# ENVIRONMENTAL ACTIVISM AS COLLECTIVE ACTION

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ABSTRACT: The literature on environmental activism has failed to produce a model of individual decision making explicitly linked to the logic of collective action. To remedy this problem, this article adapts the collective interest model developed by Finkel, Muller, and Opp to explain protest behavior and argues environmental activism is a function of citizen beliefs about collective benefits, the ability to influence collective outcomes, and the selective costs/benefits of participation. The author tests the hypotheses of the collective interest model using data from a survey of 460 residents of a coastal watershed and national data on 1,606 respondents from the 1993 General Social Survey Environment Battery. The author's findings corroborate several central propositions of the collective interest model and provide a theoretical account of environmental activism that synthesizes many previous results.

**"Think globally. Act locally."** Perhaps without knowing it, the coiners of this venerable call to arms captured the essence of environmental activism as collective action. Whether conceptualized as providing a clean environment, preventing the degradation of common-pool resources, or influencing the public policy process, environmental activism has public good characteristics. In particular, it is costly to exclude one person from enjoying the benefits produced by the environmental activism of another. Thus, rational citizens have an incentive to free ride on the activism of others, enjoying the benefits without paying the costs. Collective action problems occur when most citizens adhere to this logic, leading to an undersupply of environmental activism or oversupply of environmental harms (Hardin, 1982). Free-riding

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incentives are especially powerful in large groups—such as those facing global problems—where individual actions have only a minuscule influence on collective outcomes (Olson, 1970). Hence, to the extent acting locally increases the chance of influencing local environmental quality or policy, the rational citizen may perceive more benefits from environmental activism.

Although political economists have long recognized the public good nature of environmental activism, models of individual behavior developed in environmental studies rarely address the logic of collective action. Consequently, models that relate environmental activism to perceived environmental threats, sociodemographic characteristics, and environmental values do not provide a satisfactory account of individual decision making that explains why these variables matter (Elliot, Seldon, & Regens, 1997; Jones & Dunlap, 1992; Mohai, 1985; Pelletier, Legault, & Tuson, 1996; Rohrschneider, 1990; Samdahl & Robertson, 1989; Seguin, Pelletier, & Hunsley, 1998). Many of these studies treat the influence of these factors as self-evident—for example, people who perceive environmental threats and have environmental values are more likely to act, without considering the calculus of individual decision making in a collective action setting. Even those studies that do consider collective action problems do not provide a general theoretical model of individual decision making (Diekman & Preisendorfer, 1998; Everett & Peirce, 1992; Karp, 1996).

This article attempts to address the weaknesses in the literature by developing a model of environmental activism explicitly linked to the logic of collective action. To do so, I adapt the collective interest model used in sociology and political science to explain protest behavior and social movement participation, which also have public good characteristics (Finkel & Muller, 1998; Finkel, Muller, & Opp, 1989; Gibson, 1997; Klandermans, 1984). The collective interest model posits that people will participate in a collective endeavor when the expected value of participation is positive. People judge the expected value by assessing the value of the public good, the probability their participation will affect collective outcomes, and the selective benefits/costs of participation. By explicitly addressing the link between collective action and individual decision making, my adaptation of the collective interest model encompasses many of the variables from the laundry list considered by other environmental researchers.

In the interest of methodological pluralism, I test the model using both a national sample of 1,606 U.S. citizens from the 1993 General Social Survey (GSS) that included a battery of questions about environmental issues and a survey of environmental attitudes among 460 residents from five towns on Eastern Long Island, New York, adjacent to the Peconic Bays estuarine watershed. Although neither survey was explicitly designed to test the

collective interest model, both surveys contain measures of most key concepts in the model. Furthermore, the GSS contains measures of both environmental activism intentions and self-reported behaviors, whereas the Peconic survey allows comparison of a local and national sample. To the extent that both surveys led me to similar conclusions with different survey samples and questions, I gain more confidence about the generalizability of the findings.

The next section summarizes the general hypotheses of the collective interest model and then discusses how those hypotheses manifest themselves in the context of environmental activism. I then test the hypotheses using a variety of regression techniques. The conclusion discusses the contributions and limitations of the collective interest model and my findings for understanding environmental activism.

## APPLYING THE COLLECTIVE INTEREST MODEL TO ENVIRONMENTAL ACTIVISM

The purpose of the collective interest model is to "incorporate the demand for the public good into an individual's utility calculus without violating the logic of free-riding" (Finkel et al., 1989, p. 886). Following a rational actor assumption, the collective interest model argues people will participate in environmental activism when the subjective expected value of participation is positive. The expected value calculation depends on five factors: (a) the perceived value of the collective good produced by successful environmental action, (b) the increase in the probability of success if the individual participates, (c) the extent to which the actions of the group as a whole are likely to be successful, (d) the selective costs of participation, and (e) the selective benefits of participation. Following Olson (1970), selective benefits/costs are defined as the material, social, or psychological consequences of participation that accrue only to participating individuals.[1] The basic relationships are summarized with the following equation:

$$EV = [(p_g + p_i)^* V] - C + B,$$

where EV (environmental activism) is the expected value of participation, $p_g$ is the probability that the group will be successful (group efficacy), $p_i$ is the marginal influence of the individual's contribution on the probability of success (personal efficacy), V is the value of the collective good, C is the selective cost of participation, and B is the selective benefit available from participation.

Finkel and Muller (1998) referred to the terms in brackets (V, $p_i$, and $p_g$) as the collective interest variables. The collective interest variables incorporate the logic of free riding by acknowledging that the contribution of a single individual only raises the probability of successfully providing a public good by a small amount. From this perspective, how individuals perceive their own personal influence on collective outcomes is the critical value; *ceteris paribus*, the expected value of collective action increases as perceived personal efficacy ($p_i$) increases. Olson's (1970) logic of collective action suggests that $p_i$ is close to zero in large groups; when an individual has little chance of influencing collective outcomes, it is rational to free ride on the efforts of others. The collective interest model, on the other hand, suggests that people systematically overestimate their personal efficacy and thus are more likely to engage in collective action than Olsonian logic would predict. Furthermore, the collective interest model assumes individuals consider group efficacy ($p_g$) when making decisions because it is not rational to contribute to an ineffective group.[2] Holding personal and group efficacy constant, higher valued public goods increase the expected value of environmental activism. Similarly, as the perceived costs of participation decrease, and selective benefits increase, the expected value of environmental activism increases.

By placing primary emphasis on the individual's subjective beliefs about the costs and benefits of collective action, the collective interest model suggests an analytical strategy of developing hypotheses concerning what types of individual beliefs and attitudes, demographic characteristics, and situational/institutional variables will raise or lower the various components of the model. Table 1 lists the major empirical variables I will use to operationalize the concepts of the collective interest model. The signs in parentheses indicate the expected direction of influence for each variable on the level of environmental activism. The next sections discuss the logic of each variable in more detail.

### COLLECTIVE BENEFITS OF ENVIRONMENTAL ACTIVISM

The expected value of environmental activism is an increasing function of the individual's valuation (V in the above equation) of the collective benefits of successful action. The primary collective benefit of environmental activism is the development of public policies designed to prevent pollution problems or, conversely, to protect the natural resources that support the economy and health of human communities. Hence, I hypothesize that citizens who believe they are threatened by environmental problems are more likely to

**TABLE 1**
**Variables Influencing Citizen Support for Local Environmental Policy**

| *Collective Interest Variable* | *Selective Benefit* | *Selective Cost* |
|---|---|---|
| (V) Problem severity (+) | Recreational/occupational use of natural resources (+) | Income (+) |
| (V) Economic importance (+) | Republican Party (+) identification (–) | Education (+) |
| ($p_i$) Personal efficacy (+) | Environmental values (+) | Age (+) |
| ($p_g$) Government efficacy(+) | | Female (+) |
| ($p_g$) Citizen efficacy (+) | | Minority (–) |
| | | Environmental knowledge (+) |
| | | Social capital (+) |

NOTE: V = value of the collective good; $p_i$ = marginal influence of the individual's contribution on the probability of success; $p_g$ = probability that the group will be successful.

participate in environmental activism. This hypothesis explicitly links the collective interest model to the many other studies that demonstrate a positive correlation between perceptions of environmental threats and environmental behavior (Mohai, 1985; Rohrschneider, 1990; Samdahl & Robertson, 1989; Seguin et al., 1998).

The concept of sustainable development suggests that environmental problems should also be analyzed in terms of the positive synergy between environmental health and economic prosperity (van den Bergh & van der Straaten, 1994). The economies of many communities depend on maintaining environmental quality. Citizens who believe the economic health of their community is linked to the environmental health of the ecosystem are also more likely to perceive collective benefits.

#### PERSONAL, GOVERNMENT, AND CITIZEN EFFICACY

Personal efficacy refers to the belief that individual participation in environmental activism will make a difference. Finkel et al. (1989) found personal efficacy to be one of the strongest predictors of protest behavior. Mohai (1985) reported similar findings regarding environmental activism, where people who believe they have an ability to influence the political system have higher levels of environmental concern. Consistent with these findings, I hypothesize that people with higher levels of personal efficacy ($p_i$) are more likely to participate in environmental activism.

Unfortunately, both the original formulation of the collective interest model and Mohai (1985) confound the separate notions of internal and

external political efficacy (Craig, Niemi, & Silver, 1990; Niemi, Craig, & Mattei, 1991). Internal efficacy refers to beliefs about one's own competence to understand and participate effectively in politics, whereas external political efficacy refers to beliefs about the responsiveness of government to citizen demands. The distinction between external and internal political efficacy is important because the ability of individual citizens to influence political outcomes requires both competent citizens and a responsive government. Although the question wording is not identical, the personal efficacy measures I use in this study are analogous to internal-political efficacy.

However, personal efficacy is misplaced if environmental activism is targeted at an unresponsive government or ineffective group. My adaptation of the collective interest model argues that group efficacy ($p_g$) depends both on beliefs about government responsiveness and capability and perceptions about whether other group members will cooperate in the collective endeavor. I will call the former belief government efficacy and the latter citizen efficacy.

Government efficacy is especially important in public policy arenas in the United States, where the policy implementation and funding decisions of elected officials and administrative agencies heavily influence collective outcomes. This is certainly the case in U.S. environmental policy, where decisions by federal, state, and local environmental agencies all combine to determine the outcomes in a particular arena. If a citizen's political demands fall on deaf ears or incapable hands, the expected value of environmental activism is reduced. Thus, I expect citizens who believe that government actors are responsive and have an important influence on the environment are more likely to participate in environmental activism.

In the context of collective action, citizen efficacy refers to a belief that other citizens are trustworthy and will engage in behavior that can influence collective outcomes. Political economists argue that cooperation in the many ongoing collective dilemmas that characterize modern society depends on the development of trust and norms of reciprocity (Axelrod, 1984; Scholz & Lubell, 1999a, 1999b). The expected value of environmental activism is reduced if individuals do not trust others to reciprocate with activism of their own. People are only willing to cooperate if they trust others to cooperate as well. Thus, in addition to government efficacy, I expect these perceptions of citizen efficacy to positively influence the likelihood of participating in environmental activism.

## SELECTIVE BENEFITS AND COSTS OF ENVIRONMENTAL ACTIVISM

Environmental activism may also provide material, social, and psychological selective benefits and costs. Citizens are more likely to receive material benefits from environmental activism if they use natural resources for recreational or occupational purposes. Citizens with strong environmental values are more likely to receive psychological benefits from expressing their preferences through environmental activism or enjoy the social benefits of participating with like-minded citizens. Conversely, citizens with more conservative ideologies are less likely to have preferences for environmental protection and thus perceive less selective benefits.[3]

The ability to pay the selective costs of environmental activism is related to the availability of the money, time, and civic skills necessary for effective participation (Brady, Verba, & Schlozman, 1995). In turn, the availability of money, time, and civic skills is linked to the many demographic variables that are traditionally considered in research on environmental behavior. The general conclusion of the literature is that better educated, higher income, younger, female, and nonminority citizens are more likely to support environmental protection and that pattern has not changed over time (Jones & Dunlap, 1992; Samdahl & Robertson, 1989). The costs of environmental activism should be lower for educated citizens because they have more civic skills. The flexible budget constraints of higher income individuals allow them to better absorb the costs of environmental activism. Younger people may have more time available to devote to environmental activism or have stronger preferences for environmental quality (Jones & Dunlap, 1992; Mohai & Twight, 1987).[4] Despite changing attitudes toward gender roles, the persistent "household division of labor" still observed in modern societies may provide women more time to pursue environmental activism (South & Spitz, 1994; Steel, 1996).[5] Minorities may face significant barriers to participation derived from a history of discrimination or lack of access to political resources (Parker & McDonough, 1999). All of these demographic variables fit neatly into the collective interest model.

Environmentally knowledgeable citizens will also face lower costs of environmental activism because they are better able to target their activities. Last, citizens who participate in many different types of groups—what Putnam (1993) called social capital—gain experience with collective action and exposure to recruitment networks that also reduce the costs of environmental activism (Everett & Peirce, 1992). In the next section, I discuss the research design used to test the theoretical relationships summarized in Table 1.

## RESEARCH DESIGN AND ANALYSIS

The data for my analysis come from two separate surveys: (a) the 1993 GSS of a national sample of 1,606 U.S. citizens and (b) a survey of residents in five towns (Riverhead, Southampton, East Hampton, Southold, and Shelter Island) that are adjacent to the Peconic Bays watershed on the eastern end of Long Island, New York. The sample design for the GSS is available online at http://www.icpsr.umich.edu/GSS/. The Peconic survey consisted of a simple random sample of 657 residents listed in the Peconic telephone directory, of which 460 (70%) agreed to participate (principal investigator Tony Napoli, personal communication, November 1, 1999). These two surveys not only offer alternative measurements of the concepts in the collective interest model but also allow examination of environmental activism on both the national and local scales.

The modeling strategy described below assumes that measures of collective interest variables and selective costs/benefits are causes of environmental activism. This is a safe assumption for variables that are relatively stable over time, such as those used to measure socioeconomic characteristics.[6] The assumption is less safe for attitude variables such as personal efficacy, which could be adjusted by a respondent to be consistent with reported activism behavior or intentions. Moreover, participation in environmental activism may lead to increases in perceptions of environmental threats and personal efficacy.

Although complex causal processes of this sort may overstate the relationship between environmental activism and the collective interest variables in a cross-sectional model where time-order cannot be established, they do not invalidate the collective interest model. For the case of political protest behavior, Finkel and Muller (1998) used a panel study of West German citizens to show that participation in past protest behavior affects current beliefs about personal efficacy, whereas past beliefs about political efficacy predict current protest behavior. As with protest behavior, the collective interest model suggests environmental activism "is characterized by a series of mutually reinforcing relationships among prior participation, group memberships, and key variables in the collective interest model" (Finkel & Muller, 1998, p. 45). Unfortunately, statistically untangling these mutually reinforcing relationships with more precision requires a panel design similar to the one used by Finkel and Muller (1998). Hence, more cautious readers may wish to interpret the statistically significant relationships found in this article as correlational rather than causal evidence for the collective interest model, although I will continue to use causal language.

**DEPENDENT AND INDEPENDENT VARIABLES**

I examine two main dependent variables, activism behavior and activism intentions (see the appendix for question wording and scale construction of all variables). To measure activism behavior, I sum three questions in the GSS that ask citizens to report whether they have joined an environmental group, signed an environmental petition, or taken part in a protest about environmental issues in the past 5 years.[7] The GSS and Peconic survey both measure activism intentions. In the GSS, activism intentions is the average response to three questions about whether the respondent is willing to sacrifice material well-being for environmental protection, where high scores equal *very willing* and low scores equal *not at all willing* (alpha = .84). In the Peconic survey, activism intentions report intentions to contribute directly toward clean-up of the Peconic Bays by volunteering time or money for 14 different activities (alpha = .75). Although there is some debate about the connection between activism intentions and activism behavior (Diekmann & Preisendorfer, 1998; Tarrant & Cordell, 1997), I argue that intentions are a necessary but not sufficient precondition for behavior. The collective interest model should apply to both stages of environmental activism, and differences between how the model applies to both types of dependent variables may shed more light on the attitude-behavior debate.

The collective benefits (V) of environmental protection are measured by perceived problem severity in both surveys. In addition, the Peconic Bays survey has a measure of economic importance, which is the belief that the environmental health of the watershed is an important component of the economic welfare of the community.

Several measures are related to the probability that collective action will be successful. Personal efficacy ($p_i$) measures perceptions of whether that individual's behavior will influence environmental outcomes. In the GSS, government efficacy is a measure of whether the citizen believes public authorities are interested in the problems of the average citizen. In the Peconic survey, Government Efficacy is a combined scale (alpha = .81) representing respondents' perceptions about the influence of local, state, and federal government actors on environmental outcomes. The Citizen Efficacy Scale (alpha = .63) in the Peconic survey combines two items measuring the perceived influence of waterfront residents and the general public on environmental outcomes. Citizen efficacy in the GSS is measured with a general question about whether most people can be trusted. Hence, I am able to use measures that capture the responsiveness and capability aspects of government and citizen efficacy, both of which are related to group efficacy ($p_g$). The GSS questions tap into very general beliefs about society, which are

translated into a variety of collective action situations, including environmental activism. The Peconic questions, on the other hand, are more explicitly linked to environmental issues.

Selective benefits are measured most comprehensively in the GSS, which includes a measure of environmental values that emphasizes the perceived trade-off between environmental protection and economic growth, and party identification (7-point scale: 1 = *strong Democrat*, 7 = *strong Republican*). The Peconic survey includes dummy variables representing democratic and independent-party identifiers and also dummy variables measuring whether the Peconic Bays are used for recreational or occupational purposes.

I use standard measures of demographic variables as indicators of selective costs, including income, education, gender, minority status, and age, although the surveys code these variables in slightly different manners.[8] In the GSS, environmental knowledge is measured using a count of correct answers to seven true or false questions about environmental facts (alpha = .62). In the Peconic survey, Environmental Knowledge is a scale (alpha = .76) that averages responses to a question asking whether the respondent has learned "a lot" or "nothing" about the environment from 11 different information sources.

## ANALYSIS AND RESULTS

Table 2 reports results of several multivariate analyses of activism behavior (columns 2 and 3) from the GSS and activism intentions from both surveys (columns 4 and 5).[9] The models in columns 3 and 4 omit government/citizen efficacy because those questions were asked to only a small subset of GSS respondents. With the exception of the government/citizen efficacy variables, I confine my discussion of the GSS results to the models in columns 3 and 4.

Because the activism intentions (columns 3 and 4) variables have many values, it is reasonable to assume they are interval-level variables and use ordinary least squares (OLS) regression to estimate the effects of the independent variables. The coefficients for OLS regression are interpreted in the usual way as the marginal change in the dependent variable for a one-unit change in the dependent variable, holding all other variables constant. Coefficients with positive (negative) signs increase (decrease) the expected value of the dependent variable. To facilitate interpretation, all attitude variables, both dependent and explanatory, are linearly transformed to the [0, 1] range. This allows me to interpret the slope coefficients of regression models in

terms of the effect of moving across the entire range of the independent variable, which is a simple way to interpret substantive results when the variables lack natural units.

Because the activism behavior measure ranges between [0, 3], it is not appropriate for OLS regression. Hence, I use maximum likelihood to estimate ordered probit models that assess the influence of each independent variable on the latent probability of observing between zero and three activism behaviors.[10] The statistical significance and direction of the ordered probit coefficients are interpreted similar to a regression; that is, variables with positive coefficients increase the probability of activism behavior. However, ordered probit coefficients cannot be directly interpreted in terms of marginal change as with OLS regression. Instead, the ordered probit estimates are used to calculate the probability of observing a particular outcome, conditional on the values of all independent variables.[11] These probabilities are essentially transformations of the ordered probit coefficients and cannot be directly seen in Table 2. When appropriate, I will use the ordered probit estimates to calculate the discrete change in the probability of observing one activism behavior from moving across the entire range of the relevant independent variable, holding all other variables at their mean levels (see Long, 1997, for more information on estimating and interpreting ordered probit).

For both the OLS and ordered probit models, readers interested in the significance and direction of the relationships between the independent and dependent variables need only examine the sign and statistical significance of the coefficients reported in Table 2. To avoid overwhelming the reader, I will confine my own discussion to the significance and direction of the coefficients unless the findings warrant a more precise discussion. When greater precision is needed, I will report the discrete change in the probability of observing one activism behavior as calculated from the ordered probit coefficients.

#### THE EFFECTS OF THE COLLECTIVE INTEREST VARIABLES

The coefficient estimates corroborate several important aspects of the collective interest model. Perceived environmental threats significantly increase activism behaviors and activism intentions in all models. Similarly, personal efficacy has a significant and positive effect on environmental activism and behavior in all models. People who believe the environment is unhealthy and that they can do something about it are more likely to express intentions to engage in environmental activism and to actually act on those intentions. It is interesting that a surprisingly large proportion of people believe they can make a difference in both samples. Fifty-four percent of GSS respondents

**TABLE 2**
**Collective Interest Models of Environmental Activism Behavior and Intentions**

| | *Dependent Variable* | | | |
|---|---|---|---|---|
| *Explanatory Variable* | *Activism Behavior (GSS,* N *= 395)* | *Activism Behavior (GSS restricted model,* N *= 1,207)* | *Activism Intentions (GSS,* N *= 1,271)* | *Activism Intentions (Peconic Bays,* N *= 324)* |
| Collective interest variable | | | | |
| Environmental threat | 1.32 (.44)*** | 0.80 (.25)*** | 0.29 (.04)*** | 1.22 (.67)** |
| Economic importance | NA | NA | NA | 0.16 (.65) |
| Personal efficacy | 0.73 (.32)** | 0.65 (.17)*** | 0.11 (.03)*** | 1.87 (.42)*** |
| Government efficacy | 0.19 (.15) | — | — | 1.59 (.72)*** |
| Citizen efficacy | 0.16 (.14) | — | — | –0.17 (.58) |
| Selective Benefit | | | | |
| Recreational use | NA | NA | NA | 0.29 (.30) |
| Occupational use | NA | NA | NA | –0.13 (.51) |
| Democrat (Peconic) | NA | NA | NA | 0.68 (.35)* |
| Independent (Peconic) | NA | NA | NA | 0.69 (.30)** |
| Party identification (GSS) | –0.09 (.04)** | –0.07 (.02 )*** | –0.01 (.003)*** | NA |
| Environmental values | 0.44 (.40) | 0.87 (.21)*** | 0.30 (.03)*** | NA |
| Selective Cost | | | | |
| Income | 0.01 (.02) | 0.006 (.008) | 0.001 (.001) | 0.09 (.08) |
| Education | 0.09 (.03)*** | 0.08 (.01)*** | 0.003 (.002) | 0.16 (.08) |

| | | | | |
|---|---|---|---|---|
| Age | –0.01 (.005)* | –0.005 (.002)** | 0.0004 (.0004) | –0.41 (.09)*** |
| Female | 0.02 (.14) | –0.03 (.08) | –0.03 (.01)* | 0.20 (.27) |
| Minority (Peconic) | NA | NA | NA | –0.44 (.36) |
| Black (GSS) | –0.62 (.28)** | –0.39 (.15)** | –0.004 (.02) | NA |
| Other minority (GSS) | 0.02 (.38) | –0.15 (.19) | –0.02 (.03) | NA |
| Environmental knowledge | 0.10 (.06)* | 0.11 (.03)*** | 0.01 (.01) | 2.21 (.71)*** |
| Social capital | 0.06 (.04)* | 0.05 (.02)** | 0.01 (.003) | NA |
| Threshold (ordered probit)/ constant (regression) | | | | |
| Threshold 1 | 3.22 | 2.95 | 0.06 (.06) | 6.51 (.94)*** |
| Threshold 2 | 4.48 | 4.14 | | |
| Threshold 3 | 5.50 | 5.11 | | |
| Model fit | Mckelvey and Zavonia $R^2$ = .39 $\chi^2(14)$ = 115.94*** | Mckelvey and Zavonia $R^2$ = .30 $\chi^2(12)$ = 273.26*** | $R^2$ = .21 $F(12, 1258)$ = 28.21*** | $R^2$ = .22 $F(12, 319)$ = 7.81*** |

NOTE: GSS = General Social Survey. Cell entries in columns 2 and 3 are unstandardized ordered probit coefficients, which are interpreted in the text in terms of the probability of observing a single activism behavior. Cell entries in columns 4 and 5 are unstandardized ordinary least squares regression coefficients, which are interpreted in the standard fashion. Standard errors are in parentheses. NA means that the variable is not available for that particular survey.
Hypothesis tests of coefficient = 0: *$p < .10$. **$p < .05$. ***$p < .01$.

disagree or strongly disagree that it is too difficult for them to do anything about the environment. Fifty-seven percent of Peconic Bays respondents believe their lifestyle has at least "somewhat" of an impact on Peconic Bays water quality. These results support the hypothesis that people overestimate their influence on collective outcomes.

A more precise substantive interpretation of the results reveals that the effect of personal efficacy relative to environmental threat is stronger when the survey question mentions specific behaviors.[12] The GSS activism intentions model features very general questions about sacrificing economic self-interest for environmental protection. Moving across the range of the environmental threat variable produces a .29 change in the GSS Activism Intentions Scale, which is almost 1/3 of the possible change (given the 0 to 1 range of the dependent variable). The corresponding effect of personal efficacy on GSS activism intentions is .11—more than 50% smaller than for the environmental threat variable. In the GSS activism behavior model, the effect of personal efficacy is almost equal to that of the environmental threat variable. Holding all other variables at their means, moving across the entire range of the environmental threat variable increases the probability of observing one activism behavior by .19, whereas moving across the entire range of the personal efficacy behavior increases the probability of observing one activism behavior by .16. The effect of personal efficacy relative to environmental threat is strongest in the Peconic survey, where the activism intentions question asks about willingness to engage in specific behaviors. In the Peconic survey, moving across the range of the environmental threat variable increases the number of intended behaviors by 1.22, and 1.87 for the Personal Efficacy Scale.

These findings suggest that beliefs about "making a difference" are more salient when citizens are contemplating or engaging in very specific activism behaviors. Furthermore, the larger relative importance of personal efficacy in the Peconic Bays implies that "thinking locally" may enhance the influence of personal efficacy. While it is true that differences in question wording prevent a definitive conclusion, this difference between local and national scales echoes the environmental slogan mentioned in the introduction.

Government efficacy, defined as capacity to influence the environment, increases activism intentions in the Peconic Bays. However, the more abstract measure of government efficacy in terms of responsiveness is insignificant in the GSS sample. Measures of citizen efficacy are insignificant in all models. The conclusions about government and citizen efficacy, however, are only tentative at this point given problems with these measures. I will discuss these limitations in more detail in the conclusion.

### THE EFFECTS OF SELECTIVE BENEFITS

Two measures of selective benefits, environmental values and party identification, are significant in all models where they appear. People who believe environmental health should not be sacrificed for economic self-interest are more likely to participate in environmental activism. Moving across the range of the GSS environmental values variable increases the probability of observing one activism behavior by .21 and leads to a .30 change on the Environmental Intentions Scale—an even stronger effect than the collective interest variables. In the GSS sample, party identifiers closer to strong Republican are less likely to express intentions or report behavior, whereas Democrats and Independents in Peconic Bays are more likely to express intentions. Even controlling for perceptions of environmental threats and other collective interest variables, citizens with certain sets of values receive psychological and possibly social benefits from environmental activism.

### THE EFFECTS OF SELECTIVE COSTS

The selective cost measures demonstrate how the typical demographic variables considered in other research fit into the broader theoretical framework of the collective interest model. Higher educated and younger respondents are more likely to engage in activism behaviors. Blacks are less likely, and gender makes no difference. Income has no effect in any model. This may occur because although higher income allows people to absorb the costs of environmental activism (what economists call an income effect), it also may raise the price of time spent on nonwork activities (substitution effect). These competing forces may cancel out the effect of income on activism, but further study is needed to see when the income effect dominates the substitution effect, which would lead to an increase in activism behavior.

Differences between the activism behavior and intentions models are interesting for these demographic measures. For activism behaviors, demographic measures related to selective costs have significant effects. These effects disappear for activism intentions, suggesting that activism intentions are essentially a costless expression of opinion. Costs may only be experienced when actual behavior is required. Although there is some debate as to whether the social bases of environmental concern may be expanding over time (Buttel & Flinn, 1974; Jones & Dunlap, 1992), the social bases of environmental behavior are probably even more rigid because the costs of environmental activism are similar to the costs of other forms of political participation.

Social capital and environmental knowledge also reduce the selective costs of environmental activism. Participation in a wide variety of groups provides civic skills that are translated into the context of environmental activism. However, as with the demographic variables, participation in other groups only matters when the costs of actual behavior are under consideration.

In the GSS data, the effect of environmental knowledge is most apparent for activism behavior and is equal in strength to the effects of the collective interest variables. In the Peconic survey, environmental knowledge has a stronger influence on activism intentions than the collective interest variables. This may reflect a second difference between the local and national scale. The rise of national media has significantly lowered the cost of acquiring information about national and global environmental problems. Ironically, the costs of acquiring information about local problems, which often have more immediate consequences for an individual, may not have declined at the same pace. Hence, information about local problems may be a more valuable stimulator of local activism than similar information at a national or global scale.

## CONCLUSION

This article contributes to knowledge about environmental activism in several ways. First, the collective interest model explicitly links the calculus of individual decision making to the logic of collective action. Models of environmental activism must explore the implications of free-riding incentives. The consistent ability of measures of personal efficacy to explain environmental activism and intentions demonstrates that people think about whether their actions can affect collective outcomes. Even when the collective benefits of environmental activism are high, the individual utility of environmental activism is near zero when people think they cannot affect collective outcomes. Fortunately for the goals of the environmental movement, many people perceive a high level of personal efficacy.

Second, the collective interest model provides a framework for synthesizing the diverse findings of previous studies. Perceptions of environmental threats matter because they affect the expected collective benefits of environmental activism. Sociodemographic factors matter because they affect the selective costs of environmental activism, whereas environmental values affect selective benefits. The collective interest model reveals a consistent

calculus of collective action that connects the laundry list of variables considered by other researchers.

Third, the findings provide some ammo for the debate about the link between environmental attitudes and behavior. The costs and benefits of environmental activism appear to be more salient when activism behavior is the subject of inquiry. The probability of making a difference matters more when people contemplate expending valuable resources through actual participation. The same is true for sociodemographic factors and their attendant resources or barriers to participation. Activism intentions, on the other hand, appear to be a cheap expression of preferences. Although these findings are intriguing, further research is needed to confirm this pattern.

There are some limitations to my analysis that provide fertile ground for future research. None of the models include good measures of every concept in collective interest model, although the most important ones are included. The most notable weaknesses are the measures of government and citizen efficacy. The analysis cannot disentangle the influence of perceptions of government capability and responsiveness, which are two separate judgments. A more complete battery of political efficacy questions similar to those used in the National Election Studies or the 1983-1987 GSS would be superior measures. The measures of citizen efficacy are not linked tightly enough to beliefs about likely cooperation from other individuals. Alternative questions asking people to estimate what percentage of other citizens are likely to contribute would be preferable. Last, the cross-sectional nature of these data may fail to capture the mutually reinforcing relationships between participation in environmental activism and beliefs about environmental problems and personal efficacy. Panel studies that track environmental activism and belief change among the same set of respondents over time can untangle these more complex causal processes. Regardless of these limitations, the findings confirm the utility of the collective interest model for understanding environmental activism.

## APPENDIX
### Variable Definitions

| | *General Social Survey* | *Peconic Bays Survey* |
|---|---|---|
| Dependent variable | | |
| Activism behavior | Sum of three questions: (a) Are you a member of any group whose main aim is to preserve or protect the environment? (b) In the past 5 years, have you signed a petition about an environmental issue? (c) . . . taken part in a protest or demonstration about an environmental issue? | Not available |
| Activism intentions | Average of responses[a]: How willing would you be to _____ to protect the environment (1 = *not at all willing*, 5 = *very willing*)? Three activities: pay much higher prices, pay much higher taxes, and accept cuts in your standard of living | Sum of responses: Which of the following would you be willing to do to improve or maintain the water quality of the Peconic Bays System (0 = no, 1 = yes; "don't know" is coded as "no" for more conservative measure)? Fourteen activities: support planning, change vote, pay taxes, support bond, contribute money, boating practices, clean-up projects, group volunteer, lobby, teach children, change fertilizers, support fines, support regulations, and improve septic |
| Collective interest variables | | |
| Environmental threat | Average of responses[a]: (a) In general, do you think _____ is (1 = *not dangerous for environment*, 5 = *extremely dangerous*)? (b) And do you think that _____ is (1 = *not dangerous for you and your family*, 5 = *extremely dangerous*)? Issues: air pollution by cars, nuclear power, air pollution by industry, pesticides, and water pollution | In your opinion, how clean is the Peconic Bays System[a] (1 = *extremely clean and healthy*, 5 = *very unclean and contaminated*)? |

| | | |
|---|---|---|
| Economic importance | Not available | In your opinion, how important is the Peconic Bays System to the economy of this region[a] (1 = *of no importance*, 5 = *extremely important*)? |
| Personal efficacy | It is just too difficult for someone like me to do much about the environment[a] (1 = *strongly agree*, 5 = *strongly disagree*). | To what extent do you believe that your own lifestyle and actions influence the quality of the Peconic Bays water System[a] (1 = *not at all*, 5 = *very much*)? |
| Government efficacy | Most public officials (people in public office) are not really interested in the problems of the average man[a] (0 = agree, 1 = disagree). | Average of responses[a]: How important do you think the _____ is in influencing the water quality of the system (1= *completely unimportant*, 5 = *extremely important*)? Six government actors: Environmental Protection Agency, county environmental office, elected representatives, New York State Department of Conservation, town boards, and Suffolk County Health Services |
| Citizen Efficacy | Trust: Generally speaking, would you say that most people can be trusted or that you can't be too careful in life (0 = can't be too careful, 1 = most people can be trusted)? | How important do you think the _____ is in influencing the water quality of the system[a] (1 = *completely unimportant*, 5 = *extremely important*)? Two actors: waterfront residents and general public |
| Selective benefits | | |
| Environmental values | Average of three questions[a]: (a) We worry too much about the future of the environment and not enough about prices and jobs today. (b) People worry too much about human progress harming the environment. (c) To protect the environment, America needs economic growth. (1 = *strongly agree*, 5 = *strongly disagree*) | Not available |

*(continued)*

**APPENDIX continued**

| | *General Social Survey* | *Peconic Bays Survey* |
|---|---|---|
| Selective benefits | | |
| Party identification | Generally speaking, do you think of yourself as a Republican, Democrat, Independent, or what (0 = strong Democrat, 3 = Independent, 7 = strong Republican)? | Do you consider yourself to be Democrat, Republican, Independent, or other? Party identification broken into two dummy variables, one for Democrats and one for Independents. |
| Recreational/ occupational use | Not available | Do you use any part of the Peconic Bays System for recreation/work (two dummy variables: 0 = no, 1 = yes)? |
| Selective costs | | |
| Income | Twenty-one categories (less than $1,000 to $75,000 or more) | Seven categories (less than $10,000 to more than $70,000) |
| Education | Number of years of schooling (0-20) | Seven categories (no high school to graduate degree) |
| Age | Naturally coded | Seven categories (younger than 30 to older than 70) |
| Female | 0 = male, 1 = female | 0 = male, 1 = female |
| Minority | Two separate dummy variables = 1 for Black and other minority | One combined dummy variable = 1 for Black and other minorities |
| Environmental knowledge | Sum of correct answers to seven knowledge questions. “Probably true/false” counted as “true/false” | Average of responses: Please indicate whether you have learned (1 = *nothing*, 4 = *a lot*) about Peconic Bays from each of the following sources. Eleven sources: local paper, child’s school, *Newsday*, classes, community groups,environmental groups, business groups, television, personal experience, radio, and elected officials |
| Social capital | Sum of “yes” answers: Here is a list of various organizations. Could you tell me whether you are a member of each type? Sixteen groups, excluding environmental | Not available |

a. Variables are linearly transformed to the [0, 1] range for purposes of analysis.

## NOTES

1. The difference between the value of the collective good and selective benefits/costs is a function of excludability. Collective goods are nonexcludable; benefits enjoyed by one person are available to another. For example, improvements in environmental quality are nonexcludable because everybody can enjoy a cleaner environment regardless of whether they contribute toward cleanup. Selective benefits/costs are excludable; an individual can only enjoy the benefits or experience the costs if they somehow "pay" for the good. In the case of environmental activism, paying for the good means participating in activism activities. For example, people can only enjoy the psychological benefits of preference expression or experience the financial costs if they actually participate in environmental activism. There may be some disagreement as to whether a particular variable is considered a collective or selective benefit; however, as long as the variable appears only once in the model, I am not double-counting benefits.

2. Finkel, Muller, and Opp (1989) argued that perceptions of group effectiveness matter most when people believe contributions from all members are necessary for group success—the so-called unity principle. This argument saves them from the typical logic that would induce people to free ride on effective groups. If all members matter, then only effective groups can produce a positive expected value. Although they found beliefs about group efficacy are important predictors of protest behavior, I find their logic unsatisfying. In the next section, I will argue $p_g$ should be related to expectations about the behavior of other people in the group and government actors. Environmental activism is very unlikely to succeed if others do not contribute, and if government actors are unresponsive or ineffective.

3. One might argue that environmental values really measure a collective interest variable, especially because people with strong environmental values are more likely to perceive environmental threats. However, my econometric models estimate the influence of environmental values controlling for perceptions of environmental threats and economic importance. Hence, the influence of environmental values is related to the selective benefits received as a consequence of participating in environmental activism.

4. Younger people may also have more "postmaterial values" and awareness of environmental issues, which would suggest they enjoy more benefits from environmental activism. However, the theoretical effect of age is not entirely clear. Older people may have more civic skills and experience with political action, therefore reducing the costs of environmental activism. These balancing factors may cause age to have no influence on levels of environmental activism.

5. Similar to age, some researchers have argued women care more about the environment and hence would receive more benefits from environmental activism. The collective interest model predicts women are more likely to participate regardless of whether gender is conceptualized as related to benefits or costs.

6. The assumption is probably also safe for survey questions that occur before questions about activism behavior or intentions, or that are embedded in a large survey. In the General Social Survey (GSS), questions about activism intentions come after questions about environmental threat but before personal efficacy, whereas activism behavior is at the end of the environment battery. All other GSS questions are embedded in other parts of the survey. In the Peconic survey, questions about activism intentions appear at the very end of the survey. Hence, rationalization is probably only a minor issue.

7. I exclude the GSS question about giving money to environmental groups because an error in the 1993 survey form caused severe overreporting of giving.

8. See the appendix for differences. Income, education, and age are all coded so higher values equal higher income, age, and education levels.

9. In all models, I simply enter the independent variables as additive terms. I do not transform the independent variables in an effort to replicate the multiplicative structure of the collective interest model. Finkel et al. (1989) did multiply variables together and found the multiplicative terms are important predictors. However, this strategy makes it difficult to disentangle the effects of different variables, and assumes the survey measures accurately capture concepts of probability. Because I am not comfortable with the latter assumption, I prefer to use the collective interest model as a heuristic guide for selecting relevant independent variables.

10. Ordered probit models are appropriate for ordinal dependent variables with very few categories, which cannot be considered as interval-level variables as in linear regression. Ordered probit is derived from a measurement model in which a latent variable, $y^*$, ranging from –8 to +8 is mapped onto an observed variable $y$, which ranges from [0,3] for the activism behavior variable (Long, 1997). Ordered probit then estimates the structural model $y_i^* = \mathbf{x}_i\boldsymbol{\beta} + \varepsilon_i$, where $\varepsilon_i$ is normally distributed with a mean 0 and variance 1 and $\mathbf{x}_i\boldsymbol{\beta}$ is a matrix of independent variables and slope coefficients.

11. The structural model for ordered probit estimates the expected value of the latent variable, conditional on the values of all independent variables. The probability of observing a particular outcome depends on where the expected value falls on the cumulative density function of a normal distribution, which is divided into segments corresponding to each observed outcome. The thresholds reported in Table 2 determine the boundaries of the segments. Intuitively, this is very similar to a regression equation, in which the expected value of a dependent variable is a linear additive function of the independent variables and the slope coefficients. However, because the probability of observing an outcome is a nonlinear transformation of the latent variable, the effect of a change in a single independent variable depends on the value of all independent variables. In other words, the effect of a single independent variable will be different for different values of the other independent variables in a model. One simple way to handle the complexity of ordered probit results is to examine the difference in probabilities of observing a particular outcome for two substantively meaningful values of an independent variable, holding all other variables at their mean levels. I interpret the results of the activism behavior model by calculating the probability of observing one activism behavior for the minimum and maximum values of the relevant independent variable. The discrete change in probability is simply difference between these two probabilities.

12. Because each model is based on different questions, it is impossible to directly compare the effect of a single variable (e.g., environmental threat) across models. However, it is possible to compare the relative effects of two independent variables (e.g., environmental threat and personal efficacy) across models by examining the size of the coefficients within the same model.

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