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Position on Environmental Issues and Engagement in Proenvironmental Behaviors

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Using data collected in a general population survey from a random sample of individuals in four communities in Pennsylvania, we tested the following two hypotheses: (1) that differences in sociodemographic characteristics exist among individuals with variant positions on environmental issues; and (2) that individuals with different positions on environmental issues exhibit dissimilar levels of proenvironmental behaviors. Both hypotheses received substantial support. The results indicate that young individuals, the more highly educated, people with higher incomes, and those with liberal political ideologies are more likely than their opposites to maintain proactive positions on environmental issues. The findings also reveal that while both proactive and sympathetic persons engage more frequently in proenvironmental behaviors than do their neutral counterparts, sympathetic individuals partake in these same behaviors less often than do those who expressed proactive positions on environmental issues.

Keywords environmentalism, environmental movement, position on environmental issues, proenvironmental behaviors, social movement

The structure or organization of a social movement is often illustrated with concentric rings or circles (Mauss 1975). The innermost ring, or core, typically contains the principal leaders, along with the most zealous and committed members (Mauss 1975; Morrison 1986). Surrounding the core are various rings or layers of the public organized, to a greater or lesser extent, around the issue at hand. Each layer is comprised of actors and/or associations with differing levels of interest in and commitment to the success of the movement.

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As evidenced by its enduring survival, large organizational base, and widespread public support, the environmental movement continues to be one of the more successful social movements throughout the United States and western Europe (Mertig and Dunlap 2001). Despite the vast literature on environmentalism, research on the different layers of individuals involved in the environmental movement has been somewhat limited. Surprisingly little empirical research has been conducted on the sociodemographic characteristics and/or attitudes, beliefs, and behaviors of these individuals. This article addresses these issues. Two hypotheses were tested. First, it was hypothesized that there are differences in sociodemographic characteristics among individuals with variant positions on environmental issues. The second hypothesis was that individuals with different positions on environmental issues exhibit dissimilar levels of proenvironmental behaviors.

Background

In a review of the trends in public opinion toward environmental quality from the mid 1960s to the late 1980s, Dunlap (1989) proposed a five-layer concentric pattern to depict the various segments of the public involved in the environmental movement. According to Dunlap (1989, 93–94), activists—"individuals intensely concerned about and personally active on behalf of environmental quality"—are at the core of the movement. Encompassing the core is a layer referred to as the attentive public—"individuals interested in and informed about environmental issues . . . [who] are likely to provide occasional support for environmental causes, signing petitions, voting for proenvironmental issues and candidates and perhaps even contributing time and money to specific environmental campaigns." The third and largest layer consists of the sympathetic public—"individuals who—although not very attentive to environmental issues—express support for efforts to enhance and protect environmental quality." Next are the neutrals—"persons who have little interest in and typically no opinion concerning environmental issues." Last, the outer layer is comprised of opponents—"individuals who are opposed to some degree to the goals of the environmental movement and hold opinions that can be characterized as 'anti-environmental.'"

Data from national surveys appear to support Dunlap's (1989) notion of a multilayered public organized around environmental issues. In 1983, an ABC News/*Washington Post* poll asked, "In recent years, the environmental movement has been very active. Do you consider yourself as: an active participant in the environment movement, sympathetic towards the movement, but not active, neutral, or unsympathetic towards the environmental movement?" Seven percent reported that they were active participants, 54% said they were sympathetic, but not active, 29% indicated that they were neutral, and 4% said they were unsympathetic (ABC News/*Washington Post* 1983).

More recently, five Wirthline Worldwide (1995, 1996, 1997, 1998, 1999) *National Quorum* surveys asked respondents a very similar question [Do you think of yourself as: (1) an active environmentalist, (2) sympathetic towards environmental concerns but not active, (3) neutral, or (4) generally unsympathetic to environmental concerns]. The general trends over this 5-year period reflect those reported in the 1983 poll. The percentage of respondents who considered themselves active environmentalists ranged from a low of 9% in 1996 to a high of 12% in 1998. Sympathetic individuals ranged from a low of 53% in 1995 to a high of 61% in 1996, while neutral individuals ranged from a low of 24% in 1996 to a high of 30%

in 1999. Unsympathetic individuals ranged from a low of 3% in 1998 to a high of 5% in 1995.

Despite the consistent pattern of survey findings over nearly two decades, few studies have been conducted on the sociodemographic characteristics and/or attitudes, beliefs, and behaviors of the different layers of individuals involved in the environmental movement. The present study addresses these issues. In this article, we use data collected in a general population survey from a random sample of individuals in four communities to test the following hypotheses: (1) that differences in sociodemographic characteristics exist among individuals with variant positions on environmental issues; and (2) that individuals with different positions on environmental issues exhibit dissimilar levels of proenvironmental behaviors.

Data and Measurement

The data used in this analysis were drawn from a study that focused on land-use issues at the rural–urban interface in Pennsylvania (Luloff et al. 1995; Theodori and Luloff 2000). Data were collected through a general population survey from a random sample of individuals in four study sites chosen to represent a typology of increasing levels of urban presence and pressure in agricultural areas. The four areas selected were small portions of Snyder, Bedford, Crawford, and Lancaster counties.[1] Based on major issues identified in key and action informant interviews in each study site, a questionnaire was developed that addressed land use, agricultural, development, and natural resource issues, in addition to social issues including community attachment, community participation, stress, and recreation. Following a modified total design method (TDM; see Dillman 1978; Luloff and Ilvento 1981), data were gathered in the Snyder, Bedford, and Crawford sites using mail survey techniques. Data were collected via a questionnaire drop-off/pick-up procedure (Melbye et al. 2000) in the Lancaster site due to the presence of a substantial number of Old Order Amish and Mennonites.[2] Overall, a response rate of 51% was achieved. This resulted in 1491 completed questionnaires across the 4 sites.[3]

Position on Environmental Issues

Following earlier work (ABC News/*Washington Post* 1983; Wirthline Worldwide 1995, 1996, 1997, 1998, 1999), position on environmental issues was evaluated using a single survey item. The question asked: "Which of the following best describes your position on environmental issues?" Response categories included: (1) active in environmental issues, (2) sympathetic to environmental issues, (3) neither sympathetic nor unsympathetic, (4) unsympathetic to environmental issues, and (5) actively opposed to any action on environmental issues. Based on the small number of cases in the latter two categories, respondents who indicated that they were either (a) unsympathetic to environmental issues or (b) actively opposed to any action on environmental issues were combined with those who reported that they were neither sympathetic nor unsympathetic on environmental issues.[4] In this article, the three categories describing individuals' position on environmental issues are referred to as "proactive," "sympathetic," and "neutral."[5] The percentages of respondents indicating proactive, sympathetic, and neutral positions on environmental issues were 5.5 ($n = 76$), 62.2 ($n = 860$), and 32.3 ($n = 446$), respectively.

Engagement in Proenvironmental Behaviors

Engagement in proenvironmental behaviors was assessed using a list of seven items. Respondents were asked if, during the previous year, they had engaged in any of the following behaviors: (1) contributed money or time to an environmental or wildlife conservation group; (2) stopped buying a product because it caused environmental problems; (3) attended a public hearing or meeting about the environment; (4) contacted a government agency to get information or complain about an environmental problem; (5) read a conservation or environmental magazine; (6) watched a television special on the environment; and (7) voted for or against a political candidate because of the candidate's position on the environment.[6] Each proenvironmental behavior was dummy coded (1 = yes).

Sociodemographic Variables

Following earlier research (Dunlap and Heffernan 1975; Van Liere and Dunlap 1980; Theodori, Luloff, and Willits 1998), age, education, gender, income, and political ideology were included as sociodemographic factors. Age was measured in years. Education was coded as follows: (1) less than high school; (2) high school equivalent; (3) some college; (4) college degree; and (5) training beyond college. Gender was dummy coded (1 = male). Income was measured by 12 categories, ranging from (1) less than $10,000 to (12) $90,000 or more. Political ideology was measured by the categories: (1) liberal; (2) moderate–liberal; (3) moderate; (4) moderate–conservative; and (5) conservative.

Analyses

Differences in sociodemographic characteristics among the proactive, sympathetic, and neutral individuals were examined by calculating mean scores for each of the five variables for the three groups. The statistical significance of the observed variances were tested by analysis of variance procedures (*F*-tests). As shown in Table 1, there was considerable support for the proposition that differences in sociodemographic characteristics exist among individuals with different positions on environmental issues. Age, education, income, and political ideology reached statistical significance at the .001 level and revealed linear-type patterns. Of the three groups, proactive persons had the highest incomes and were the youngest, highest educated, and least politically conservative, while neutral individuals had the lowest incomes and were

TABLE 1 Means and Analysis of Variance Results for Sociodemographic Variables by Environmental Position

Variable	Proactive	Sympathetic	Neutral	*F* Score
Age	44.77	49.35	52.28	8.50[b]
Education	3.12	2.79	2.21	43.30[b]
Gender (1 = male)	0.39	0.53	0.47	4.21[a]
Income	5.77	5.60	4.82	15.03[b]
Political ideology	3.39	3.54	3.99	19.07[b]

[a]Significant at $p < .05$.
[b]Significant at $p < .001$.

the oldest, least educated, and most politically conservative. Gender attained statistical significance at the .05 level, but did not manifest a linear-type pattern like the other sociodemographic variables. The results indicated that proactive individuals were most likely to be female, followed by neutral persons. Sympathetic individuals were most likely to be male.

Logistic regression was used to analyze the differences in the levels of engagement in proenvironmental behaviors among individuals with different positions on environmental issues. The analysis was conducted in two phases. Table 2 reports the bivariate and net odds ratios for the effect of position on environmental issues on engagement in proenvironmental behaviors when neutral was treated as the reference category (Phase I).[7]

Phase I

Bivariate Results

At the bivariate level, as shown in Table 2, the results indicate that individuals with a proactive orientation on environmental issues were significantly ($p < .001$) more likely than neutral individuals to engage in all seven of the proenvironmental behaviors. The odds ratios ranged from 6.62 to 17.42. This indicated that while proactive persons were almost 7 times more likely than the neutral individuals to stop buying a product because it caused environmental problems, they were approximately 17 times more likely than the neutral individuals to contribute money or time to an environmental or wildlife conservation group. The bivariate results reported in Table 2 also indicate that sympathetic individuals were more likely than the neutral individuals to engage in proenvironmental behaviors. Each of the odds ratios reached statistical significance at the conventional .05 level, while all but two were significant at the .001 level.

Multivariate Results

As in earlier research, controls for age, education, gender, income, and political ideology were introduced into the model. As noted in Table 2, the results indicate that controlling for these variables had very little effect on the nature or significance levels of the odds ratios for either proactive or sympathetic individuals, although one statistically significant odds ratio did drop to nonsignificance. After introducing the control variables, sympathetic individuals did not differ significantly from neutral individuals in terms of attending a public meeting of hearing about the environment. Overall, based on the multivariate results reported in Table 2, respondents who expressed either proactive or sympathetic positions on environmental issues were more likely than those who expressed neutral positions on environmental issues to engage in the majority of proenvironmental behaviors. The likelihood of proactive individuals who engaged in each of the behaviors was stronger than that for sympathetic individuals in both the bivariate and multivariate models.

Phase II

Treating individuals who reported neutral positions on environmental issues as the reference category for the environmental position variable allowed us to test in Phase I (Table 2) whether proactive and sympathetic individuals differed significantly from the neutral individuals in terms of proenvironmental behaviors. What we could not test in Phase I was whether or not individuals with a proactive

TABLE 2 Odds Ratios for the Effect of Environmental Postion on Proenvironmental Behavior with "Neutral" as the Reference Category

	Odds ratios			
	Bivariate		Multivariate[a]	
Proenvironmental behaviors	Proactive	Sympathetic	Proactive	Sympathetic
Contributed money or time to an environmental or wildlife conservation group ($n = 971$)[b]	17.42[e]	4.78[e]	13.65[e]	3.96[e]
Stopped buying a product because it caused environmental problems ($n = 967$)	6.62[e]	2.73[e]	6.55[e]	2.62[e]
Attended a public hearing or meeting about the environment ($n = 970$)	11.70[e]	1.70[c]	11.09[e]	1.67
Contacted a government agency to get information or complain about an environmental problem ($n = 966$)	10.60[e]	2.44[d]	8.89[e]	2.19[d]
Read a conservation or environmental magazine ($n = 968$)	8.97[e]	2.75[e]	7.09[e]	2.39[e]
Watched a television special on the environment ($n = 966$)	12.41[e]	3.90[e]	9.01[e]	3.26[e]
Voted for or against a political candidate because of his/her position on the environment ($n = 955$)	7.86[e]	2.06[e]	7.02[e]	1.93[e]

[a]Odds ratios computed controlling for age, education, gender, income, and political ideology.
[b]n values vary due to missing data.
[c]Significant at $p < .05$.
[d]Significant at $p < .01$.
[e]Significant at $p < .001$.

orientation on environmental issues differed from their sympathetic counterparts in terms of their environmental behaviors. In order to do so, we recoded the environmental position variable. Table 3 reports the bivariate and net odds ratios for the effect of environmental position on proenvironmental behaviors when the sympathetic-to-environmental-issue s response was treated as the reference category (Phase II).

While the odds ratio values for the sympathetic individuals reported in Table 2 and those for the neutral persons shown in Table 3 are different (due to treating one versus the other as the reference category), it is important to note that the odds ratios for the neutral individuals in Table 3 are merely the inverse values of the odds ratios for sympathetic respondents in Table 2. The alpha values (or p values) for the sympathetic individuals in Table 2 and those for the neutral respondents in Table 3 are identical in both the bivariate and multivariate models.

Bivariate Results

As shown in Table 3, the bivariate results indicate that individuals who expressed proactive positions on environmental issues were significantly more likely than their sympathetic counterparts to engage in six of the seven proenvironmental behaviors. While proactive individuals were 2.43 times more likely than sympathetic individuals to stop buying a product because it caused environmental problems, they were 6.88 times more likely than sympathetic respondents to attend a public meeting or hearing about the environment. Proactive respondents did not differ significantly from sympathetic respondents in terms of their likelihood of watching a television special on the environment, despite the fact that they were 3.18 times more likely than sympathetic individuals to do so. The results reported in Table 3 also indicated that, at the bivariate level, neutral individuals were significantly less likely than sympathetic respondents to engage in each of the proenvironmental behaviors (the opposite of the findings reported in Table 2).

Multivariate Results

The multivariate results indicate that controlling for age, education, gender, income, and political ideology had very little effect on the size of the odds ratios for either proactive or neutral individuals (the odds ratios reported for the neutral individuals in Table 3 are simply the inverse of the odds ratios for the sympathetic respondents in Table 2). In brief, the most interesting finding in Table 3 was that proactive respondents were significantly more likely than sympathetic respondents to engage in six of the seven proenvironmental behaviors, net of the other variables in the model.

Examining the Sociodemographic Variables

An examination of the sociodeomgraphic variables indicated that age consistently failed to reach statistical significance (Table 4). Education was positively and significantly related to five of the proenvironmental behaviors. More highly educated respondents were significantly more likely than those with lower education to contribute money or time to an environmental or wildlife conservation group, to contact a government agency to get information about an environmental problem, to read a conservation or environmental magazine, to watch a television special on the environment, and to vote for or against a political candidate because of his/her position on the environment. While males were significantly more likely than females

TABLE 3 Odds Ratios for the Effect of Environmental Position on Proenvironmental Behavior with "Sympathetic" as the Reference Category

	Odds ratios			
	Bivariate		Multivariate[a]	
Proenvironmental behaviors	Proactive	Neutral	Proactive	Neutral
Contributed money or time to an environmental or wildlife conservation group ($n = 971$)[b]	3.64[e]	0.21[e]	3.45[e]	0.25[e]
Stopped buying a product because it caused environmental problems ($n = 967$)	2.43[c]	0.37[e]	2.50[c]	0.38[e]
Attended a public hearing or meeting about the environment ($n = 970$)	6.88[e]	0.59[c]	6.64[e]	0.60
Contacted a government agency to get information or complain about an environmental problem ($n = 966$)	4.35[e]	0.41[d]	4.06[e]	0.46[d]
Read a conservation or environmental magazine ($n = 968$)	3.26[d]	0.36[e]	2.96[d]	0.42[e]
Watched a television special on the environment ($n = 966$)	3.18	0.26[e]	2.77	0.31[e]
Voted for or against a political candidate because of his/her position on the environment ($n = 955$)	3.82[e]	0.49[e]	3.64[e]	0.52[e]

[a]Odds ratios computed controlling for age, education, gender, income, and political ideology.
[b]n values vary due to missing data.
[c]Significant at $p < .05$.
[d]Significant at $p < .01$.
[e]Significant at $p < .001$.

TABLE 4 Odds Ratios for the Sociodemographic Variables

	Odds ratios[a] for sociodemographic variables				
Proenvironmental behaviors	Age	Education	Gender	Income	Political ideology
Contributed money or time to an environmental or wildlife conservation group ($n = 971$)[b]	1.00	1.19[d]	1.17	1.12[d]	0.86[c]
Stopped buying a product because it caused environmental problems ($n = 967$)	1.00	0.97	1.41[c]	0.99	0.89
Attended a public hearing or meeting about the environment ($n = 970$)	0.99	1.13	0.47[d]	1.01	1.01
Contacted a government agency to get information or complain about an environmental problem ($n = 966$)	1.00	1.21[c]	1.00	1.00	0.94
Read a conservation or environmental magazine ($n = 968$)	1.00	1.30[e]	0.80	1.03	0.88[c]
Watched a television special on the environment ($n = 966$)	1.00	1.35[e]	0.96	1.00	0.83[c]
Voted for or against a political candidate because of his/her position on the environment ($n = 955$)	1.01	1.35[e]	1.04	0.91[d]	0.93

[a]Computed controlling for position on environmental issues.
[b]n values vary due to missing data.
[c]Significant at $p < .05$.
[d]Significant at $p < .01$.
[e]Significant at $p < .001$.

to stop buying a product because it caused environmental problems, females were significantly more likely than males to attend a public meeting or hearing about the environment. Respondents with higher incomes were significantly more likely than those with lower incomes to contribute money or time to an environmental or wildlife conservation group, and significantly less likely to vote for or against a political candidate because of his or her position on the environment. Politically liberal respondents were significantly more likely than their politically conservative counterparts to contribute money or time to an environmental or wildlife conservation group, read a conservation or environmental magazine, and watch a television special on the environment.

Summary and Concluding Comments

These data provided substantial support for our two hypotheses, namely, (1) that differences in sociodemographic characteristics exist among individuals with variant positions on environmental issues, and (2) that individuals with different positions on environmental issues exhibit dissimilar levels of proenvironmental behaviors. The results of the analysis of variance tests revealed that young individuals, the more highly educated, people with higher incomes, and those with liberal political ideologies were more likely than their opposites to maintain proactive positions on environmental issues. While gender reached statistical significance, the results were not as clear-cut.

The findings of the logistic regression in Phase I indicated that, overall, individuals who maintained either proactive or sympathetic positions on environmental issues were more likely than those who were classified as neutral to engage in proenvironmental behaviors. The likelihood of proactive persons to partake in each of the behaviors was stronger than that for sympathetic respondents. The odds ratios changed only slightly when controls for a variety of sociodemographic characteristics were added. Taken together, the Phase II logistic regression analyses revealed that proactive individuals were more likely than sympathetic individuals to engage in proenvironmental behaviors. Again, the odds ratios changed only slightly after the addition of the control variables.

Although both proactive and sympathetic persons participated more frequently in proenvironmental behaviors than did their neutral counterparts, sympathetic individuals engaged in these same behaviors less often than did those who expressed proactive environmental positions. These results have practical implications for environmental protection and natural resource management issues. For example, to the extent that behaviors often change, well-designed environmentally oriented educational programs that motivate and encourage understanding, exploration, participation, and group problem solving might lead to the adoption and facilitation of proenvironmental behaviors (Kaplan 2000). Moreover, informational campaigns that emphasize environmentally responsible behaviors could foster proactive environmental positions.

Despite the statistical significance of our findings, several limitations of these data must be considered. One limitation involved the measurement of position on environmental issues. In this study, position on environmental issues was represented by a global measure. Future research examining similar linkages might incorporate measures of domain-specific positions. A second limitation of this study dealt with the measurement of proenvironmental behaviors. Individuals were asked only to indicate whether or not they engaged in any of the listed behaviors. In order to fully

understand the links between position on environmental issues and engagement in proenvironmental behaviors, future studies should examine the frequency of participation in such behaviors.

Notes

1. See Luloff et al. (1995), Theodori, Luloff, and Willits (1998), and Theodori and Luloff (2000) for a detailed description of the typology and each study site.

2. No statistical differences in regard to the available sociodemographic characteristics were found between the Lancaster sample and those from Snyder, Bedford, and Crawford. The percentages of Old Order Amish and Mennonites from the Lancaster site totaled 12 and 5, respectively. The analysis and reported findings include data on both groups. Removal of the Amish and Mennonites from the sample did not change the nature or pattern of the results reported here.

3. Using mail survey techniques in three study sites, a response rate of about 52% was obtained, resulting in 370 completed questionnaires from Snyder, 343 from Bedford, and 385 from Crawford. Using the drop-off/pick-up technique in Lancaster, a response rate of 72% was achieved, resulting in 393 completed questionnaires.

4. The percentages of respondents who indicated that they were unsympathetic to environmental issues and actively opposed to any action on environmental issues were 3.8 ($n = 52$) and 1.3 ($n = 18$), respectively. These respondents were combined with the 376 individuals who reported that they were neither sympathetic nor unsympathetic. The newly created category contained 446 respondents and represented 32.3% of the sample.

5. We chose the label "neutral" for this category due to the fact that an overwhelming majority of respondents in this group, roughly 84% (376 of 446), indicated that they were neither sympathetic nor unsympathetic to environmental issues. It is important to keep in mind that the small numbers of respondents who reported being unsympathetic to environmental issues ($n = 52$) and actively opposed to any action on environmental issues ($n = 18$) are subsumed under this label.

6. In principal, three of the items could indicate anti- rather than proenvironmental behavior. Respondents could have attended a meeting, contacted a government agency, or voted for a candidate to prevent, rather than to promote, environmental protection. However, the correlation of these variables with unambiguously proenvironmental behaviors indicated that such intentions were rare.

7. An odds ratio (θ) is e (natural logarithm) raised to the power of b (the metric logit coefficient); θ refers to the effect of a one-unit change in X on the odds of Y. It has a "times as likely" interpretation. θ can equal any nonnegative number. When X and Y are independent, θ equals 1. A value of 1 generally serves as a baseline for comparison. Odds ratios on either side of 1 reflect certain types of associations. An odds ratio greater than 1 ($1 < \theta < \infty$) indicates a positive association, while an odds ratio less than 1 ($0 < \theta < 1$) denotes a negative association. Values of θ farther from 1 in either direction designate stronger levels of association (Agresti 1996; Liao 1994).

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