
equal distribution of the accessibility of food to the
population by the mechanism of wages (which went up)
and prices (which went down)’ (page 62). Nevertheless,
within developed nations, food is still unequally distributed
and does not reach all members. An historical economic
analysis by Boserup (1983) found that ‘rapid growth of the
population and rapid growth of per capita income go
together with malnutrition and sometimes starvation among
the poor’ (pages 208 and 209). Likewise, Foster (1992)
found that, controlling for GNP, nutrition indicators are
worse for countries with greater income inequality. In these
systems, the poor and rich compete for food, driving up
prices. The problems of food accessibility and security are
greatest during economic slowdowns, crop failures, war, or
population shifts.

Individuals with an above-average drive for survival
security have deep concerns for their personal safety and
access to products that meet basic needs (e.g. food, water,
shelter, clothing, etc.). Survival security motivation under-
pins Inglehart’s (1977, 1997) notion of materialism because
he argues that a state of survival insecurity during the
formative years of human development can bring about
materialism later in life (and a state of survival security
gengenders post-materialism/post-modernism). That is, that
material deprivation in childhood fosters materialism in
adulthood. Critics dispute this claim, contending that
materialism stems from family disruption (e.g. Rindfleisch,
Burroughs, & Denton, 1997), a lower level of education
(e.g. Duch & Taylor, 1993; Warwick, 1998), having a
shorter time to develop one’s identity in late adolescence
(e.g. Pfeiffer & Cote, 1991), the materialism and other
characteristics of one’s spouse (e.g. Claxton, Murray,
& Janda, 1995), or the personality and values of one’s parents
(e.g. Kasser, Ryan, Zax, & Sameroff, 1995; Marks, 1997).
Notwithstanding these reservations, research has revealed
that childhood poverty associates with materialism in
adulthood (e.g. Abramson & Inglehart, 1995; Cohen &
Cohen, 1996; Kasser et al., 1995).

Thus, materialism may be an individual’s way of coping
with childhood survival insecurity. In early adulthood, they
may set the goals to move up the social ladder, to improve
their socio-economic status, and surround themselves with possessions to ensure that they never do without. For instance, Richins and Dawson (1992) found that materialists make financial security a top life goal. Although materialists’ choice of goals may initially stem from poor economic conditions and real threats to their physical security, after a while, products that satisfy basic needs and possessions in general likely take on a psychological significance for materialists. For instance, materialists may hoard basic necessities (e.g. food, clothes, etc.) because hoarding offers visual reassurance that in turn makes them feel more secure. Theorists in other fields suggest that the pursuit of possessions and wealth can stem from reactance against insecurity (e.g. Fromm, 1976; Maslow, 1954). We suggest that this insecurity also leads to excessive concerns about products that satisfy basic necessities, even for materialists who no longer have genuine threats to their physical security.

Thus, materialists likely strive for survival security, leading them to set the life goals of ensuring that they are safe and have access to products that satisfy basic needs. Of these products, food is central. Human survival requires it. Thus, materialists should have an elevated concern about their ability to obtain food, and they should have a life goal of ensuring that food is plentiful. Food also likely takes on a psychological significance for materialists, leading to hoarding, weight issues, and possibly using food for emotional comfort.

In sum, we suggest that materialism is one response to childhood survival insecurity, including food insecurity, and that adult materialists make food security a top life goal. Whether having the life goal of food security is sufficient for adult materialists to overcome the food insecurity of their childhood is difficult to predict, given that food insecurity stems from many factors outside of one’s control. Thus, although we expect that materialists will set a higher goal of food security and will report a higher incidence of food insecurity during their childhood, we do not predict if food security typifies materialists’ present-day experience. Using correlational designs, Study 1 examines the association between materialism and food security, and Study 2 investigates if materialists’ drive for food security links with their body mass index (BMI) and food hoarding. Study 3 experimentally manipulates participants’ feelings of survival security to gauge the effects on materialism and food supply concerns.

**Study 1**

**Method**

**Participants**

A questionnaire was mailed to a sample of 350 residents drawn randomly from the telephone directory of a moderately-sized city in Australia. Respondents were encouraged to return the questionnaire within three weeks, and those unwilling to participate were asked to offer the questionnaire to another household member (who was at least 18 years old). One hundred and six questionnaires were returned (30%), of which 95 were usable. The sample comprises 37% male and 63% female, an age range from 18 to 84 years (median = 41), and a median education of highest level of High School. A comparison of the sample’s characteristics with census records for the local area (Australian Bureau of Statistics, 2003) reveals that the sample is representative in age and education but under represents males.

**Questionnaire**

Besides demographic characteristics, the questionnaire contained the following scales

**Materialism**

Inglehart’s (1977) Materialism–Post-materialism Scale comprises six materialism items and six post-materialism items. Only the materialism items were used for the present study (e.g. ‘Maintaining a high level of economic growth’, ‘Making sure our country has a strong defence force’, ‘The fight against crime’, etc.). Using the rating format encouraged by Bean and Papadakis (1994), each item was rated on a 1–7 ‘Of Little Importance’ to ‘Of Supreme Importance’ scale. Cronbach’s Alpha = 0.87.

**Present-day food insecurity**

Present-day food insecurity was measured with the present-day items of the Bickel, Nord, Price, Hamilton, and Cook (2000) food insecurity scale, which comprises four items rated on a scale of 1–3, ‘Never True’ to ‘Often True’ (sample item: ‘In the last 12 months, the food that I bought just didn’t last and I didn’t have money to get more’) (Cronbach’s Alpha = 0.82).

**Childhood food insecurity**

Participants also completed the childhood food insecurity items of the Food Insecurity scale (sample item: ‘When I was a child, the food that my parents bought just didn’t last and we didn’t have money to get more’) (Cronbach’s Alpha = 0.90).

**Food security as goal**

To measure Food Security as Goal, participants rated the goal of ‘Ensuring that you have enough food to eat’ on a 1–7 ‘Of Little ‘ to ‘Of Supreme Importance’ scale.

**Results**

Food security as goal, childhood food insecurity, and present-day food insecurity were regressed onto materialism. As shown in Table 1, the three independent variables robustly predict materialism. The Multiple $R$ (0.64) indicates that the variables account for 40% of
materialisms’ variance. All three variables significantly predict materialism, but food security as goal contributes most. Food security as goal and childhood food insecurity have positive beta weights, whereas present-day food insecurity has a negative beta weight. Thus, a higher goal of food security, a greater incidence of childhood food insecurity, and a lack of present-day food insecurity characterize materialism.

Males and females did not differ in their endorsement of materialism (male mean = 5.7, female mean = 5.6, t = -0.4, d.f. = 90, p = ns), but increasing age was associated with greater materialism (r = 0.44, d.f. = 90, p < 0.001, two-tailed).

Regarding food insecurity in the last 12 months, 24% of respondents reported that sometimes or often ‘the food that I bought just didn’t last and I didn’t have money to get more’; 16% reported that ‘I couldn’t afford to eat balanced meals’; 17% that ‘I cut the size of my meals or skipped meals because there wasn’t enough money for food’; and 12% that ‘I ate less than I felt I should because there wasn’t enough money to buy food’.

For childhood food insecurity, 22% of participants stated that when they were children sometimes or often ‘the food that my parents bought just didn’t last and we didn’t have money to get more’; 16% that ‘my family couldn’t afford to eat balanced meals’; 4% that ‘I cut the size of my meals or skipped meals because there wasn’t enough money for food’; and 11% that ‘I ate less than I felt I should because there wasn’t enough money to buy food’.

Study 2

The results of Study 1 mesh with the view that materialism may stem from an individual’s attempt to cope with childhood survival insecurity, making food security a top life goal in adulthood. Materialists reported greater food insecurity during their childhood, and placed greater weight on food survival security as a life goal.

Interestingly, Study 1 found that, while materialists emphasized food security as a life goal and had childhood food insecurity, materialists do not have present-day food insecurity. In short, materialists are concerned that food is plentiful, and they do not seem to be going without. Study 2 examines if materialists’ strive for food security affects their weight, and if they hoard food at home.

Table 1

<table>
<thead>
<tr>
<th>Model</th>
<th>Beta</th>
<th>Multiple R</th>
<th>F</th>
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<tr>
<td>Food security as goal</td>
<td>0.54</td>
<td>18.2***</td>
<td></td>
</tr>
<tr>
<td>Childhood food insecurity</td>
<td>0.41</td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>Present-day food insecurity</td>
<td>-0.19*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.05; **p < 0.01; ***p < 0.001. Degrees of freedom were 3, 84.

Method

Participants

A questionnaire was distributed through the post to a random sample of 460 residents in a moderate size city in Australia. Respondents, drawn from the telephone directory, were encouraged to return the questionnaire within three weeks, and those unwilling or unable to participate were urged to pass the questionnaire along to another household member who was at least 18 years old. One hundred forty were returned (30%), of which 115 were useable. The sample contains 53% male and 47% female, an age range from 21 to 85 (median = 50), a median education of Completed Highest Level of High School, and an average household size of 2.8. According to census records (Australian Bureau of Statistics, 2003), the sample slightly over represents males and older persons but is representative in education and household size.

Questionnaire

The questionnaire measured

Materialism

Inglehart’s (1977) Materialism-Post-materialism on a scale of 1 ‘Of little importance’ to 7 ‘Of Supreme Importance’ (only Materialism items were used; Cronbach’s Alpha = 0.87). Participants were divided into High and Low Materialism groups at the median (6.0) of the materialism scale.

Food hoarding

To gauge food hoarding/storing, participants indicated the total number of servings they had in their kitchen (including refrigerator, freezer, pantry, etc.) of red meat, white meat, fish/seafood, dairy, fruit, vegetables, and cereals. Participants were instructed to go to their kitchen to make this assessment, and make the best estimate possible. The survey also asked participants the number of adults and children in their household. Consequently, a Food Hording index was calculated for each participant by summing the total number of servings stored in the household, divided by the number of household members.

Body mass index (BMI)

The questionnaire also asked respondents their height (in centimetres) and weight (in kilograms). Body mass index was calculated as weight (kg)/height (m^2). Participants were divided into a low/normal weight group (those participants with BMI under 30, n = 79), and an Obese group (those with BMI above 30, n = 34).

Results

As shown in Fig. 1, high materialists store more food at home than low materialists (t = -2.0, d.f. = 102, p < 0.05, two-tailed). On average, high materialists store around 39
servings per household member, whereas low materialists store around 25 servings. Obese participants (with BMI above 30) endorse materialism more than low/normal weight participants (see Fig. 2) \((t = -1.9, \text{ d.f.} = 113, p < 0.05, \text{ two-tailed})\). BMI positively correlates with the Food Hording index \((r = 0.21, \text{ d.f.} = 110, p < 0.05, \text{ two-tailed})\).

**Study 3**

Adult materialists’ strive to ensure that they overcome the survival insecurity of childhood may be successful, given that Study 2 found that materialists hoard more food at home and tend to be obese, and Study 1 revealed that materialists do not currently suffer from food insecurity.

Nevertheless, if materialists were to suffer a sudden drop in their feelings of survival security (i.e. via unemployment, war, terrorism, etc.), they would likely increase their support for materialism because materialism presumably stems from survival insecurity and survival security is a key life-goal for materialists. Hence, a (current) state of low survival security should increase individuals’ support for Inglehart’s (1977, 1997) materialism. Using the Mortality Salience manipulation from Greenberg, Pyszczynski, and Solomon’s (1986) Terror Management Theory, Study 3 reduces participants’ perceptions of survival security by instructing them to think about their own death (also see Arndt, Solomon, Kasser, & Sheldon, 2004; Kasser & Sheldon, 2000). Proponents of Terror Management Theory suggest that thinking about death motivates individuals to maintain their self-esteem by advocating the world view to which they subscribe. However, we suggest that a grim concern of those motivated by survival security is their own death. As defined, individuals with an above-average drive for survival security have deep concerns about their safety and access to products that satisfy basic needs (e.g. food, shelter, and clothing). However, sufficient food, shelter, and clothing are just the way of averting the ultimate end, which is death.

Hence, thinking about one’s own death should decrease perceptions of survival security (although this contention will be verified with a manipulation check). If materialism stems from a (current) state of low survival security, then the Mortality Salience manipulation should increase participants’ endorsement of materialism. Moreover, if survival security motivation leads materialists to have an elevated concern about food security, then individuals who increase their endorsement of materialism due to the Mortality Salience manipulation should also increase the importance of food security as a goal. Furthermore, the emotional significance of food may also increase when materialists feel insecure, a notion which we explore.

**Method**

**Design**

The effect of survival security motivation on materialism and materialists’ food concerns is examined by exposing half the participants to a Mortality Salience manipulation. For a manipulation check, post-test ratings of survival security as state will be compared between the experimental and control groups. Previous research has shown that participants have varying reactions to the Mortality Salience manipulation (e.g. Greenberg, Arndt, Simon, Pyszczynski, & Solomon, 2000). Thus, we predict that participants for whom the Mortality Salience manipulation leads to feelings of insecurity will endorse materialism after the mortality salience manipulation (more than the control group). Further, participants who respond to the mortality salience manipulation by feeling insecure and supporting materialism should also assign more importance to food security.
as a life goal and using food for emotional comfort (than the control group).

Participants
The mortality salience manipulation raises important participant care considerations, and so university students were selected to facilitate debriefing and serve as a point of contact. Second-year business students at a university in a moderate size city in Australia completed the questionnaire, and passed along copies of the questionnaire to three other persons. One hundred twenty-four surveys were obtained; 62 for the experimental condition and 62 for the control group. The sample is 45% male and 55% female, an age range from 18 to 78 (mean = 32), and a median education was Completed Highest Level of High School.

Questionnaire
The questionnaire measured demographic characteristics, a shortened version of the Marlowe-Crowne Scale of Social Desirability designed by Strahan and Gerbasi (1972), and

Materialism
Inglehart’s (1977) Materialism-Post-materialism on a scale of 1 ‘Of little importance’ to 7 ‘Of Supreme Importance’. Only materialism items were used for present study (Cronbach’s Alpha = 0.81).

Feelings of survival security
To measure General Survival Security as State, participants rated three items on a 1–7 ‘Strong Disagree’ to ‘Strongly Agree’ scale (‘The amount of money I have makes me feel secure’, ‘I feel safe and secure’, ‘My income is sufficient for my needs’) (Cronbach’s Alpha = 0.75).

Food security as goal
In Study 1, Food Security as Goal was measured with a single item (i.e. ‘Ensuring that you have enough food to eat’ rated on a 1–7 ‘Of Little Importance’ to ‘Of Supreme Importance’ scale). For Study 3, Food Security as Goal was measured with five items loosely based on Bickel et al. (2000) Food Insecurity scale. These modified items were rated on a 1–7 ‘Of Little Importance’ to ‘Of Supreme Importance’ scale and participants were instructed to think about how important each item may be as a goal. Items: ‘Ensuring that you have enough food to eat’, ‘Ensuring that the food you buy lasts and that you have money to get more’, ‘Ensuring that do not have to cut the size of your meals or skip meals because you didn’t have enough money for food’, ‘Ensuring that you do not eat less than you felt you should because there wasn’t enough money to buy food’, ‘Ensuring that you have always have plenty of food’. The Cronbach’s Alpha for the expanded Food Security as Goal scale was .90.

Use of food for emotional comfort
Five items were constructed to measure if participants Use Food for Emotional Comfort, which participants rated the 1–7 ‘Strong Disagree’ to ‘Strongly Agree’ scale (items: ‘Eating gives me emotional satisfaction’, ‘I tend to get in a good mood after eating’, ‘Thinking about food puts me in a good mood’, ‘Eating is pleasurable’, ‘When I feel lonely I console myself by eating’) (Cronbach’s alpha = 0.77). One item (‘When I feel lonely I console myself by eating’) was drawn from Stunkard and Messick (1985) three-factor Eating Questionnaire, but the remaining items were newly constructed.

Procedure
Participants first completed the Social Desirability scale and other distracter items. Next, based on the Mortality Salience manipulation procedure (e.g. Greenberg et al., 2000; Solomon, Greenberg, & Pyszczynski, 1991), participants in the experimental group completed two open-ended questions (i.e. ‘In the space below, write about what will happen to you as you physically die’, and ‘In the space below, write about the emotions that the thought of your own death arouses in you’). Participants in both conditions then completed the General Survival Security as State items, the Inglehart (1977, 1997) materialism–post-materialism scale, food security as goal items, and use of food for emotional comfort. Participants were then debriefed on the purpose of the study.

Results
Regarding the manipulation check, participants in the experimental condition report feeling less secure after the Mortality Salience manipulation than the participants in the control condition (the mean on the General Survival Security as State scale for the experimental condition is 4.1 vs. 4.6 for the control group; t = −2.5, d.f. = 121, p < 0.01, two-tailed).

As mentioned, participants can have varying reactions to the Mortality Salience manipulation, and so to assess the affect of the Mortality Salience manipulation on materialism, we first divided participants into two groups based on whether the participant had high or low post-test feelings of security (i.e. the midpoint of the General Survival Security as State scale). A 2 (felt insecure vs. felt secure) by 2 (experimental vs. control group) between-subjects ANOVA was performed on individuals’ endorsement of materialism. The ANOVA achieved a significant main effect for security feeling (F(1,123) = 4.0, p < 0.05), but this was complicated by a significant 2-way interaction between security feeling and experimental condition (F(1,123) = 10.6, p < 0.001) (see Fig. 3). Consistent with expectations, when the Mortality Salience manipulation made participants feel insecure, they support materialism (more than control condition).
To examine food security as goal, we divided participants at the median (5.3) of the materialism scale. A 2 (felt insecure vs. felt secure) by 2 (experimental vs. control group) by 2 (low materialism vs. high materialism) between-subjects ANOVA was carried out on the importance participants placed on food security as a life goal. Besides a significant main effect for materialism group \((F(1,111)=4.0, p<0.05)\), the ANOVA achieved a significant 3-way interaction between feelings of security, materialism, and experimental condition \((F(1,111)=3.3, p<0.05)\). Post hoc tests found that the 2-way interaction between materialism and experimental condition was significant for participants who felt insecure \((F(1,52)=2.3, p<0.05)\), but not significant for participants who felt secure \((F(1,59)=1.2, p=ns)\). As shown in Fig. 4, participants who responded to the Mortality Salience manipulation by feeling insecure and supporting materialism assign more importance to food security as a life goal (than the control group).

A 2 (felt insecure vs. felt secure) by 2 (experimental vs. control group) by 2 (low materialism vs. high materialism) between-subjects ANOVA was executed on participants’ Use of Food for Emotional Comfort, yielding a significant 2-way interaction between feelings of security and materialism \((F(1,115)=8.5, p<0.01)\) and a 3-way interaction \((F(1,115)=3.8, p<0.05)\). Regarding the latter, post-hoc tests found that the 2-way interaction between materialism and experimental condition was significant for participants who felt insecure \((F(1,55)=6.6, p<0.01)\) but not for participants who felt secure \((F(1,60)=.5, p=ns)\). Fig. 5 reports the significant 2-way interaction. When the Mortality Salience Manipulation made individuals feel insecure and increase their support for materialism, they also increased their use of food for emotional comfort (more than control group).

Recalculating the ANOVAs controlling for Social Desirability Bias did not alter the pattern of results.

**General discussion**

Study 1 revealed that materialists reported a greater incidence of childhood food insecurity and made food security a top goal in adulthood, and Study 3 found that decreasing participants’ feelings of survival security led to greater support for materialism and materialists’ goal of food security. Further, Study 1 found that materialists do not currently experience food insecurity, and Study 2 showed that materialists have an abundance of food at home and tend to be obese. Thus, materialists seem to have
successfully overcome the food insecurity of their childhood. In our view, materialism may be an individual’s way of coping with childhood survival insecurity, by setting the goals in (early) adulthood to improve one’s socio-economic status, satisfy basic needs, and surround oneself with possessions. Consequently, they make food security at top life goal, with apparent success.

We are not advocating materialism as a solution to food insecurity, as materialism associates with other psychosocial problems such as lower life satisfaction (e.g. Saunders & Allen, 2000; Wright & Larsen, 1993). Instead, we are suggesting that inspecting materialism and its motivations can glean insights into what leads some people to make food security a top life goal. On the other hand, food insecurity stems from real socioeconomic and social problems that are difficult for one to overcome simply by making security an important life goal. For instance, food insecurity stems from racial discrimination, family structure, endemic poverty, and macro-economic forces (e.g. Nord et al., 2003).

Although materialists reported greater childhood food insecurity, materialists’ current concerns about food security may not wholly stem from economic conditions or genuine threats to their food supply. Study 3 found that making materialists think about their own death increased the importance they assigned to food security as a goal (for those who felt insecure). Study 2 found that materialists hoard an ample supply of food and tended to be obese. Each of these findings suggests that materialists’ interest in food security arises from more than concerns about sufficient nutrient intake. Instead, it likely stems from deeper psychological forces. Some researchers suggest that over-eating may stem from (some) individuals’ attempts to reduce their awareness of negative emotions (e.g. Heatherton & Baumeister, 1991; Ruderman, 1985). For instance, McManus, Waller, and Chadwick (1996) found that women with unhealthy eating attitudes (e.g. over-eating, binge eating, bulimia) ate more following a threat to their self-esteem. Waller and Mijatovich (1998) showed that women with unhealthy eating attitudes ate more when they were exposed to subliminal messages of ego-threats (e.g. ‘Mum hates me’) and threats to physical safety (e.g. ‘Mum hurts me’). These researchers suggest that over-eaters may turn to food as a form of escape or dissociation to make themselves feel better when they feel bad. Consistent with this view, Study 3 found that when the Mortality Salience manipulation made participants feel insecure, they gave greater weight to using food for emotional comfort (i.e. they rated more highly items such as ‘eating gives me emotional satisfaction’, ‘I tend to get in a good mood after eating’, ‘When I feel and lonely I console myself by eating’). However, Study 3 found that this effect was restricted to high materialists. Thus, future research should more closely examine the link between materialism and overeating.

Materialists’ deep concerns about food may stem from their (perceived) threat to their cultural worldview. Some theorists suggest that materialism is a coping response to feelings of self-doubt or anomie, the latter of which is the belief that society has unclear norms and guidelines (Chang & Arkin, 2002; Daun, 1983; Linden, 1979). Hence, the pursuit of food may provide materialists with a sense of purpose and meaning in life. This process is more powerful than surrounding oneself with possessions because the body absorbs food. The benefits of norms and certainty may be particularly salient for materialists because society is shifting away from materialism (e.g. De Graaf & Evans, 1996; Inglehart, 1997). Indeed, Study 1 showed that younger people were less likely to endorse materialism than older people. Research on Terror Management shows that the Mortality Salience manipulation increases participants’ support for the cultural worldview to which they subscribe (e.g. Solomon et al., 1991), and Study 3 found that the Mortality Salience manipulation enlarged individuals’ endorsement of materialism and food security goal (among insecure participants, and compared to control groups). Thus, keeping food in ample supply (and eating it) might reinforce materialists’ allegiance to their (disappearing) cultural worldview. Fischler (1988) observed that ‘not only does the eater incorporate the properties of food, but, symmetrically, it can be said that the absorption of a food incorporates the eater into a culinary system and therefore into the group which practices it’ (pp. 280–281). For Inglehart’s (1977, 1997) theory, this means that the (over-) abundance of food and goal of food security may be a part of the culinary system that accompanies the modern cultural worldview, along with other features of modern culture such as the strive for economic growth, social order, a need for strong leaders, maximisation of reproduction, and so on. The culinary system of the post-modern culture is an important direction for future research.

Study 3’s Mortality Salience manipulation likely affected perceptions of survival security per se, rather than other states such as anxiety. The manipulation check confirmed that individuals in the experimental group reported feeling less safe and secure than the control group. Moreover, other studies have shown that the effect of the Mortality Salience manipulation stems from thinking about one’s own death and not from other anxiety producing manipulations (e.g. Greenberg, Martins, Jonas, Eisenstadt, Pyszczynski and Solomon, 2003). Further, survival security motivation is ensuring that one is safe from harm and that one can satisfy basic needs (e.g. food, shelter, and clothing). Food, clothing, shelter, and so on, are merely the means of preventing the end, which is death. Thus, thinking about one’s death probably aroused a grim concern of individuals with a heightened survival security motivation. Indeed, Kasser and Grow Kasser (2001) found that materialists dreamed of death and danger more than non-materialists.

Nevertheless, there are important limitations to the present studies. First, the samples were not representative of the general population. Study 3 employed a student sample, and although Studies 1 and 2 selected participants at
random from the telephone book, the samples are not representative in key demographic characteristics. Further, some cell sizes in Study 3 are small. Second, a longitudinal study is needed to adequately test if food insecurity during childhood leads to materialism and food security as a life goal in adulthood. Study 1 merely asked participants to reflect back to their childhood experience, which may suffer important biases. Third, the present studies adopted Inglehart’s (1977, 1997) conception and measure of materialism because Inglehart views materialism as involving childhood survival security and survival security as a goal. Nevertheless, there are other conceptions of materialism that have well-tested measurement scales (e.g. Belk, 1985; Richins & Dawson, 1992). Whether materialists, as defined by these measurement scales, make food security a top life goal is unclear.

Besides addressing the methodological limitations of the present studies, future research should examine if there are other reasons materialists’ have heightened concerns about food besides the survival security explanation offered here. For instance, Richins and Dawson (1992) found that status-seeking motivates materialists, which Eastman, Goldsmith, and Flynn (1999) defined as ‘the motivational process by which individuals strive to improve their social standing through the conspicuous consumption of consumer products that confer and symbolise status both for the individual and surrounding significant others’ (pg. 42). Implicitly, status-seeking probably motivates Inglehart’s (1977, 1997) conceptualisation of materialism as well. Thus, the findings in the present studies that materialists emphasise food security, store more food at home, and tend to be obese may stem from status seeking. Future research should examine if materialists perceive that a greater quantity of food and body size symbolise high status, and if materialists chose foods that have high status and reject low status foods. Historical analyses of Western culture (e.g. Middle Ages) found that greater girth and food quantity symbolised higher social status (e.g. Mennell, 1987; Mennell et al., 1992). For instance, Mennell et al. (1992) suggest that ‘Wealthy elite tried to impress others of equal rank and especially people of poor status with ostentatious and lavish feasting, banqueting and the consumption of huge quantities of food’ (page 65).

Although the results of the present studies imply that materialists prevailed over the food insecurity of their childhood by making food security a top life goal, a deeper understanding of this process is needed before the results of the present studies can be used in education or advocacy programs. Previous research reveals that people who set goals exert more effort, concentrate on what they want to achieve, and persevere after setbacks (e.g. Bartholomew, Parcel, Kok, & Gottlieb, 2001). In short, setting goals increases performance (e.g. Locke & Latham, 1991).

Besides setting a goal of food security, what concrete steps did materialists take to achieve the objective? What were the necessary skills? What were the obstacles and what were the sources of support? What was the role of self-efficacy? Qualitative research, including in-depth interviews with materialists, may answer these important questions.

References

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