

Rational choice and the dynamics of collective political action: evaluating alternative models with panel data.

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The factors influencing individual participation in political protests are studied using survey panel data in the Federal Republic of Germany. Results show that individual participation is influenced by variables from a collective interest model which include individual preferences for public goods and perceptions of the importance of participation in collective action. On the other hand, selective incentives such as monetary returns or social pressures had little influence on protest behavior.

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Perhaps no area in mass political behavior research is beset with such serious methodological difficulties as the study of participation in political protest and other unconventional activities. Some of the problems, such as finding and eliciting truthful responses from the limited number of individuals who engage in these types of behaviors, can and have been remedied through better sampling and more sensitive interviewing methods in national and local probability surveys. A more fundamental problem, however, is that unlike voting or campaign participation, unconventional behavior does not occur during fixed periods, and hence researchers typically cannot plan a study in advance of the specific activities they may wish to analyze. This means that almost all previous survey-based research on protest and unconventional political action is prone to what Green and Shapiro (1994, 85) term the "pedestrian methodological defect" of predicting past behavior from information gathered at the survey's current time.(1)

This error would be less consequential for causal inference if, as was common until recently, the principal explanatory variables of interest were such stable sociodemographic variables as race, gender, educational attainment, or social class or enduring attitudinal orientations, such as ideological or partisan identification (Barnes and Kaase 1979, Marsh 1977). In research of this type, it may be legitimate to assume that the explanatory factors did not change significantly since protest or other behaviors took place, and hence cross-sectional data can be useful in exploring causal hypotheses. More recent work in the field, however, has developed and tested models of unconventional behavior based on rational choice theory, and here the use of cross-sectional data is more problematic. Such models, adapted from the framework set forth by Olson (1965) in the well-known Logic of Collective Action, posit that individuals calculate the expected costs and benefits associated with various alternatives before deciding whether to participate in or abstain from collective activities (see the recent reviews in Leighley 1995, Whiteley 1995). Numerous studies drawing on the Olsonian Logic have appeared in the literature. Some identify the private payoffs, usually of a social or psychological nature, that allegedly motivate unconventional action (Chong 1991, Klandermans 1984, Opp 1989). Others show that individual preferences for public goods, coupled with estimates of the likelihood of group success in providing the goods through collective behavior and perceptions of the importance of personal participation, are the critical explanatory variables (Finkel et al. 1989, Muller and Opp 1986, Muller et al. 1991). All this work, however, must be viewed as incomplete in light of the fact that decisive tests of rational choice theories cannot be conducted with cross-sectional data using individuals' reports of past behavior.

Most obviously, an individual's "expected" utility from participation, by definition, refers to some future state, rendering reports of past participation irrelevant from the point of view of rational choice theory. More practically, the variables critical to these theories, such as an individual's perceptions of the likelihood of group success or perceptions of material or social costs associated with participation in collective action, may not remain stable over time; indeed, to the extent that they are relevant predictors of participation, they should be precisely those attitudes and perceptions that protest groups and the government attempt to manipulate in order to encourage or discourage these forms of behavior (Lichbach 1995, chapter 3 and 8-10). Therefore, it cannot be assumed that the values of these variables at the time of a survey were similar to their values before the individuals actually took part in (or abstained from) protest or other unconventional activities (Pierce and Converse 1990). Moreover, individuals who have participated in protest may change their attitudes as a result of their past participation, either by absorbing new information about a given situation and their own capabilities or by rationalizing to themselves or the survey interviewer that their actions "must have" been due to their high levels of alienation, their strong belief that the protest group could be successful, and the like. For these reasons, cross-sectional data cannot show conclusively that current perceptions relevant to rational choice theories are the cause, and not the result, of the reports of individual behaviors that are elicited in a survey interview.(2)

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One solution to this problem is to alter the dependent variable to represent the individuals' future willingness or intention to participate in protest activities. Much research in the field does make use of behavioral intentions as the dependent variable, sometimes weighting these intentions with reports of past behavior in order to make the intentions variable "more realistic" (following the procedures outlined by Muller 1979). Although these models help overcome the temporal ordering problem, they are unsatisfactory to the extent that, as is often the case, the relationship between behavioral intentions and actual behavior is weak. One reason is that there may be few collective protest opportunities in a given period, and so even highly "willing" individuals will not engage in actual behavior. Another is that we know that the relationship between voting intentions and voting turnout is less than perfect (Silver et al. 1986, Granberg and Holmberg 1988), and there is little reason to expect a greater degree of consistency between intentions and behavior in more irregular and sometimes illegal forms of political participation. Finally, the relationship between attitudinal independent variables and willingness to participate may be subject to rationalization effects, in that individuals who claim, for example, to be dissatisfied with government and who perceive that protest can be successful may reason that, with this constellation of attitudes, they "must be" willing to participate in protest behaviors. Alternatively, individuals who intend to protest may deduce that they "must have" attitudes commensurate with this behavioral intention. As Aldrich (1976, 322) notes in regard to voting and campaign participation, "it may well be that a citizen responds that he is greatly concerned about the election, that he believes the election to be very close . . . because he has already decided - perhaps, for quite different reasons than his responses might indicate - to go to the polls." For these reasons, the use of behavioral intentions in survey-based research on protest participation may be highly problematic.

To overcome these "pedestrian methodological defects," survey data are needed that provide individual reports of actual participation in protest activities over some finite period, as well as attitudes pertaining to rational choice theories that are measured before the behavioral time interval of interest. Clearly, the only type of study that provides these necessary data is a panel survey, in which interviews are conducted with the same individuals over time. Yet, no panel study testing a model of this type exists in the literature. Although there has been one large-scale cross-national panel study of protest in the late 1970s and early 1980s, along with several analyses of panel surveys of activist groups, or university and local area samples (Finkel 1987, Jennings et al. 1990, Klandermans 1984, Oegema and Klandermans 1994, Opp n.d., Opp and Ruehl 1990), none of this research contains the most basic test that should be conducted with panel data: whether attitudes relevant to rational choice theories that are measured at a given time are independent causes of the individual's subsequent behavior. By specifying that attitudes must exert influence on behavior measured at some future time, such a panel model would represent a more conservative test of whether rational choice variables are related to political participation. Furthermore, few studies exploit panel data to determine the extent to which theoretically relevant independent variables may themselves be affected by protest participation, producing either a reciprocal causal relationship with behavior or a unidirectional relationship in which the causal effect runs only from behavior to attitude (Finkel 1987, Opp n.d.).

In this paper, we attempt to resolve these controversies by testing rational choice theories of participation with national survey panel data on political protest collected over time in the Federal Republic of Germany. Using individuals' reports of their actual participation in legal and illegal protest, and attitudes and perceptions measured before the behaviors in question, we test models of the causes and effects of individual protest participation on variables associated with several variants of rational choice theory. Our findings suggest that individual participation in protest is determined primarily by variables from what we term a collective interest model: individual preferences for public goods, perceptions of the importance of personal participation in collective efforts to achieve the good, and perceptions of the likelihood of group success. Variables associated with private material, social, or psychological "selective incentives" such as monetary payoffs, social pressure from significant others, and the expressive benefits of participation, are found to be less relevant as determinants of protest behavior. Moreover, several of the variables in the collective interest model are found to have a reciprocal relationship with protest behavior, as protest groups attempt to influence these perceptions and attitudes through the mobilization process itself. By contrast, the links between the selective incentives and participation, when they exist at all, are primarily unidirectional, as individuals adjust their current expectations of private rewards and costs in response to past participation in (or abstention from) collective protest activities. These findings have considerable implications for understanding both the dynamics of protest participation and the explanatory power of alternative versions of rational choice theories of collective behavior.(3)

TESTING RATIONAL CHOICE MODELS OF PROTEST: PROBLEMS OF CAUSAL INFERENCE

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The logic of individual participation in collective action, derived from Olson's (1965) seminal exposition, is well known. In large groups, each individual reasons first that his or her participation will have little marginal effect on the likelihood that collective action will be successful. Furthermore, individuals who do not participate cannot normally be denied the benefits of the "public goods," for example, a change in regime or public policy, that successful collective action can provide. As a result, rational individuals will prefer to abstain, or "free-ride" on the efforts of others, reasoning that abstention will bring the same expected benefits as participation without any of the potentially severe personal, legal, and opportunity costs involved in protest behavior.

How, then, do we account for the fact that individuals do take part in collective protest activities? Although Lichbach (1995) identifies about two dozen different potential "solutions" to the free-rider problem, scholars in the survey research tradition generally have focused their efforts in two directions: (1) measuring individual demand for public goods and perceptions of individual and group efficacy to determine whether the combination of these collective interest variables yields, contra Olson, a nonzero expected benefit from participation, and (2) specifying the private payoffs or selective incentives that are available only to collective action participants and hence may produce greater expected benefits to the individual from participation than abstention. Empirical research has shown support for these efforts in tests conducted with cross-sectional data in a variety of national and local settings (Finkel et al. 1989; Finkel and Opp 1991; Gibson 1997; Klandermans 1984; Klandermans and Oegema 1987; Muller and Opp 1986; Muller et al. 1991; Opp 1988, 1989; Walsh and Warland 1983).⁽⁴⁾ Although the presumption in such studies is that these "expected utility" incentives provide motivation for individual participation in collective political action, there are several reasons to suspect that the effect of past behavior (or current behavioral intention) on current attitudes accounts for at least part of the cross-sectional covariation between these variables.

Consider first the collective interest model, elaborated most recently in Finkel et al. (1989) and Muller et al. (1991). This model posits that individuals will participate in protest activities to the extent that (1) they have high levels of discontent with the current provision of public goods by the government or regime, (2) they believe that collective efforts can be successful in providing desired public goods; and (3) they believe that their own participation will enhance the likelihood of the collective effort's success (see also Klandermans 1984). The positive expected utility of participation over abstention in this model follows from the fact that, in contrast to the Olsonian version of conventional rational choice theory, individuals will not necessarily perceive that the importance of their own participation in the collective effort is negligible. The perceived importance of personal participation may stem either from an individual's general sense of political resourcefulness or subjective efficacy (cf. Verba et al. 1995) or from the individual's adherence to strategic beliefs, such as "united we stand, divided we fall," that promote what Finkel et al. (1989) termed "collective rationality." In either case, discontented individuals will be motivated to participate so long as the overall likelihood of group success is reasonably high; if the cause is hopeless, then even subjectively resourceful individuals will realize that there are too few participants to make a difference, and appeals to group unity will have little effect. The model thus posits that individuals will attempt to achieve collective goods through political participation, but that rational individuals will do so only when the collective chances of success and their own personal influence are high.

Although the collective interest model has received strong support in these cross-sectional studies, several alternative causal processes cannot be ruled out in the tests conducted to date. The problems stem from the use of behavioral intentions and past participation as dependent variables, both of which may be the cause, and not the effect, of the model's independent variables. One possibility is that respondents are bringing their attitudes in line with their behavioral intentions through a rationalization process: People at a given time may be willing to take part in protest activities for reasons unrelated to the collective interest model and then report a high degree of political discontent or perceptions of the likelihood of group success as a result. Green and Shapiro (1994, 85-6) seem to have this possibility in mind when they suggest that individuals' (mis)perceptions of personal and group influence are part of the "ideology of activism," by which individuals who are otherwise oriented to protest may be inclined to claim that they and the groups to which they belong have much influence on the potential provision of public goods.

The problem of reciprocal causal influence is perhaps even more serious in analyses in which the dependent variable is past participation, or behavioral intentions weighted by past participation. Previous research with panel data has suggested that participation in collective action may have an effect on both preferences for public goods and perceptions of personal influence (Finkel 1987, Opp n.d.). More generally, much recent scholarship supports the notion that the beliefs and values relevant for protest are "temporally variable and can be modified during the course of actual participation and

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by the micromobilization efforts of social movement organizations" and protest groups (Snow et al. 1986, 471). Groups attempt to mobilize individuals by "identifying a problematic condition and defining it as unjust, intolerable, and deserving of corrective action," that is, changing individuals' preferences for public goods (Snow and Oliver 1993, 31-3); by "amplify[ing] . . . beliefs regarding the efficacy of their campaigns" (Snow et al. 1986, 471); and by stimulating a sense of group unity and necessity of each individual's participation (Gamson 1992, Schwartz and Paul 1992). To the extent that these processes occur, then past behavior and participation in mobilization efforts will have significant effects on current levels of preferences for public goods and individual and group efficacy, thus biasing existing cross-sectional analyses that include past behavior in the construction of the dependent variable.

Similar problems pervade research that, in contrast to the collective interest model, emphasizes the private payoffs or selective incentives that may overcome the pressure for individuals to free ride in collective action situations. Previous research has suggested that social and psychological incentives are far more relevant for protest behavior than material rewards and costs (Klandermans 1984, Muller et al. 1991, Opp et al. 1995; but see Lichbach 1994). Yet, for these types of variables, there are strong possibilities of attitude rationalization and reciprocal causal relationships that may contaminate causal inference in cross-sectional studies. Following "resource mobilization" theories of collective action, much research has hypothesized that individuals respond to the norms and expectations of other people within their social network and hence derive benefits from adhering to the behavioral norms of individuals and groups with whom they identify (Klandermans 1984, McAdam and Paulsen 1993, Opp 1989). Friedman and McAdam (1992, 161) argue explicitly that social networks draw individuals into collective action by providing incentives, such as friendship or social honor, that may be obtained by "responding to the call of network partners," and Morton (1991) and Uhlaner (1989) express similar sentiments in their work showing how group memberships and strategic group interactions may overcome pressures for individuals to free ride. Yet, certainly individuals' reports of expected social pressures in a survey situation are subject to rationalization effects, and it is equally plausible that integration into groups or association with significant others who encourage protest is the result of past activities and not necessarily an independent influence on current behavioral intentions or future behavior.

These alternative possibilities may be even more pervasive in the case of the theoretically controversial "psychic," "expressive," or "in-process" rewards that have been put forward as possible motivations for participation. Recent studies have hypothesized that a variety of these "soft incentives" may motivate participation: Individuals may derive psychic satisfaction or suffer guilt from adhering or not adhering to personal norms about taking part in illegal political actions; they may participate in order to "stand up for what they believe in," to gain knowledge about politics, or simply because of the sheer entertainment value involved in group political activities (Finkel and Opp 1991, Muller et al. 1991, Opp 1989, Whiteley et al. 1994). But there is also the possibility that individuals' past behavior and current behavioral intentions have strong effects on responses to survey questions regarding these types of rewards. Elster (1989, 214) speculates that internalized norms of behavior "may be mere rationalizations with no independent motivating power," and it is easy to imagine that individuals who have participated in the past would claim to expect some psychic reward from "standing up" for their political beliefs through collective protest. Thus, the possibilities of attitude rationalization or reciprocal causal influence between attitudes and behavior means that cross-sectional tests of the effects of selective incentives on protest, as well as the effects of the collective interest variables, must be viewed as inconclusive.

DATA AND METHODS

These difficulties can be overcome to a large extent through the analysis of panel data, in which attitudes, cognitions, and behaviors are measured over at least two points in time. Panel data offer several key advantages for our current concerns.⁽⁵⁾ First, they enable us to model the effects of expected utility variables measured at one point in time on an individual's self-reported behavior at a later date. The analysis of actual behavior is a clear improvement over the reliance of previous research on behavioral intentions or some hybrid dependent variable; equally important, by using wave 1 attitudes to predict behavior during the wave 1 to wave 2 interval, the potential simultaneity biases that exist in cross-sectional designs are eliminated. In addition, the inclusion of prior participation measured in wave 1 as a predictor of wave 1-2 behavior serves partially to control for omitted variables that influence behavior at both periods. Thus the panel design will provide a more rigorous and conservative test of the effects of collective interest variables and selective incentives on the individual's subsequent decisions to participate in collective protest behaviors, controlling for past participation.

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Second, the analysis of panel data allows us to take into account the possibility of dynamic reciprocal relationships between all independent variables and participation. That is, in addition to predicting subsequent participation from wave 1 attitudes, we may also use reports of participation in the first wave to predict the collective interest and selective incentive variables measured in wave 2. The results of all these tests will enable us to assess whether the collective interest and selective incentives are reciprocally related to protest; whether the attitudes cause, but are not caused by, participation in collective protest; or whether the sole causal effect between the variables runs from participation to attitudes and not the reverse. In the latter case it may be concluded that individuals are adjusting their perceptions of costs and benefits to rationalize prior behavior, which was caused by other factors altogether.

We test these models with panel data from a representative survey (N = 714) of adults (age eighteen and older) conducted in West Germany between November 1987 and January 1988.⁽⁶⁾ Reinterviews with 377 respondents were conducted between October 1989 and January 1990. We analyzed the differences between the respondents who were reinterviewed in the second wave (N = 377) and those who were not reinterviewed (N = 337) by comparing the means of all independent variables and the participation scales for the first wave. The only significant difference to emerge between the panel participants and other respondents was for the former to have slightly lower scores (2.2 to 2.3 on a five-point scale, $\eta = .09$) on an "internal behavioral norm" that measures the extent to which the respondent believes political protest and violence are morally justified (the index is described in more detail below). We thus conclude that the panel respondents are an unbiased sample of first-wave respondents.

The main drawback to this analytic approach, however, is that because collective protest participation is relatively uncommon, our sample of 377 panel respondents did not yield a large number of actual participants. To maximize the variability on the dependent variable, we chose to combine a number of acts of unconventional participation into one scale. We constructed a variable representing the individual's participation in each panel wave by counting the number of the following activities in which the respondent had engaged "within the past two years": took part in a permitted demonstration; signed a petition; worked with a citizen's action group; participated in an organized effort to solve a neighborhood problem; wore a button or a sticker for a political cause; collected signatures for a petition; took part in a demonstration that broke the law; seized buildings, such as factories or government or university offices; participated in confrontations with police or other governmental authorities; participated in political activities that resulted in property damage; participated in protest activities at the workplace which were against the law; participated in confrontations with other political groups or individuals; and took part in public disorders. These activities vary widely in their nature and severity; nevertheless, they constitute a reasonably reliable scale in both panel waves, with coefficient alpha being .78 in the first wave and .76 in the second. Table 1 shows the distribution on the participation scale, and it can be seen that there is reasonable variation in the number of reported activities within each year. The table indicates that, as expected, the large majority of respondents either were completely inactive or participated in one or two of these behaviors, while about 10% report engaging in five or more activities in both waves.

We measured all independent variables in similar ways as in previous research, with the proviso that incentives for legal and for illegal behaviors were combined into an additive scale to correspond to the combined nature of the dependent variable. The question wordings (in English) can be found in the Appendix.

Measurement of Collective Interest Variables

Public Goods Dissatisfaction was the average of an individual's score on five measures of policy dissatisfaction: the extent of unemployment; the differences between rich and poor; environmental pollution; nuclear power stations; and the deployment of missiles. Respondents were asked to indicate their concern about each issue (0-4 scale) and then rate the performance of the government in each area (0-5 scale). The concern scores were multiplied by the performance scores, and the variable was then converted to a 0-1 scale, with higher numbers representing higher levels of overall dissatisfaction with the provision of public goods (cf. Finkel et al. 1989).

TABLE 1. Distribution of Sample on Protest Participation, 1987 and 1989 (N = 377)

Number of Activities	1987	1989
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0	50.9%	44.0%
1	14.1	18.0
2	9.3	11.4
3	8.0	8.8
4	9.0	6.4
5	4.2	5.0
6	1.9	4.5
7	1.9	1.9
8	.8	0.0

Likelihood of Group Success is the product of (1) the extent to which respondents believe that groups have helped their cause in the past through legal and illegal protest and (2) their perception that other people with views similar to theirs are likely to participate in either legal or illegal collective political action. The scores were created by multiplying the "past group success" value by the "willingness of others" value. We then averaged the legal and illegal scores and converted the variable to a 1-5 scale corresponding to the respondent's perception of the likelihood of group success in providing public goods through collective action.

Perceived Personal Influence was the combination of the individual's perceptions of the extent to which s/he "personally could have an influence on politics if [s/he] participated in each of five legal or illegal behaviors, and two questions measuring an individual's general level of perceived influence: "There is no point in getting involved in politics because I would have no influence anyway," and "If I were more involved in politics, I would have more influence on what happens." The variable was converted to a 1-5 scale, with higher values representing higher levels of perceived personal influence.

Necessity of Group Unity was composed of responses to two questions: "Every individual member is necessary for the success of a political group, no matter how large it is," and "For groups to have a reasonable chance of success by means of political action, everyone must contribute a small part." The variable was scored from 1 to 5, with higher values representing a stronger belief in the necessity of group unity.

Measurement of Costs

We included three measures of the costs of participating in collective political action. Trouble with Police was measured on a 1-4 scale corresponding to the perceived likelihood that the individual "would get into trouble with the police or the courts" if s/he participated in legal or illegal political action. Could Get Hurt used a 1-4 scale measuring the perceived likelihood of physical harm from legal or illegal action. Take Too Much Time used a 1-4 scale measuring the perceived time constraints faced by the individual who engages in legal or illegal protest.

Measurement of Selective Incentives

We measured seven selective incentives that individuals may perceive as material, social, or psychological "payoffs" from collective political action. Financial Gain was a 1-4 scale corresponding to the likelihood that the individual would "gain financially" if s/he participated in legal or illegal action. Expectations of Others was a 1-5 scale corresponding to individuals' perception of the extent to which people who are important to them (spouse, friends, colleagues, or others) would think "very positively" (5) to "very negatively" of them if they participated in legal or illegal protest. Group Encouragement was a count of the number of groups to which individuals belonged that encouraged either legal or illegal protest from its members. Gain Knowledge was a 1-4 scale measuring the extent to which individuals "would understand politics better" if they participated in either legal or illegal protest. Stand Up for Beliefs was a 1-4 scale measuring the extent to which the individual would "feel good because I had stood up for something I believe in" through legal or illegal protest. Entertainment was a 1-5 scale measuring the extent to which "being involved in politics is a very enjoyable experience." Internal Behavioral Norms was a 1-5 scale measuring the extent to which individuals believe that violating the law and engaging in political violence in the pursuit of certain political goals is morally justifiable; politics should not be left to elected officials; and dissatisfied citizens have a "duty" to do something about it. All selective incentives variables except for internal behavioral norms were coded so that higher values mean a greater perceived benefit from participation; higher values on the norms index indicate a greater psychological cost from taking part in morally unjustifiable protest behaviors.

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We first estimate regression equations that correspond to the tests of the collective interest model in previous research, using independent variables measured in 1987 to predict reported participation in the 1987-89 interval (as measured in the second wave in 1989). We then include the selective incentives variables and assess the explanatory power of a full model predicting 1987-89 collective political action. In equation form:

[Mathematical Expression Omitted], (1)

where $P(1987-89)$ represents the participation scale measured in wave 2, $P(1985-87)$ represents the participation scale measured in wave 1, $CI[(1987).sub.k]$ represents each of the k 1987 collective interest variables, $SI[(1987).sub.j]$ represents each of the j 1987 selective incentives, and $C[(1987).sub.l]$ represents each of the l 1987 perceived costs of participation.(7)

[TABULAR DATA FOR TABLE 2 OMITTED]

We then examine the reciprocal linkages between behavior and the variables in both the collective interest and selective incentives variables by specifying equations predicting the wave 2 values of each incentive in 1989 from its prior value and from prior participation reported in wave 1 between 1985 and 1987. In equation form:

$SI[(1989).sub.j] = [[Beta].sub.0] + [[Beta].sub.1]SI[(1987).sub.j] + [[Beta].sub.2]P(1985-87) + [U.sub.j]$, (2)

and

$CI[(1989).sub.k] = [[Beta].sub.0] + [[Beta].sub.1]CI[(1987).sub.k] + [[Beta].sub.2]P(1985-87) + [U.sub.k]$, (3)

where $SI[(1989).sub.j]$ and $CI[(1989).sub.k]$, represent the 1989 (wave 2) values of the j and k selective incentives and collective interest variables, respectively.(8) Equations 2 and 3 are estimated separately for each collective interest and selective incentive, as will be seen in Table 4.

In combination, the two sets of analyses represent a variant of the basic two-wave cross-lagged panel model, which alleviates many of the ambiguities of the temporal ordering and simultaneity biases that have marred previous empirical tests of these relationships. Despite this attention to the problems of causal order, however, equations 1-3 still may have omitted relevant variables, and in later analyses we include education, age, and social class to control for these variables' own causal effects as well as their effects as possible proxies for other factors that may influence both participation and the rational choice variables.

RESULTS

We examine first the collective interest model, which predicts protest from the individual's dissatisfaction with the provision of public goods, perceptions of the likelihood of group success, and perceived importance of personal participation. Model 1 in Table 2 shows the results of an equation predicting reported (logged) protest participation between 1987 and 1989 with the collective interest variables, controlling for reported 1985-87 behavior (logged) and several perceived costs of protest. All independent variables are taken from the 1987 (wave 1) survey, are measured as described in the previous section, and are logged to correspond to the logarithmic regression models conducted in previous research (Finkel et al. 1989, Muller et al. 1991). These log-log equations express in additive form the interaction between preferences for public goods and perceptions of group and individual efficacy that is posited by the collective interest model.

The first model in the table shows that three of the four variables from the collective interest model, measured in 1987, are all statistically significant predictors of future protest behavior. While the strongest influence on 1987-89 behavior is past behavior, these collective interest variables have standardized regression coefficients between .10 and .13, and taken together the model explains about one-fifth of the variance in reported 1987-89 protest behavior. Considering the two-year lag between measurements and the summary nature of the dependent variable, this is strong evidence supporting the hypothesis that the collective interest variables exert influence on future protest behavior, independent of possible reciprocal relationships between these variables and independent of the contaminating effects of attitude rationalization.(9)

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Interestingly, the cost variables also influence protest in the expected negative direction, with too much time achieving statistical significance at the .05 level and the effect of trouble with police having a *t* value of -1.6. This indicates that individuals are balancing the perceived benefits from their participation in protest with perceived opportunity costs and with potential costs related to legal or official sanctions. These results support the findings from the analysis of protest in Peru (Muller et al. 1991) but run counter to the finding of the so-called martyr effect among antinuclear activists in West Germany in the early 1980s (Muller and Opp 1986), where perceived costs were positively related to protest potential. It is possible that the latter effect, one that has puzzled scholars since its publication (cf. Klosko 1987, Opp and Ruehl 1988), was produced by individuals adjusting their perceptions of costs upward after having decided to participate in collective protest activities. The negative relationship between perceived costs and subsequent protest here supports a more traditional rational choice interpretation.

The second model from Table 2 represents the full participation model specific to equation 1 above and includes a series of material, social, and psychological selective incentives into the predictive equation: expected financial and occupational gains or losses, conforming to the behavioral norms of others or groups to which the individual belongs, and the "in-process" rewards of gaining knowledge, entertaining oneself through protest, standing up for one's political views, or conforming to one's own internalized norms for or against violent political behavior. In contrast to the results of previous cross-sectional research, we find that the values of these variables in 1987 are relatively weak predictors of subsequent behavior. The selective incentives add little to the explanatory power of the entire equation, with adjusted [R.sup.2] reaching .21, and only one variable in the entire set, belonging to groups that encourage protest, is statistically different from zero at the .05 probability level. In comparison, the coefficients for public goods dissatisfaction, perceived likelihood of group success, and perceived personal influence all remain statistically significant, with little change in their substantive magnitude from equation 1.(10)

It is possible, however, that the results in Table 2 underestimate the effects of selective incentives and material costs, as the ten individual variables may exert stronger influence when combined into more reliable summary indices. We therefore conducted a principal components factor analysis of the selective incentives and costs variables and uncovered a two-factor solution. Summary factors were created from the factor scores associated with each variable. One factor includes the variables too much time, trouble with police, and could get hurt, along with a (negatively loading) financial gain, and we label this factor "Material Costs." The other factor includes all other selective incentives in Table 2 except for group encouragement, which loaded on neither factor. We show in Table 3 the results of a model predicting protest behavior with these two factors, group encouragement, a summary multiplicative measure of the collective interest variables, and past behavior. We also introduce the demographic controls of education (coded from 1 for "left school without elementary diploma" to 5 for "completed Abitur or university entry diploma"), age (in years), and self-reported social class (coded from 1 for "lower class" to 5 for "upper class").

TABLE 3. Regression Model Predicting Protest Behavior, 1987-89, with Summary Measures and Demographic Controls

Variable	Unstandardized	Standardized
1985-87 Behavior	.22(***) (.05)	.22
Collective Interest 1987	1.23(**) (.45)	.16
Material Costs 1987	-.06(**) (.02)	.12
Group Encouragement 1987	.02(*) (.01)	.09
Selective Incentives 1987	.01 (.02)	.02
Education 1989	.03(*) (.01)	.12
Age 1989	-.001 (.001)	-.07
Class 1989	.01 (.02)	.00
Adjusted [R.sup.2]	.22	

* *p* [less than] .05, ** *p* [less than] .01, *** *p* [less than] .001 (one-tailed). *N* = 377. Standard errors in parentheses.

The results strongly confirm the conclusions reached above. The summary factor for selective incentives is irrelevant for

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protest participation, while the collective interest variable has the strongest standardized effect on 1987-89 behavior of any variable except for past behavior. Group encouragement also remains statistically significant, and the summary factor of material costs exerts a relatively strong and significant negative effect on participation. These effects, in addition, hold after controlling for standard demographic influences on behavior.

The panel analyses show clearly that the factors leading individuals to engage in political protest are those in the collective interest model, along with an independent effect of group mobilization. To some extent, these findings parallel those in previous research, in which the collective interest model as a whole typically outperformed models based on selective [TABULAR DATA FOR TABLE 4 OMITTED] incentive variables in explaining protest in several national settings (Muller et al. 1991, Muller and Opp 1986). Yet, in prior cross-sectional studies, several of the most important explanatory variables have been the individual's desire to conform to the behavioral norms of important others, to stand up for one's beliefs, and to adhere to one's own internalized norms against protest behavior. We suggest that the cross-sectional findings may have been produced by the effect of past behavior on the selective incentives, and this possibility is explored with the panel data below.

The top half of Table 4 shows the results of the estimation of equation 2 above, the model predicting each of the selective incentives, as measured in 1989 (wave 2), from its value in 1987 and 1985-87 reported protest participation, with education, age, and social class included as controls. As can be seen, participation has a statistically significant effect on three of these variables: standing up for one's beliefs, the entertainment value of protest, and belonging to groups that encourage protest. Past participation also has a significant influence on the overall selective incentives factor described above. In combination with the results of Table 3, these findings indicate that, except for group encouragement, the relationship between participation and selective incentives is unidirectional: Participation affects these attitudes, but the attitudes have no independent effect on subsequent participation. This is evidence of a rationalization process, whereby individuals take part in protest activities and then claim, for example, that they "would feel good" for standing up for what they believe, without those attitudes being true causes of future participation.

Table 4 also shows that protest participation influences the individual's propensity to join groups that encourage these forms of behavior. This finding, along with the results of tables 2 and 3, supports the notion that integration into protest groups is both a cause and effect of collective action. Individuals are mobilized by their membership in groups that encourage protest; at the same time, taking part in protest stimulates individuals to extend their memberships in like-minded organizations. These tables demonstrate clearly a key element in the mobilization process, the mutually reinforcing relationship between organizational activities and participation in collective action.

A similar pattern of reciprocal linkages between participation and attitudes can be seen for several of the collective interest variables in the bottom portion of Table 3. Participation has a significant effect on individual and group efficacy, indicating that prior behavior leads individuals to adjust their perceptions of both group and individual influence upward. These variables were shown in Table 2 to have significant effects on subsequent participation as well, indicating that two of the critical attitudes that predict protest are reinforced by taking part in protest behavior. Protest participation thus sets in motion a process of attitude adjustment and reinforcement of several of the collective interest variables, which then facilitate subsequent behavior. Interestingly, adding the 1987 value of group encouragement to these models (not displayed) shows that prior membership in protest-encouraging groups leads to marginally higher levels of group and individual efficacy in 1989 (t statistics of 1.5 and 1.6, respectively), supporting the notion that protest groups attempt to increase future participation by influencing individuals' perceptions of the likelihood of group success and their own importance of contributing to the collective cause (Klandermans 1992, Snow et al. 1986). The mobilization process in general is thus characterized by a series of mutually reinforcing relationships among prior participation, group memberships, and key variables in the collective interest model.(11)

CONCLUSION

Previous research that has tested rational choice models of political protest with cross-sectional data has been unable to establish that the benefits perceived by individuals are the cause, and not the effect, of participation in collective action. Causal inference in the cross-sectional case has been hampered by the inability to use perceptions of the costs and benefits of participation at a given time to predict behavior that necessarily occurred in the past and by ambiguities associated with analyzing behavioral intentions instead of actual protest participation. We have argued that the analysis of

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panel data can overcome both of these difficulties. Using panel data collected on a national sample in West Germany between 1987 and 1989, we have shown that variables comprising what we have termed a collective interest model measured in 1987 do predict reported participation in protest activities during the subsequent two-year interval. Individuals participate in collective protest when they are dissatisfied with the current provision of public or collective goods, when they believe that group actions can be successful, and when they believe that their own participation is important for group success. Other variables related to rational choice - corresponding to the selective incentives or private material, social, and psychic payoffs associated with protest - are found to be weaker predictors of future behavior. Put simply, what matters for protest behavior are not private incentives but, rather, collective goals, collective chances for success, and the individual's estimates of his or her own importance for the collective outcome.

The findings have considerable implications for recent disputes surrounding the applicability of rational choice theory in explaining political participation (Green and Shapiro 1994, Whiteley 1995). Much of the controversy involves the legitimacy of including "soft selective incentives," such as social approval, entertainment, or standing up for one's beliefs, into rational choice models. We believe that these factors can be included provided that they are specified and measured in advance of the behaviors in question, thus overcoming the criticism that they represent post hoc embellishments to explain unanticipated behavior. But in so doing, the analyses here suggest that the "soft incentives" empirically are less important than previously found in cross-sectional research; moreover, the models in Table 4 show that these variables are largely rationalizations of prior participation, with weak independent explanatory effects.⁽¹²⁾ To this extent, the results stand the traditional view of selective incentives on its head: Rather than participation being the "byproduct" of private payoffs to the individual, it appears that expectations of social and psychological rewards are the by-products of past participation! Thus, the heated debate about the "rational choice" status of these types of variables in this instance has relatively little empirical relevance.

We disagree strongly, however, with the criticism that the rational choice approach must necessarily exclude individual (mis)perceptions of personal influence, and by extension individual preferences for public goods and perceptions of the likelihood of group success. Theoretically, the collective interest model is consistent with the subjective expected utility framework, as individuals attempt to achieve benefits (such as a change in government policy), subject to the constraints that the benefits are collectively possible to obtain, that their own participation is important for the benefit's provision, and that the material and opportunity costs of participation are not too high. Some, however, assert that an "objectively" false belief, such as a nonnegligible perception of personal influence on the provision of a public good, has no place in a rational choice model (Klosko 1987, Green and Shapiro 1994). Yet, there is much philosophical disagreement on this point; scholars such as Simon (1985) and Benn and Mortimore (1976) assert that acting efficiently on the basis of even imperfect information may be considered "procedurally" or "practically" rational. Elster (1985, 9) similarly claims that an action is rational if, "given the beliefs of the agent, the action was the best way for him to realize his plans and desires." And given the fact that perceptions of efficacy correlate strongly with indicators of political resources, such as education, income, and cognitive skills (Barnes and Kaase 1979, Verba et al. 1995), it is by no means clear that the individual's belief in his or her own political influence is "objectively" false (see also Lohmann 1994). Following these notions, the collective interest model falls squarely within the family of rational choice explanations.

Empirically, the results attest unequivocally to the importance of personal influence and the other variables in the collective interest model in motivating individual participation. Equally important, we have shown with panel data that perceptions of individual and group efficacy are not merely rationalizations of an individual's prior willingness to participate or measurement artifacts of the "ideology of activism" (Green and Shapiro 1994, 85-6). Instead, these perceptions are significantly related to future behavior, and indeed they serve as the key links between individuals' political discontent and their decision to participate in or abstain from collective political action. This is the essence of the collective interest model, and this study provides its strongest confirmation to date.

The results reported here also shed light on more general issues related to political mobilization. Much recent literature (e.g., Lichbach 1995, Snow et al. 1986), for example, describes how dissident groups attempt to mobilize participation by altering perceptions of both the "probability of winning" and the individual's estimate of the "probability of making a difference," precisely the terms shown to be relevant here in motivating individual behavior. Moreover, we found considerable evidence that individuals who engage in protest begin to perceive that their own actions and those of the group may be more successful, and indeed many individuals who protest at one point go on to join organizations that encourage future protest behavior. These processes support the view in social movement research which claims that "the

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cognitions relevant to collective action - be they preferences, values, interests or utilities, costs or benefits . . . are . . . dynamic and evolving entities" (Snow and Oliver 1993, 33), with individuals who protest at one time coming to accept more readily the "motivational frames" that make future behavior more likely. The reciprocal causal effects found here suggest that the act of engaging in collective protest changes precisely those perceptions and cognitions that influence subsequent participation.

Finally, the fact that protest participation influences individual perceptions and cognitions serves as a caution against attempts to test attitudinal models of political behavior with cross-sectional data. We agree that "one may be rightly skeptical of surveys that ask people to recount the reasons behind [their] actions, . . . particularly when the survey takes place long after the fact" (Green and Shapiro 1994, 85; Leighley 1995), and it was precisely this skepticism that motivated our use of a panel design in this study. It must be recognized that attitudes measured at one point can best be used to predict subsequent political participation, as a substantial portion of the cross-sectional covariation between attitudes and behaviors may be due to the effect of past behavior on current attitudes. This problem, moreover, is not limited to rational choice models of protest; it potentially will affect other models, such as those based on theories of relative deprivation or postmaterialism, that specify political and social attitudes as causes of behavior. Panel data are ideal for the estimation of such models, and such data provide the additional benefit of allowing for more complex analyses of the dynamic processes by which individuals come to participate in the pursuit of collective ends.

APPENDIX. QUESTION WORDINGS FROM THE 1987-89 GERMAN PANEL STUDY

Collective Interest Variables

Public Goods Dissatisfaction

Concern about Problems. Would you tell me now, how concerned you are about the following problems?

Response values: 0 for "not at all concerned" to 4 for "extremely concerned."

1. The extent of unemployment
2. The differences between rich and poor
3. Environmental pollution
4. Nuclear power stations
5. Deployment of missiles

Performance of Government. Please tell me for each issue how you would rate the overall performance of the government. If you think that any of these issues are not a proper concern for the government, please tell me.

Response values: 0 for not a proper concern, 1 for "excellent" to 5 for "very poor."

Likelihood of Group Success

Past Group Success. On this sheet we have indicated what groups have done to try to attain their political goals. Please tell me whether you think they have by and large hurt or helped the cause of the group, regardless of whether you approve of these actions or not.

Response values: 1 for "hurt a lot" to 5 for "helped a lot."

1. When groups have collected signatures
2. When groups have undertaken legal demonstrations

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3. When groups have seized buildings
4. When groups have blocked streets or staged sit-ins
5. When groups have participated in confrontations with police or other government authorities

Willingness of Others. Now, thinking more generally about people in your area who have political views similar to your own, would you tell us how many people would be willing to get involved in the following activities?

Response values: 1 for "none" to 5 for "almost all."

1. Seizing buildings
2. Blocking streets or staging sit-ins
3. Collecting signatures for a petition
4. Working with a citizen's action committee

Perceived Personal Influence

Influence through Specific Activities. Here is a list of political activities. Please indicate the extent to which you personally could have an influence on politics if you participated in each one.

Response values: 1 for "I would have no influence" to 5 for "I would have great influence."

1. Collected signatures for a petition
2. Worked with a citizen's action committee
3. Participated in an organized effort to solve a neighborhood problem
4. Seized buildings
5. Blocked streets or participated in sit-ins

General Political Influence. I would like to ask you some more questions on general issues. To what extent do you agree or disagree with the following statements?

1. There is no point in getting involved in politics because I would have no influence anyway. Response values: 1 for "strongly agree" to 5 for "strongly disagree."
2. If I were more involved in politics, I would have more influence on what happens. Response values: 1 for "strongly disagree" to 5 for "strongly agree."

Necessity of Group Unity

Now I would like to ask some general questions about political activities. To what extent do you agree or disagree with the following statements?

Response values: 1 for "strongly disagree" to 5 for "strongly agree."

1. Every individual member is necessary for the success of a political group, no matter how large it is.

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2. For groups to have a reasonable chance of success by means of political action, everyone must contribute a small part.

Costs of Participation

Trouble with Police, Could Get Hurt, Take Too Much Time

If you were to participate in political action that is permitted, e.g., working in an election campaign, collecting signatures for a petition, or taking part in a permitted demonstration, how likely is it that the following will happen?

Response values: 1 for "very unlikely" to 4 for "very likely."

1. I would get into trouble with the police or the courts.
2. I could get hurt.
3. It would take too much of my time.

If you were to participate in political action that breaks the law, e.g., blocking streets or damaging property, how likely is it that the following will happen?

Response values: 1 for "very unlikely" to 4 for "very likely."

1. I would get into trouble with the police or the courts.
2. I could get hurt.
3. It would take too much of my time.

Selective Incentives

Financial Gain, Gain Knowledge, Stand Up for Beliefs

If you were to participate in political action that is permitted, e.g., working in an election campaign, collecting signatures for a petition, or taking part in a permitted demonstration, how likely is it that the following will happen?

Response values: 1 for "very unlikely" to 4 for "very likely."

1. I would gain financially.
2. I would understand politics better.
3. I would feel good because I had stood up for something I believed in.

If you were to participate in political action that breaks the law, e.g., blocking streets or damaging property, how likely is it that the following will happen?

Response values: 1 for "very unlikely" to 4 for "very likely."

1. I would gain financially.
2. I would understand politics better.
3. I would feel good because I had stood up for something I believed in.

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Expectations of Others

Think about those people whose opinion is especially important to you, for example, your spouse, friends, colleagues, or other people you know. If you were to participate in political action that breaks the law, e.g., blocking streets, sit-ins, or damaging property, what would most of those people think of you?

If you were to participate in political action that is permitted, what would most of those people mentioned above think of you?

Response values: 1 for "very negatively" to 5 for very positively."

Group Encouragement

Do any of those groups (of which respondent indicated s/he was a member encourage or discourage you to take part in activities like signing petitions or taking part in demonstrations, or don't they care one way or another?

Do any of those groups encourage or discourage you to take part in actions like sit-ins, blocking streets, or don't they care one way or another?

Response values: 1 for "I'm encouraged," 2 for "I'm discouraged," 3 for "group does not care."

Entertainment

Now I would like to ask some general questions about political activities. To what extent do you agree or disagree with the following statements?

Response values: 1 for "strongly disagree" to 5 for "strongly agree."

Being involved in politics is a very enjoyable experience.

Internal Behavioral Norms

I would like to ask you some more questions on general issues. To what extent do you agree or disagree with the following statements?

Response values: 1 for "strongly agree" to 5 for "strongly disagree."

1. If a citizen is dissatisfied with the policy of the government, he has a duty to do something about it.
2. Politics should be left to our elected representatives. Response values: 1 for "strongly disagree" to 5 for "strongly agree."
3. Violence against property in order to achieve certain political goals is morally justifiable.
4. Violence against persons in order to achieve certain political goals is morally justifiable.
5. If citizens struggle for important political causes, violating the law may be necessary.

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Muller's memory since his tragic death in summer 1995.

1 Throughout the rest of the paper, the term "protest" connotes participation in a variety of legal and illegal collective activities, such as collecting signatures for petitions, taking part in a permitted demonstration, or taking part in public disorders. Some of the behaviors we analyze, such as working with a citizen's action group or signing a petition, are not unconventional in the usual sense, but we use the term "protest" to describe them, as all involve some form of organized demonstration of disapproval of governmental policy. The theoretical discussion is applicable to all forms of collective political action.

2 Some cross-sectional work on political participation (e.g., Verba et al. 1995) attempts to circumvent the simultaneity problem by using two-stage least squares (TSLS) or some related statistical procedure. This is a clear improvement over the use of ordinary least-squares (OLS) regression, but some difficulties remain in applying this technique. It is still problematic theoretically to assume that an attitude at a given time (even if purged of its association with participation's error term) has a causal effect on reported behavior that occurred in the past. Moreover, TSLS depends on specifying outside instrumental variables that have a relatively strong effect on either participation or the attitude in question (but not both), and such variables are notoriously difficult to find.

3 We note that the paper is limited to evaluating alternative models of collective action derived from rational choice theory, not all extant theories of political participation, such as relative deprivation, the SES and resource-based models found in Verba et al. (1995), and the "opportunity structure" models developed by Tarrow (1995) and others. Future research should explore the extent to which variables from these theories represent antecedents to the "inside the head" subjective expected utility judgments that, from the perspective of rational choice theory, are the proximate causes of participation in collective political action.

4 This is not to suggest that these "solutions" may be found only in the survey-based literature. Chong (1991), Lohmann (1994), and Oberschall (1980, 1994), for example, use them to explain past social movements, such as the American civil rights movement and the East German revolution of 1989.

5 Kessler and Greenberg (1981) and Finkel (1995) discuss the advantages of panel data in more detail.

6 The data were collected by the Gfm-Getas Survey Research Institute in Hamburg, a firm with expertise in designing and implementing surveys on protest and political participation. Each survey was a probability sample drawn according to the design of the working group of German market research institutes. In this procedure the first step is to select sample points (voting districts). Then the interviewer looks for households according to a random route procedure. Finally, a member of the household is randomly selected to be interviewed. More detailed information about this data set and the broader research project from which it is taken can be found in Finkel et al. 1989, Finkel and Opp 1991, Muller et al. 1991, and Opp et al. 1995.

7 It should be noted that equation 1 contains no instantaneous effect from the collective interest variables in wave 2 on wave 2 participation. According to the temporal logic developed in the paper thus far, we rule out the possibility that participation that took place in the 1987-89 interval could be caused by any 1989 attitudinal variable.

8 It is also possible that wave 2 participation (which measures behavior undertaken in 1987-89) influences wave 2 (1989) incentives. If that is the case, then the results reported in Table 4 below may underestimate the effect of participation on the rational choice variables. But given that such a specification would directly contradict virtually all previous cross-sectional research in the field of political participation, we decided on the more conservative formulation, whereby we predict wave 2 incentives only from wave 1 (1985-87) participation.

9 We tested the hypothesized interaction effect of the variables in the collective interest model in another way by first creating a multiplicative variable comprised of public goods dissatisfaction, likelihood of group success, and perceptions of personal influence (the three significant variables in the model). We then tested whether the individual variables had a significant effect on participation independent of the multiplicative interactive variable. In each case the multiplicative variable was significant, and the individual variable was not.

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10 The results are stable even after taking into account the possibility that measurement error accounts for some of the observed change in participation over time (cf. Finkel 1995). Under the assumption that the reliability of the participation scale is .76 in wave 2 and .78 in wave 1 (see p. 12), we reestimated the model of Table 3 in LISREL and found that the magnitude of the coefficients and their statistical significance remained largely unchanged.

11 Taking measurement error into account under the assumption that the reliabilities of past participation and all other variables are .78, LISREL estimates of the models in Table 4 produce similar results. In particular, the standardized effects of past participation on perceptions of group success and personal influence are .11 and .12, respectively, and the effect of past participation on the summary selective incentives index is .16. The effect of participation on group encouragement is, however, weakened to a standardized value of .07.

12 It is possible, however, that the soft incentives influence participation over a shorter time lag than was measured in this study, and future research should address this possibility with panel data collected over shorter intervals.

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