Green Guilt and Green Behavior Associated With Better Mental Health

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Abstract

In this anonymous online study of 220 participants, we found "green guilt" significantly associated with self-reported environmentally conscious behavior. "Green guilt" and "green behavior" were associated with good mental health, and negatively associated with depression, anxiety and neuroticism. In an experimental component of the study, two stories about workshops designed to raise consciousness about environmental issues were presented. In one condition, students were encouraged to think about their own behaviors, privately. In a second condition, students were forced to publicly "confess" their green or non-green behaviors. Participants, randomly assigned to one of the two conditions, were asked to write about the stories. When these narratives were compared on the Linguistic Inquiry and Word Count program (LIWC; Pennebaker), it was found that responses to the private condition contained significantly more positive emotion words.

Background

Effects of guilt related to the environment have been unknown. We are currently facing an environmental crisis in which many are being called upon to engage in major personal and social change. In prior studies related to racism, it was found that guilt induction may fail to decrease racism and instead, it may increase defensiveness. In this study, we attempt to discover if feelings of personal guilt over the environment serve to increase or decrease environment-friendly behavior.

Method

Participants and Procedures
Participants were 220 community adults (71.7% female) who completed an online survey and experiment. Ages ranged from 18-77 years (M=34 yrs). Most participants were from the United States (85.7%), Canada (4.3%), and the United Kingdom (4.3%). Most were Caucasian (75.2%) or Asian (11%). The sample was highly educated, 25.7% having doctoral degrees, 27.1%, masters degrees; and 11%, some graduate education.

In the experimental component of the study, participants provided open-ended responses to one of two experimental scenarios. Both scenarios described a character, "Susan," who is a manager at a technology firm. When the firm decides to run a more environmentally friendly operation, Susan and all employees must attend mandatory workshops aimed at raising environmental awareness. In one scenario (*private assessment condition*), employees are given a checklist of environmentally friendly behavior and asked to complete the checklist at home. In the other scenario (*public assessment condition*), employees must complete the checklist at the workshop and publicly share their responses with the group. Research participants were asked to describe what Susan would think, feel, and do in response to her workshop experience.

Linguistic Analysis of Responses to Scenarios
Narrative responses to the scenarios were analyzed using the Linguistic Inquiry and Word Count (LIWC; Pennebaker et al., 2007) text analysis program. The LIWC provides relative frequencies for over 70 categories of language. In this study, we examined positive emotion words, negative emotion words, social words, self-reference words, and cognitive words.

Method (continued)

Self-Report Instruments
Green Guilt Scale (GGS). The GGS, developed for the present study, is a 52-item, Likert-type scale for assessing guilty feelings about a variety of practices that can be viewed as "environmentally unfriendly," such as wastefulness, unsafe disposal of pollutants, and failure to recycle a variety of products. The items of the GGS were fit to the Rasch partial credit model. Item separation reliability was high (.98), as was person separation reliability (.94). All items fit the Rasch model adequately (mean square fit all <1.50). Cronbach's alpha coefficient was .96. The mean of the GGS scale was set at 0, and Rasch measures were used in all analyses; higher measures on the scale indicate greater guilt.

Green Behavior Scale (GBS)
The GBS was adapted from a survey commissioned by the Rechargeable Battery Recycling Corporation and used with permission. The survey is a 19-item, Likert-type scale for assessing degree of practice of environmentally friendly behaviors. The items of the GBS were fit to the Rasch partial credit model. Item separation reliability was .97; person separation reliability was .85. All items fit the Rasch model adequately (mean square fit all <1.50). Cronbach's alpha coefficient was .86. The mean of the GBS scale was set at 0, and Rasch measures were used in all analyses; higher scores indicate a higher degree of green behavior.

Personality and Psychological Well-being Scales.
Participants also completed measures of depression (CESD), generalized anxiety (GAT), a brief Big Five Inventory, the Interpersonal Guilt Questionnaire-67 subscales for Survivor Guilt (guilt over being better off than others) and Omnipotent Responsibility Guilt (exaggerated responsibility for the well-being of others), and the Satisfaction with Life Scale.

Results

Experimental Scenarios
Table 1 presents the data comparing participant responses (LIWC categories) in the two experimental scenarios (public versus private assessment of environmental practices). There was a significantly higher relative frequency of positive emotion words for the private assessment condition; there were no other significant differences between conditions.

Table 1. Comparison of Word Category Percentages between Experimental Scenarios

LIWC Categories	Public Assessment M	Public Assessment SD	Private Assessment M	Private Assessment SD	t
Positive Emotion Words	2.32	1.8	2.95	2.9	-2.15*
Negative Emotion Words	1.14	1.3	1.11	1.1	0.17
Social Words	9.76	4.5	10.32	4.2	-0.85
Self-Reference Words	2.02	2.5	1.56	1.7	1.39
Cognitive Words	9.98	3.9	9.48	3.9	0.84

*p<.05

Surveys
Table 2 presents Pearson correlations between green guilt, green behavior, personality, and psychological well-being scales. Green guilt was positively correlated with green behavior.

Green guilt was significantly positively associated with conscientiousness, agreeableness, extraversion, and openness. The positive correlation with empathy-based survivor guilt approached significance. Green guilt was significantly negatively associated with indicators of psychopathology or emotional distress (depression and anxious temperament); the negative correlation with neuroticism approached significance. Green behavior was significantly associated with fewer negative psychological traits, and patterns of correlations were similar to those found with green guilt.

We also examined the relationships between demographic and background variables and green guilt and behavior. Females were significantly higher than males on both green guilt, t(196)=-2.15, p<.05, and green behavior, t(203)=-1.99, p<.05. Green guilt was positively associated with age, r(197)=.18, p<.05 and political liberalism (scale from 1=very conservative to 5=very liberal), r(194)=.28, p<.01. Green behavior was also associated with political liberalism, r(201)=.31, p<.01. Neither green guilt nor green behavior was associated with participants' number of children.

Table 2. Correlations among Green Guilt, Green Behavior, and Psychological Outcomes

	Green Guilt	Green Behavior
Green Behavior	.67**	
Extraversion	.14*	.09
Agreeableness	.15*	-.01
Conscientiousness	.15*	.08
Neuroticism	-.12†	-.08
Openness	.19**	.23**
Depression (CESD)	-.18*	-.17*
Anxious Temperament	-.16*	-.11
Survivor Guilt	.13†	.10
Omnipotent Guilt	-.04	-.14†
Satisfaction with Life	.09	.11

†p<.10 *p<.05 **p<.01

Discussion

Green guilt was significantly associated with green behavior, suggesting that guilt motivates green behavior, or that higher environmental consciousness and behaviors leads one to feeling more green guilt. Green guilt was negatively associated with pathological and maladaptive traits, and was positively associated with life satisfaction and desirable personality traits. These findings are contrary to the belief held by some that strongly-held environmental concerns are an expression of neurotic fears and preoccupations. This study suggests that the way people are educated about environmental issues may be important. People who attended a guilt-inducing program were believed to experience less positive emotions than those who attended a program in which no guilt-inducing methods were used. This has immediate implications for public policy. Efforts to raise consciousness may be most successful if the program avoids anything that evokes feelings of guilt in the students.

Finally, previous research has shown that some types of guilt are adaptive, serving social functions, while other types of guilt, such as survivor guilt, can be maladaptive, at least when exaggerated. Despite a correlation with survivor guilt, this study places green guilt firmly among the adaptive and prosocial varieties of guilt in that it is not associated with any type of pathology and in fact correlates highly with positive psychological health.

For further information

Acknowledgements