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Moral Reasoning Effects on Political Participation

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In this study, respondents who agreed to participate in a computer-administered interview were presented with information and questions about public interest groups, followed by the Defining Issues Test of moral reasoning (DIT). Respondents with high DIT scores stressed morally central over morally peripheral considerations in deciding whether to participate in public interest groups. Less sophisticated reasoners showed the opposite pattern. Morally central considerations also had a much greater impact on the probability that sophisticated respondents would attempt to participate in public interest groups after completing the interview. The analysis included controls for potential confounding variables such as cognitive ability, education, prior political participation, and gender. The findings imply motivational differences between advantaged and disadvantaged population groups. Such differences may help to account for the differing strategies and successes of political organizations mobilizing these groups.

KEY WORDS: moral reasoning, political participation, interest groups, responsibility, attitudes.

Introduced by Piaget and Kohlberg, moral reasoning sophistication (or "moral reasoning") was originally conceived as individual differences in understandings of what kinds of considerations constitute morality. For example, some people believe social norms are moral edicts, while others believe morality is constituted by impersonal, prescriptive, and generalizable rules (Kohlberg, 1984a). With age and experience in moral reasoning, people increasingly construe morality as constituted by impersonal and generalizable rules. Because such rules are more inclusive and adequate, Kohlberg believed such people could be viewed as more sophisticated.

This paper presents evidence that moral reasoning sophistication has a substantial effect on the relative weight people place on moral versus non-moral considerations when they decide whether to participate in public interest groups. In particular, ethical considerations have considerably more impact on

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the likelihood that sophisticated reasoners will take steps to participate politically. These findings are non-obvious because the moral reasoning sophistication measure used here has no content directly relevant to political participation.

As discussed below, the non-obvious nature of these findings helps strengthen the case that ethical considerations play a key role in political participation decisions, which is by no means a dominant supposition in political science (Chong, 1991; Lohmann, 1993). In addition, these findings suggest intriguing hypotheses for future research. Differences in moral reasoning sophistication may play a role in explaining why advantaged and disadvantaged population groups participate politically in importantly different ways. Advantaged population groups are more likely to participate in ordinary public interest politics, whereas disadvantaged groups participate primarily in publicity-driven social movements that limit their efficacy. These differences may be due to lower moral reasoning sophistication among disadvantaged groups. The results here suggest that unsophisticated reasoners are politically motivated primarily by internal rewards, rewards that can depend on publicity and social approval.

Explanation of Moral Reasoning Sophistication

The concept of moral reasoning sophistication raises ideologically charged concerns, which in part arise from misunderstandings of the concept. Kohlberg (1984b) viewed moral reasoning as fundamental understandings of what types of considerations constitute morality. Having better understandings does *not* guarantee correct moral conclusions. Kohlberg conceded that differing premises about causal processes and differing interpretations of how to apply moral principles can lead equally sophisticated people to opposing ethical conclusions.

Kohlberg believed that few people conceptualize morality as fully universal and obligatory, because few people reach such conceptualization in their development. Research in domain theory (Helwig, 1995; Turiel, 1983) suggests an alternative interpretation of moral reasoning sophistication and of Kohlberg's findings. Contrary to Kohlberg, domain theory research finds that even very young children can conceptualize morality as universal and obligatory—so long as the moral considerations are not in conflict with non-moral considerations. Kohlberg's research focused on dilemmas between moral and non-moral considerations, and he found that less developed persons give priority to non-moral considerations in these dilemmas. Moral reasoning sophistication can therefore be alternatively understood as a growing understanding that moral concerns outweigh conflicting personal and social considerations.

The truth probably lies somewhere between Kohlberg's theory and domain theory. Although basic conceptions of morality exist in very young children, certain other types of cognitive development (such as a growing capacity for perspective-taking) are no doubt necessary to reach Kohlberg's highest stages. This paper can

remain agnostic about this debate because its hypotheses can be derived from either Kohlberg's theory or domain theory.

Gilligan (1982) charged that Kohlberg's measure of moral reasoning sophistication is gender-biased. The measure employed in this study, however, shows no significant gender differences, nor does it show such differences in 20 prior studies (Rest, 1979, chapter 5; Thoma, 1986). Moreover, Gilligan's criticisms have themselves been under fire (Walker, 1984).

Prior Research on Moral Reasoning and Political Participation

Several prior studies have found a correlation between moral reasoning and political participation. O'Connor's (1974) study of 886 students in three countries found that moral stage more strongly correlated with an index of political activism than did 50 other psychological and social variables. Haan, Smith, and Block's (1968) study of student and non-student protesters found that principled moral reasoners were at least twice as likely as conventional reasoners to engage in a variety of political and protest activities. Nassi, Abramowitz, and Youmans' (1983) study of former Berkeley students revealed significantly higher levels of political activity among those of advanced moral stage. Tygart (1984) found that moral reasoning has a significant correlation with an index of social-political activism, controlling for religiosity, political efficacy, dogmatism, authoritarianism, and political ideology. Steibe (1980) discovered a significant .23 correlation between the Defining Issues Test (DIT) P score and attendance at three social justice–related events by 171 adults. Leming (1974), however, found no relationship between moral reasoning and the protest and community participation of high school students.

These studies have a variety of methodological and other shortcomings that the present work seeks to overcome. First, these studies, excluding only those of Nassi et al. and Steibe, examined the unusual political activism of the 1960s and early 1970s, which emphasized protest, radical politics, and social movement politics. Nor are the exceptions, the Nassi et al. and Steibe studies, examples of common participation. The Nassi et al. study examined the continued participation of former 1960s Berkeley activists, and the Steibe study was about social justice–related events attended by seminarians and doctoral students. Protest, radical, and social movement activism emphasize strong moral claims, which may make moral reasoning especially relevant to them. In the present study, I seek to show that moral reasoning is relevant to a broader category of participation: present-day public interest group involvement.

Second, these studies do not build a strong case that moral reasoning affects participation. None of the studies included controls for demographic and cognitive variables that could result in a spurious relationship between moral reasoning and participation. Moral reasoning covaries with such variables as cognitive ability, socioeconomic class, education, and age, variables that themselves result in

participation. In the absence of controls for these variables, moral reasoning might correlate with participation even if it does not cause participation. This possibility of a spurious relationship is exacerbated in several of these studies by the use of samples from extremely divergent groups, such as janitors and professors (Tygart) or average Berkeley students and arrestees (Haan et al. and Nassi et al.). In addition, it may be that *participation* causes high moral reasoning because participants are often called on to defend their views. This concern could be addressed by statistically controlling for prior participation. The analyses presented below control for a wide variety of variables, which should reduce concern over spurious or reverse causal effects.

With the exception of parts of Haan et al., all prior research also depends on self-reports of political action, a second important weakness. High moral reasoning allows people to more easily identify moral considerations and separate such considerations from non-moral ones (Kohlberg & Candee, 1984). Consequently, sophisticated moral reasoners should better understand how to exaggerate the degree to which moral considerations influence their behavior. They may also be more motivated to present themselves as moral because they may better understand the relationship between their own moral behavior and other people's evaluations of them. To achieve this end, sophisticated reasoners might search their memories more thoroughly for examples of activism or may be more willing to classify vaguely political actions as political. By relying on self-reports, prior research allows the possibility that sophisticated moral reasoners report higher levels of political participation without actually engaging in more participation. The solution adopted here is to determine whether moral reasoning affects actual behavior recorded surreptitiously after a computer-administered interview (see below).

Most of the prior studies are also weak in that they do not analyze the process by which moral reasoning affects political participation. They assume a linear, positive relationship between moral reasoning and activism, a relationship for which there is no good theoretical rationale (Steibe, 1980). Finally, only the Steibe study uses the DIT test of moral reasoning, a test that is more easily and reliably applied to research than the measure used in the other studies—Kohlberg's measure.

How Moral Reasoning Affects Public Interest Group Participation Decisions

In several studies, Kohlberg and Candee (1984; Candee & Kohlberg, 1987) found that sophisticated moral reasoners are much more likely than unsophisticated reasoners to act on ethical considerations. For example, they found that sophisticated reasoners are much less likely to continue shocks in a Milgram-type experiment. Kohlberg and Candee explained that unsophisticated reasoners feel less responsibility to not shock another person because of interference from a "quasi-obligation" to obey the experimenter. [Kohlberg and Candee differentiated obedience to authority and other convention-based norms from moral obligations,

because these convention-based quasi-obligations are not universalizable (1984, p. 522).] Quasi-obligations interfere with or replace moral obligations among unsophisticated moral reasoners. Consequently, such persons are less likely to act on moral obligations. Kohlberg and Candee's theory of quasi-obligations and the inferences I draw from this theory below can be fit comfortably into domain theory. Within a domain theory interpretation, quasi-obligations are social norms to which people give precedence over moral obligations.

Kohlberg and Candee found that people feel a responsibility to act when they judge the action to be morally obligatory. This finding suggests that people who see political participation as a moral obligation would feel a strong responsibility to participate. Most people, however, do not consider joining a public interest group to be a morally *obligatory* act. Instead, they view it as a morally *virtuous* act. In decisions involving moral virtue, people base their sense of responsibility on the *amount* of good an action will do (Schwartz & Howard, 1981). By considering the amount of good that will be done, people can limit their responsibilities more readily than if they treat such actions as moral obligations. Figure 1 illustrates the proposed relationship. The perceived moral value of a group's goals—the amount of good the goals will do—helps determine sense of responsibility to contribute to group goals.

Kohlberg and Candee's quasi-obligation mechanism should apply to assessments of moral value as readily as to moral obligations. Less sophisticated reasoners should experience interference from quasi-obligations. As a result, moral value should have less influence on their sense of responsibility, and other factors such as the perceived self-relevance of a group's goals should have more of an impact. For example, people with a traditional feminine self-image might feel a quasi-obligation not to act politically because they view political action as inappropriate for their gender. This quasi-obligation could, therefore, prevent such people from feeling a responsibility to pursue even goals they perceive as having high moral value.

As this gender example suggests, quasi-obligations can enhance the effect of identity on sense of responsibility. Kohlberg and Candee did not consider the possibility that a person's identity can influence sense of responsibility. Schwartz's (1981) research, however, shows that the perceived self-relevance of an action does affect sense of responsibility in many people. Figure 1 incorporates perceived self-relevance of group goals as a determinant of responsibility. The development of moral reasoning sophistication may involve growing awareness that personal identity considerations should not influence moral judgments. More sophisticated reasoners should, therefore, show less of an effect of self-relevance on feelings of responsibility.

> *Hypothesis set 1.* In Equation 1 below, coefficient β_1 should be significantly larger for sophisticated moral reasoners than for unsophisticated reasoners. This regression equation indicates that assessments of moral

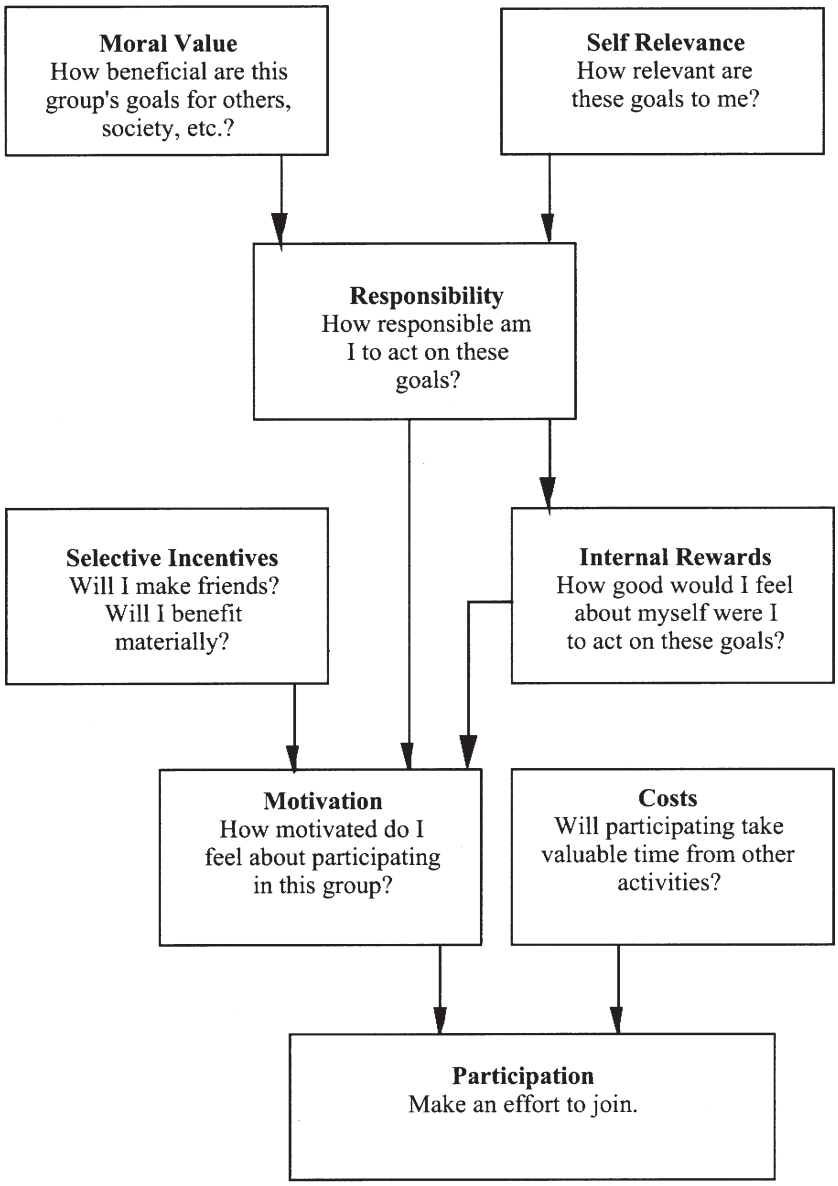

Figure 1. A responsibility model of decisions to participate in public interest groups. Each cognition in the model is illustrated with a question that a decision-maker might ask.

value—how beneficial a group's goals are to others—influence sense of responsibility to contribute to these goals. A larger value for β_1 among sophisticated reasoners would imply that moral value has a greater influence on sense of responsibility for these persons. Coefficient β_2 in Equation 1 should be significantly smaller among sophisticated reasoners. The equation indicates that assessments of self-relevance—how relevant a group's goals are to one's identity—influences sense of responsibility. A smaller value for β_2 among sophisticated reasoners would imply that self-relevance has less influence on sense of responsibility for these persons.

Equation 1: Responsibility = $\beta_0 + \beta_1$(moral value) + β_2(self-relevance)

Candee and Kohlberg (1987) suggested that feelings of responsibility lead directly to motivation. Schwartz, in contrast, proposed that responsibility leads to expectations of internal rewards, which influence motivation. Both possibilities are plausible and have been incorporated in Figure 1. A number of mechanisms could account for a direct effect of responsibility on motivation, including empathy (Batson, 1991) and internalized motivation (Rigby, Deci, Patrick, & Ryan, 1992).

Perhaps moral reasoning sophistication will influence the degree to which sense of responsibility has a direct or indirect effect on motivation to participate. A direct effect of responsibility on motivation implies participation out of principle, rather than self-reward. Political participation is commonly understood to be an activity undertaken on behalf of principle. This understanding is more likely to be heeded by persons with more adequate comprehensions of the relationship between moral and personal considerations in ethical judgments. Perhaps, then, sophisticated moral reasoners will be more motivated by sense of responsibility and less by internal rewards.

Research on motivation also suggests the same hypothesis. People with advanced moral reasoning have a disposition for using cognitive motives rather than pursuing anticipated internal rewards (Ryan & Connell, 1989). Therefore, sophisticated reasoners may be motivated less by internal rewards and more by responsibility. In addition, Candee and Kohlberg (1987) found that more sophisticated reasoners are more likely to participate politically in response to their sense of responsibility to do so.

Hypothesis set 2. In Equation 2 below, coefficient β_1 should be significantly larger for more sophisticated moral reasoners and coefficient β_2 should be significantly smaller. More sophisticated moral reasoners should show a larger effect of responsibility on motivation to participate in a group. They should also show a smaller effect of anticipated internal rewards on motivation.

Equation 2: Motivation = $\beta_0 + \beta_1$(responsibility) + β_2(internal rewards)

Finally, moral reasoning sophistication should not affect considerations that are ethically irrelevant. In the case of public interest group participation decisions, ethically irrelevant considerations include solidary benefits (friendship, camaraderie) and material rewards (Olson, 1965). Moral reasoning should not influence the size of the coefficient of either of these variables.

> *Hypothesis set 3.* In Equation 3 below, coefficients β_3 and β_4 should not be different for sophisticated and unsophisticated reasoners. Moral reasoning sophistication should not influence the degree to which anticipated solidary benefits or material rewards affect motivation to participate politically.

$$\text{Equation 3: Motivation} = \beta_0 + \beta_1(\text{responsibility}) + \beta_2(\text{internal rewards}) + \beta_3(\text{solidary benefits}) + \beta_4(\text{material rewards})$$

In describing how moral reasoning affects political participation decisions, this section has made use of such concepts as morality and responsibility. The more analytically minded will want precise definitions of these terms. These terms, however, are sufficiently complex that philosophers require whole careers to clarify and define them. Many frequently used social science concepts involve equal degrees of definitional complexity, particularly concepts of self-interest, choice, and rationality employed by rational choice practitioners. Because of the complexity of the concepts of morality and responsibility and the limited space available here, I in part rely on commonsense understandings of these terms. Hopefully, most people have some understanding of these terms. It is these understandings that will be tapped by the items proposed to measure these concepts below.

I will, however, briefly attempt to add some substance to the concepts of morality, moral value, and responsibility. As mentioned above, Kohlberg defines morality as impersonal, prescriptive, and generalizable rules guiding social behavior. Generalizability implies that the rules must be such that people can want these rules to apply to all persons. This formal definition does not appreciably clarify the substantive objective of morality, except perhaps to indicate that that objective results from pursuing impersonal, generalizable rules. The objective of morality is to pursue the good or morally valuable. One conceivable definition of the good is that which enhances the agency of persons—the capacity to choose actions consistent with a coherent sense of self. The exact substantive definition of the good does not matter much here, because this paper only requires that people have *some* conception of the good.

After Heider's (1958) analysis of "ought," responsibility might be understood as a type of psychological tension to make personal actions consistent with relevant standards. This perhaps borders too closely on motivation. Schlenker et. al (1994) define responsibility as that which makes people accountable for their actions—either to themselves or to an audience. In their view, responsibility comes about through three conditions—social or personal standards have clear implications

for a particular action, the standards apply to the person (identity relevance), and the action is relevant to the person (e.g., the person has control over the action). While clarifying the conditions under which people are responsible, this definition does not quite indicate what a responsibility is. Blasi (1983) sees responsibility as a judgment that, ". . . that which is morally good is also strictly necessary for oneself." (p. 198) This definition fits well with the model employed in this paper.

Method

Participants

For this research, I recruited undergraduates at a major state university. An examination of why college students choose to become politically involved can clarify how members of a politically important elite—college graduates (Wolfinger & Rosenstone, 1980)—first decide to become politically active. Intensive participation during college, particularly in political groups, carries over to later adult life (Fendrich & Turner, 1989; Merelman & King, 1986; Nassi, 1981). Such intensive involvement during the college years has effects on electoral behavior and political beliefs throughout adulthood (Jennings, 1987).

Respondents were selected from a gender- and ethnicity-stratified random sample of the university registrar's student list. Research assistants contacted prospective respondents by phone and offered them $6.50 to participate in an approximately 75-minute social science study. Of 219 students who could be contacted, 54% agreed to participate in an "interview" administered by a computer program.[1] Forty-seven percent of the respondents were male. The sample was 78.3% Caucasian, 13% African American, and 8.7% other. The median parent of respondents was a college graduate. All respondents were familiar with using computers.

[1] A total of 119 students were successfully interviewed; the data from one student were lost because of computer problems, 14 students were no-shows, and 85 refused to take part in the study. The 54% figure reflects the number of students who completed the interview divided by the total number of students contacted, lost, no-shows, and refused. The response rate is most meaningfully drawn by comparing the number of students who completed the interview to the number of students who self-selected out of the sample knowing something about the study. In addition, however, 85 potential respondents could not be reached after five calls (phone numbers may or may not have been valid), and phone numbers were not available for 250 others because the registrar did not require students to provide phone numbers. Including all these potential respondents, the response rate would be 22%. The reasons why students had or did not have a valid number with the registrar should be largely orthogonal to the variables of interest in this study. Also, according to registrar statistics, the population percentages of students who completed the interview resembled those of the student body as a whole with respect to eight ethnicity × gender categories (mean absolute deviation, 3%; standard deviation of absolute deviation, 2%).

Materials

The interviewing program provided respondents with information about 11 local public interest groups, such as Students for Life, Amnesty International, and the American Civil Liberties Union. Respondents read verbatim material from the recruitment literature of these groups or, if literature did not exist, a persuasive message written for this study by group representatives. In answering questions about a given group (see below), respondents could mouse-click any of 49 tick marks on each response scale (see the Appendix).

In the interest of reducing social desirability effects, respondents were led to believe the study was about groups generally. Hence, the interviewing program also provided information about recreational and social groups. A debriefing letter described the actual study goals.

Procedure

Respondents came at an appointed time to a university computing site and were met by a research assistant, who directed them to any free computer at the site. The assistant logged respondents into the interviewing software and explained that their responses, which were automatically placed in a network directory, could not be connected to their identity. The assistant then went to work outside the visual and aural range of the respondents. When they completed the interview, respondents went to the assistant to receive payment.

The initial screens of the interviewing software provided respondents with all necessary instructions. The interview then began with general questions about the respondent, such as prior political and humanitarian participation. Next, respondents were asked to select a favorite group from a list of public interest, campaign, social, and recreational groups. Respondents could read group literature by clicking the name of any group on the list. They were asked to read all of the literature of their favorite group—the group in which they would be most likely to participate. Respondents were then asked questions about their favorite group, including the ethical responsibility model questions (see below). They were initially asked to type up to five goals they associated with the group. These goals were then listed in a box on all screens containing questions about group goals (see the Appendix).

Next, respondents were asked to select a second group from a list containing only the public interest and campaign groups. After being interviewed about the second group, respondents were asked whether they wished to be contacted by either or both of their two favorite groups; if so, they were told to enter their name and phone number. Instructions explained that respondents would lose their anonymity if they provided this information. The interview concluded with the DIT test of moral reasoning sophistication followed by demographic questions.

Of 119 respondents, 109 reacted to one or two public interest groups during the course of the interview, for a total of 152 observations of public interest groups.

Of these, 10 observations had missing data for age or cognitive ability, important control variables. Excluding these 10 observations, there were 142 observations from 104 individuals.

Respondents wishing to be contacted by a group were called by a confederate posing as a representative of that group, who indicated uncertainty as to whether the respondent was interested in "their" group. Respondents thus had a chance to bow out by saying there was a mistake. Interested respondents were invited to an "introductory meeting," and those who showed for this meeting were debriefed. This ruse served as a measure of participatory behavior subsequent to the interview.

Measures

Measure of moral reasoning sophistication. The P score used in the present study was based on four of the six dilemmas of the full DIT, including all three from the short version of the DIT (Rest, 1986). The full DIT was not used because of concerns over respondent fatigue. The dilemmas do not involve political participation decisions, but instead such issues as whether to steal a drug to cure one's dying spouse. The DIT requires respondents to rate and then rank 12 considerations in terms of how important the considerations are in solving the dilemma.

Ethical responsibility model measures. All of the terms in parentheses in the items below are scale anchors appearing on a 49-point scale (see the Appendix). The placeholder "[group]" indicates where the interviewing program substituted the name of a group. References to group goals in the items refer to a list of goals provided by the respondent (see the Appendix). A simple weighted average of the measures of each construct was used for analysis. The weights were determined by factor scores regressions on the results of confirmatory factor analyses (Muhlberger, 1995).

1. Moral value: "If it succeeded in achieving its goals, I think [group] would (greatly benefit humanity, moderately benefit humanity, slightly benefit humanity)," "If it succeeded in achieving its goals, I think [group] would make the world (a far better place, a moderately better place, hardly better)," and "If it succeeded in achieving its goals, I think [group] would (greatly help, moderately help, barely help) others."

2. Self-relevance: "The goals of [group] are (hardly relevant, moderately relevant, very relevant) to me."

3. Responsibility: "I feel (no responsibility, a moderate responsibility, a very strong responsibility) to contribute to these goals" and "The goals of [group] matter (hardly at all, moderately much, a lot) to me."

4. Internal rewards: "Contributing to these goals would make me feel (extremely good, moderately good, no different) about myself."

5. Costs: The difference between answers to two items, "In the next month, I will have (no, moderate amount of, very much) free time" and "Being a member of [group] probably takes (no time, moderate amount of time, very much time)."

6. Reported motivation: "I am (strongly motivated, moderately motivated, hardly motivated) to participate in [group]" and "I am (hardly curious, moderately curious, very curious) about [group]."

7. Selective incentives (material rewards): "If I were a member of [group], I would probably learn (nothing, moderately much, a lot) that would be useful to me in school" and "Becoming a member of [group] would (hardly help, moderately help, greatly help) me with my intended career."

8. Selective incentives (solidary benefits): "I would probably get along (so-so, moderately well, extremely well) with members of [group]" and "As a member of [group], I would probably have (lots of chances, moderate chances, few chances) to make new friends."

Control variables. The P score and the ethical responsibility model may be spuriously related. Consequently, it is important to control for potential confounding variables. Older and more educated persons have higher P scores (McNeel, 1994; Rest, Cooper, Coder, Masanz, & Anderson, 1974). These factors might also covary with other forms of development that may affect participation decisions. Because age and education are highly correlated in the current sample, I relied on age as a proxy for education. Education does not significantly ($p = .18$, one-sided) affect the P score when controlling for age. Mother's education was also used to control for respondent's developmental and socioeconomic background.

Cognitive ability was measured using an index that combines self-reported Scholastic Aptitude Test (SAT) score, American College Test (ACT) score, and cumulative grade-point average (GPA). Ninety-one percent of respondents agreed to report either SAT or ACT scores, and 63% agreed to report their GPA. To create a single cognitive ability indicator, I placed the ACT and SAT scores and the GPA on a common scale using regression conversion values provided by ACT Inc., formerly the American College Testing Program (Houston & Sawyer, undated) and coefficients of a regression of the ACT score on GPA.

Carefulness of responding needs to be controlled for because it may create a spurious relationship between P scores and the responsibility model. Respondents who filled out the DIT carefully should receive higher P scores. Carefulness may also affect responsibility model answers because more careful respondents may be seeking to present themselves favorably. Carefulness of response and favorable self-presentation were measured in several ways. The DIT's M score (Rest, 1986) indicates how much weight respondents put on meaningless but sophisticated-sounding statements embedded in the DIT. Another measure indicates the total number of inconsistencies between ratings and rankings. A third indicates the mean absolute deviation in ratings. More variability may indicate that the respondent is thinking more about the considerations. Finally, the amount of time spent on the DIT can serve as an indicator of careful responding.[2] Rest endorsed dropping

[2] The second and third measures are modifications of Rest's consistency measures that better capture reliability. For example, Rest recommended two rating/ranking inconsistency measures, one

especially careless respondents. Because the statistical techniques used here address heteroskedasticity, I have not dropped any respondents.

I created a single reliability index to represent all four DIT internal consistency measures by standardizing each and averaging the four values. The accuracy of the index can be judged by how well it predicts the P score, because the P score is systematically lower for careless respondents. The index explains 87% as much variance in the P score as do all four indicators separately.

Political knowledge and experience may affect how people make participation decisions. Controls for these included political sophistication, self-reported prior knowledge of the group, and self-reported total hours previously spent working for political and humanitarian groups. The political sophistication measure is a dichotomous variable based on the standard questions from the National Election Studies (NES) regarding ability to identify the Republican Party as the more conservative. The prior knowledge item was "How much did you know about [group] before you read about the group just now? (very much, moderately much, hardly anything)." Also, the standard NES ideology item was used to control for political ideology: "Place yourself on the scale below: (very conservative, conservative, neither, liberal, very liberal)."

Finally, I controlled for gender and ethnicity to insure that the results did not obscure gender and cultural differences. Because of the small number of non–African American minorities, ethnicity was entered as a dichotomous variable distinguishing Caucasians from non-Caucasians.

Validity of the Measures

The validity and reliability of the moral reasoning measure used here, Rest's DIT P score, has been established by numerous studies (reviewed in Rest, 1979, 1983; Rest & Barnett, 1986). These studies show the following: (a) Respondents asked to fake a high P score are unable to do so. (b) The P score significantly correlates with a wide variety of moral and cooperative behaviors, even with controls for intelligence, socioeconomic status, and other variables (Thoma, 1994). Behaviors include prisoner's dilemma cooperation, equitability in distributing rewards, and low levels of antisocial behavior. (c) The P score significantly predicts comprehension of moral statements, even after controlling for verbal aptitude, intelligence, socioeconomic status, and education. (d) The P score shows clear age trends in longitudinal studies. (e) The P score has a test-retest correlation in the .7 to .8 range and Cronbach's α in the high .7's in several studies (Rest, 1986).

measuring maximum number of inconsistencies on any one dilemma and the other indicating the number of dilemmas with at least one inconsistency. A single rating/ranking inconsistency measure summarizing total inconsistencies across dilemmas is better for statistical analysis in the present study. The inconsistency measures used here better predict lower P scores than do Rest's measures ($R^2 = .13$, $p = .00$, vs., for Rest's measures, $R^2 = .05$, $p = .11$). Careless respondents should have lower P scores.

The validity of the ethical responsibility model (Figure 1) measures is more difficult to assess. These measures are questions about people's immediate, subjective impressions of a particular group's value to others, sense of responsibility, and so forth. Establishing the convergent and divergent validity of such "observational" measures is difficult because established psychometric scales are largely irrelevant. I have elsewhere (Muhlberger, 1995) published evidence for the validity of the measures used here. The self-relevance and moral value measures are significantly related with relevant self-concept and ideological measures, and not with irrelevant self-concept measures. People show an increase of about .3 standard deviations in self-relevance or moral value for each apropos self-concept under which they classify themselves. Also, the standardized coefficient for the regression of perceived moral value and ideological proximity are significantly correlated. As expected, after controlling for moral value, ideological proximity does not significantly affect other model variables.

Topically related articles in political science and psychology journals do not offer evidence for the convergent or divergent validity of observational measures such as the perceived moral value of a group's goals (Finkel, Muller, & Opp, 1989; Opp, 1986; Vallerand, 1992). At best, these articles offer measures with high face validity that survive confirmatory factor analysis. Confirmatory analysis shows that the relationships of the measures fit what would be expected if they measured distinct constructs. The measures used here have both high face validity because they are blunt questions about the impressions involved, and do well in an overall confirmatory factor analysis of this study's data [comparative fit index = .99; Satorra-Bentler scaled χ^2 $p = .11$ where $p > .05$ is good, and zs > 4.5 for all factor-variable paths (Muhlberger, 1995)].

The measures in this study are worded rather similarly, which may make the results of confirmatory factor analysis unrealistically favorable. The expected factor structure may fit because respondents memorize their responses and give the same answers to subsequent similar questions. Respondents, however, would have been hard-pressed to execute such a feat of memory. The questions in this study were scrambled so similar questions appeared far apart, out of order, and interspersed with numerous questions from other theoretical models. Many respondents commented that they felt they had been extremely inconsistent.

The validity of the measures is perhaps best established by the fact that they fit the responsibility model in Figure 2 (comparative fit index = .99; Satorra-Bentler scaled (χ^2 $p = .47$ where $p > .05$ is good, all path ps $< .005$) and that alternative relationships between the measures do not fit (Muhlberger, 1995). The present study and two currently unpublished studies, one on college students and the other on community members, indicate that the measures used here fit the responsibility model.

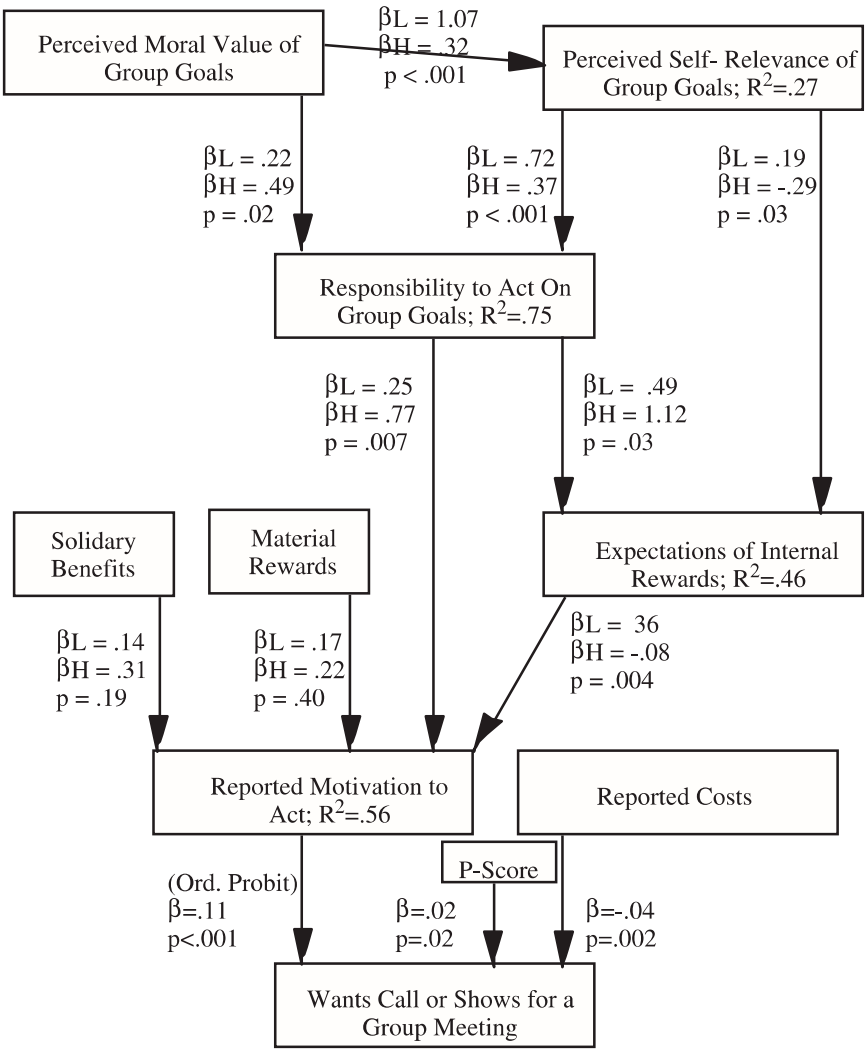

Figure 2. OLS estimated effects of moral reasoning sophistication on a model of participation decisions (GLS and SUR give similar results, see footnote 3); $N = 142$. All control variables and their interactions with model variables are included. βL is the unstandardized coefficient with the moral reasoning score at 1 SD below the sample mean, with controls set at their mean values. βH denotes moral reasoning score at 1 SD above the mean; *p* values are White or Huber robust *p* values and indicate whether moral reasoning affects the coefficient of the independent variable.

Results

The results are divided into five sections. The sections address, in order, the hypotheses developed above, an anomalous finding, a comparison of how high and low sophistication reasoners make participation decisions, the behavioral consequences of sophistication, and whether gender or intelligence account for the observed effects.

Tests of Hypotheses

I hypothesized that moral reasoning sophistication affects the strength of the pathways in the ethical responsibility model (Figure 1). This hypothesis could be tested by splitting the sample by median value of moral reasoning sophistication. This would, however, leave out considerable information about respondents' P scores, the measure of moral reasoning sophistication used here. I therefore employed a similar approach that retains all information: taking the product of the P score with the independent variables. For example, the regression equation testing hypothesis set 1 would be

$$\text{Responsibility} = \beta_0 + \beta_1(\text{moral value}) + \beta_2(\text{moral value})(\text{P score}) + \beta_3(\text{self-relevance}) + \beta_4(\text{self-relevance})(\text{P score}) + \beta_5(\text{P score}) + \text{other control variables and their interactions with moral value and self-relevance}$$

With respect to interpretation, suppose the regression generates the following coefficients:

$$\text{Responsibility} = .25(\text{moral value}) + .0025(\text{moral value})(\text{P score}) + \ldots$$

This segment of the equation is algebraically identical to

$$\text{Responsibility} = [.25 + .0025(\text{P score})] \times (\text{moral value})$$

In other words, the coefficient of perceived moral value is a linear function of the P score (moral reasoning sophistication). The coefficient of perceived moral value for someone with a zero P score is .25, whereas for someone with a P score of 100, the coefficient is a much larger .50 (that is, .25 + .25). This indicates that moral value more strongly affects responsibility for those with a high P score. (Note that β_5-type coefficients always prove far too small to overshadow the interactive effects of the P score, except in the unexpected effect described below.)

Figure 2 shows ordinary least squares (OLS) regression results testing the hypotheses (See the Appendix for coefficients and standard errors for the equations represented in Figure 2). More sophisticated statistical techniques addressing the complexities of the current data set give results substantively identical to OLS.[3]

[3] One such technique uses generalized least squares (GLS) analysis correcting for autocorrelated errors within respondents. The data contain two observations from a minority of respondents. The error of

For each pathway in the responsibility model (and for two pathways unanticipated by prior theory; see below), Figure 2 indicates what the pathway's coefficient is for persons with high and low P scores. βL and βH denote the coefficients for respondents with P scores one standard deviation below and above the mean, respectively (*P* score $M = 41$, SD = 16, observed range 8 to 83). One-third of the sample lies beyond one standard deviation from the mean.

Coefficients are unstandardized and on equivalent scales. Consider the βL value of .22 for the moral value → responsibility path. This means that people with low P scores (low moral reasoning sophistication) show a .22 average increase in sense of responsibility for a unit increase in the perceived moral value of group goals. In contrast, a person with a high P score shows a .49 unit change. The P score's effects are considerable, doubling or tripling the effect of each model variable. The *p* values shown in Figure 2 indicate the probability that moral reasoning sophistication has no effect on the coefficients. This null hypothesis can be rejected in all cases.

As anticipated by the proposed hypotheses, sophisticated reasoners emphasize morally relevant and deemphasize morally tangential cognitions in their participation decision-making. In accord with hypothesis set 1, more sophisticated reasoners show a stronger effect of perceived moral value on sense of responsibility to contribute to group goals (Figure 2). In addition, sophisticates show a weaker effect of perceived self-relevance of group goals on sense of responsibility. As anticipated in hypothesis set 2, more sophisticated reasoners show a larger effect of responsibility on motivation and a smaller effect of anticipated internal rewards on motivation. Sophisticates also show a larger effect of responsibility on internal rewards.

Consistent with hypothesis set 3, the P score does not significantly moderate the effect of solidary and material rewards. This shows that moral reasoning sophistication affects only the ethically relevant parts of the decision. Finally, though not anticipated by prior theory, the perceived self-relevance of group goals has a direct effect on anticipations of internal rewards. Consistent with what should be expected, sophisticated reasoners show less of an impact of self-relevance on internal rewards.

these observations may be correlated, yielding inaccurate OLS estimates of the coefficient standard errors. In the GLS analysis, an estimated correlation of all within-respondent error pairs was entered into an "omega" matrix and used as part of the regression process (Hanushek & Jackson, 1977, section 6.6). I estimated the correlation of error pairs using a grid search minimizing the standard error of the GLS regression, a technique yielding maximum likelihood estimates of the correlation (Greene, 1990, p. 443; Hanushek & Jackson, 1977, p. 173). The results are substantively the same as in Figure 2 because none of the rounded *p* values exceed .05. Two *p* values fall between .05 and .055, but all *p* values fall below .05 when robust standard errors are used. In addition, substantively identical results obtain for a seemingly unrelated regression (SUR) analysis that corrects for both error covariation across equations and within-respondent autocorrelation (as discussed in Greene, 1990, p. 519).

An Unexpected Effect

Prior theory also does not discuss the possibility that the perceived moral value of group goals and the self-relevance of these goals might be related. Wishing to see themselves as virtuous, people might view a group's goals as self-relevant if the goal has moral value. Figure 2 shows that moral value does significantly explain self-relevance, albeit weakly ($R^2 = .27$). Figure 2 also reveals an unexpected effect of moral reasoning on this relationship: Less sophisticated reasoners show a larger effect of moral value on self-relevance.

This result seems to conflict with the overall finding that unsophisticated reasoners place less weight on moral than on morally tangential considerations. This conflict, however, may depend on a superficial reading of the results in Figure 2. Low-sophistication respondents may not fully distinguish moral value from self-relevance, a possibility suggested by Kohlberg. Factor analysis suggests that low-sophistication respondents confuse moral value and self-relevance. The moral value and self-relevance responses can be explained by one factor for observations with P scores (moral reasoning sophistication scores) below the median (χ^2 $p = .32$), but a one-factor model can probably be rejected for observations above the median (χ^2 $p = .07$). Future research involving open-ended interviewing could further explore the meaning of the moral value questions for different respondents.

Another aspect of the data also supports this confusion explanation. Unlike the other regressions in Figure 2, in the regression of self-relevance on moral value, the coefficient of the P score is large—sufficiently so to completely compensate for the declining coefficient of moral value at higher levels of the P score. In other words, more sophisticated reasoners do not have lower levels of self-relevance than the less sophisticated. For the sophisticated, a larger constant compensates for a lower effect of moral value on self-relevance. Thus, for sophisticates, some factor unmeasured by the model supplants perceived moral value in determining level of self-relevance. Because the model covers ethical considerations, this factor is likely non-ethical. Perhaps, then, this result is consistent with the hypothesis that sophisticated reasoners more clearly differentiate between ethical and non-ethical considerations. Unsophisticated reasoners seem to confuse non-moral for moral considerations or allow moral considerations to influence non-moral considerations. In contrast, sophisticates appear to treat ethical considerations as irrelevant to non-ethical considerations.

In addition, low-sophistication respondents may be using self-relevance as a filter for determining which groups to join. Self-relevance would act as a filter if low-sophistication respondents are only interested in those groups whose morally valuable goals are also goals that are self-relevant. Because this study examines only respondents' favorite groups, such filtering could misleadingly result in a correlation between moral value and self-relevance. Finding statistical evidence for a filtering effect in the current data should prove difficult because of the need

to test a three-variable relationship. Even so, the data hint at a filtering effect. Interactions are a simple type of filter. A regression of motivation on the interaction of self-relevance and moral value proves positive and nearly significant for those with a P score below the median (OLS $p = .08$, one-sided, no controls), but in the wrong direction for those above ($p = .90$). Future research can explore this possibility by having respondents react to randomly selected groups.

Differing Models for Differing Sophistication

Figure 2 suggests that unsophisticated and sophisticated moral reasoners may be using altogether different reasoning strategies. To highlight the differences between high- and low-sophistication reasoners, it may be helpful to examine which pathways are used by persons at extremes of sophistication (1.5 standard deviations above and below the mean). Figure 3 shows the models used by these two extremes. The figure excludes pathways that have coefficients with $p > .20$, two-sided. All pathways with $.10 < p < .20$, two-sided, are dashed and show their p values. All solid-line paths are significant at better than $p = .05$, two-sided (no p values occur between .05 and .10). Path coefficients are also shown.

Figure 3 indicates that persons with differing levels of sophistication use different cognitions and pathways to arrive at participation decisions. For the highly sophisticated, sense of responsibility mediates the effects of all variables on motivation (exclusive of selective incentives). Internal rewards have no significant effects, and self-relevance has minimum effects. For the less sophisticated, responsibility plays no role. Indeed, the only variable with a clearly significant direct or indirect effect on motivation is expectations of internal rewards.

Total Effects

The results so far indicate substantial differences in reasoning between persons of high and low sophistication. Readers interested in the behavioral bottom line, however, would want to know whether persons of differing sophistication show significantly different total effects, via direct and indirect paths, of each cognition on motivation. (Motivation does significantly predict the two measured behaviors, with probit ps = .00.) Unfortunately, demonstrating such total effects proves difficult for cognitions distant from motivation in Figure 2. Calculating the total effect of perceived self-relevance on motivation (for different levels of moral reasoning) involves 204 coefficient terms, most of which are part of interactions containing more than two terms. This results in a test of low statistical power, something that cannot be remedied without a larger sample. Not surprisingly, then, neither perceived moral value nor self-relevance has total effects on motivation that differ significantly between people of high and low moral reasoning sophistication. Responsibility does have a significantly larger effect ($p = .05$), and internal rewards a significantly smaller effect ($p = .00$), for sophisticated moral reasoners.

Behavioral Effects of Moral Reasoning

Perhaps respondents who score high on moral reasoning sophistication are merely portraying themselves as ethically motivated. For example, they might report high levels of motivation when they feel a high level of responsibility, but they do not follow up with attempts to participate in a public interest group. This possibility can be tested by regressing behavior directly on responsibility and internal rewards and their interactions with sophistication.

An ordered probit model including controls[4] successfully predicted which respondents showed for a group meeting ($p = .00$)[5] and which respondents left a phone number so they could be contacted by a group ($p = .00$). In this analysis, sophisticated respondents proved to have significantly different coefficients than unsophisticated respondents for both sense of responsibility ($p = .03$) and internal rewards ($p = .02$). Sophistication has real behavioral effects.

Figure 4 provides graphic representations of the probability of the two behaviors for different levels of responsibility, internal rewards, and moral reasoning sophistication, as predicted by the ordered probit model. All variables not varying in a diagram are set to their mean values. Results incorporate the indirect effect of responsibility on behavior via internal rewards, as depicted in Figure 2. The first diagram shows the probability of leaving a phone number across the full sample

[4] An ordered probit model including cost, material and solidary rewards, and all controls and their interactions with responsibility and internal rewards yields even better results. The number of regressors in this model, however, raises the concern of overfitting because of low variability in behavior. Consequently, the text and figure report another analysis in which all controls were added but interactions with model variables were only included for the four controls that are theoretically and empirically most likely to account for a spurious effect of sophistication on dependent variables: cognitive ability, age, ideology, and the reliability index.

The ordered probit analysis involves 128 observations. Fourteen observations had to be discarded because the respondents requested a public interest group contact them, but my confederates were not able to reach these people. It is therefore unclear whether they would have come to a group meeting or not. Of the 128 observations, 13 were people who wished to be contacted but did not subsequently show for a group meeting, and seven were people who showed for a meeting. The ordered probit predicted 10 people wanting contact but not showing for a meeting, seven of which were correct. This may not seem like a good success rate, but the probability of correctly predicting seven or more out of 10 without information is less than 1 in 100,000. The probit also predicted four people showing for a group meeting, all four of which were correct. Again, the probability of such a prediction without information is less than 1 in 100,000.

One concern readers may have with this data are the small number of people who wished to be contacted or who came to a group meeting. Note, however, that the ordered probit makes full use of all the observations to predict each behavior. It leverages information in the 111 no-behavior observations, and it leverages information in one behavior to help predict the other. The N is therefore 128, not seven or 13, which is why the analysis so successfully predicts behavior, as just discussed. In addition, a simple probit of the 34 respondents who requested contact (13 from above + the 10 who requested contact and showed for a meeting + 14 people who requested contact but could not be reached) yields substantively the same results as the ordered probit.

[5] Ordered probit does not automatically estimate p values for each behavioral prediction. This p value was obtained from a probit analysis of showing for a meeting (and phone number) on the index values of the ordered probit.

range of moral reasoning sophistication and for responsibility set at one standard deviation above or below its mean. For example, persons with a moral reasoning score (P score) of 83 and responsibility at one standard deviation above the mean have a .47 probability of leaving their phone number.

Figure 4 shows that moral reasoning sophistication has a marked effect on how much responsibility and internal rewards affect the probability of behavior. For instance, persons who have a P score of 83 and responsibility at one standard deviation above the mean have a nearly 8% chance of appearing for a meeting, whereas persons with a P score at its mean or lower have nearly no chance of appearing. Also, it is evident from Figure 4 that expected internal rewards serve as a powerful disincentive for persons with high P scores but an incentive for those with low P scores.

Most important, sophisticated persons with a high sense of responsibility are more likely to show for a group meeting than are unsophisticated persons with high expected internal rewards—conditions that maximize participation for each subgroup. Sophisticated persons (those with P scores above the midpoint of the sample range) with a sense of responsibility one standard deviation above the mean have a 6.0% chance, on average, of showing for a group meeting. Unsophisticated persons with internal rewards one standard deviation above the mean have a 3.7% chance. Put another way, these sophisticated persons are 1.6 times as likely as

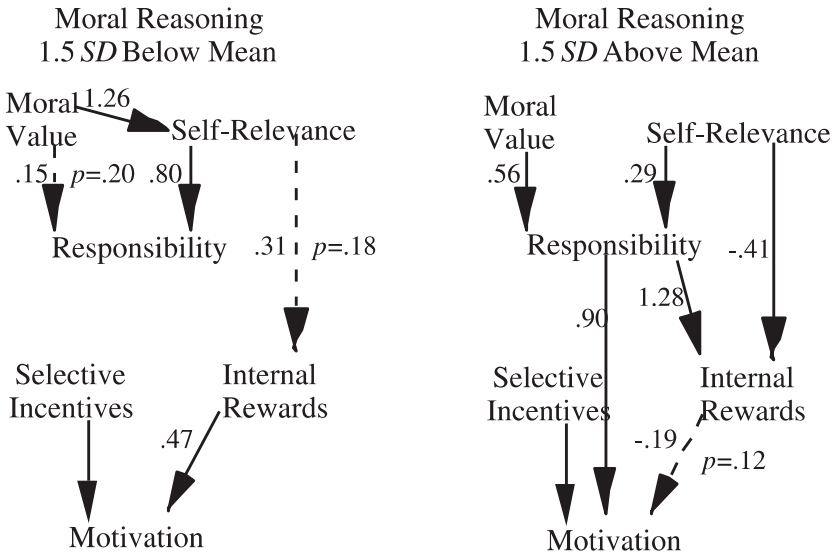

Figure 3. Participation decisions in very low sophistication and very high sophistication moral reasoners (±1.5 SD from mean), projected from OLS analysis ($N = 142$). All pathways significant at the .20 level or better, two-sided, are shown. Pathways significant between .10 and .20 are dashed and show p values. Solid-lined paths are all significant at better than .05, two-sided. Unstandardized OLS coefficients are shown. All controls were used in these analyses; p values are robust.

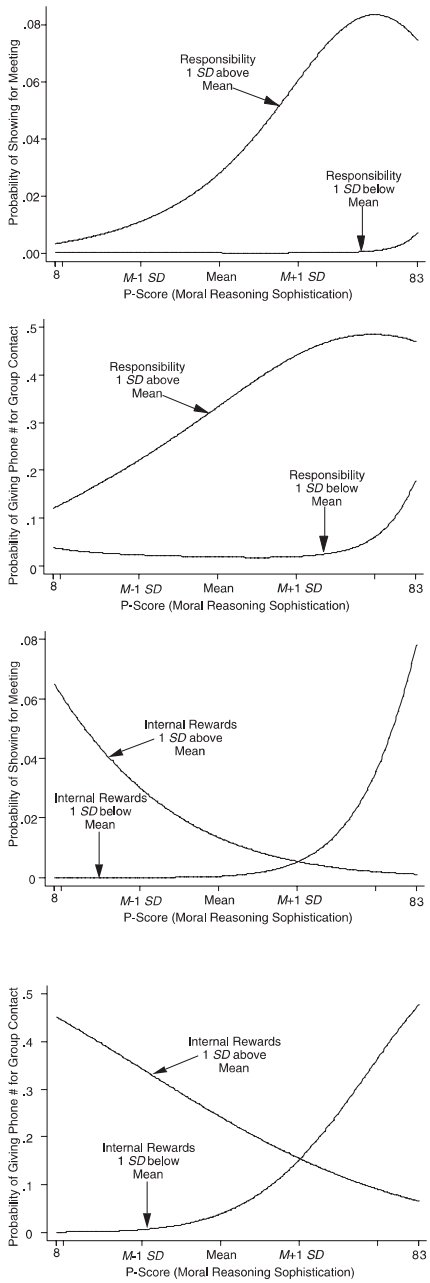

Figure 4. The probability of two behaviors of respondents (leaving a phone number so they can be called by a group, showing for a group meeting) by different levels of moral reasoning, responsibility, and internal rewards. Probability estimates are based on ordered probit analysis. All variables not varying in each diagram are set at their mean values. $N = 142$.

unsophisticated persons to show for a group meeting. If those who show for a meeting join the group at equivalent rates, then 1.6 times as many of these sophisticated persons would join groups. In politics, where margins matter, such differences are substantial.

The chances of showing for a group meeting may seem small, but consider what they mean over a series of participation opportunities. If sophisticated persons with the above characteristics are each given five independent opportunities to go to a public interest group meeting, 27% of these people, on average, will show for at least one of the meetings. In contrast, only 17% of unsophisticated persons would do so.

Empirical Responses to Counterarguments

Gilligan's (1982) criticism suggests that the P score (moral reasoning sophistication score) should have no significant effect on responsibility model pathways for women, only for men. To fully test this critique, it is necessary to include the triple interaction of gender, P score, and model variables (and lower-order interactions). Of six pathways tested with these triple interactions, only one has a p value less than .18, two-sided. The significant coefficient ($p = .04$) indicates that the P score has *more* of an effect on the pathway for women than for men.

Perhaps intelligence, not moral reasoning, accounts for the differences between respondents. Figure 2 controls for intelligence using the cognitive ability variable, but this variable might be inaccurate. Although imperfect, the measure of cognitive ability should capture intelligence to a degree. If intelligence explains the P score's effect on the responsibility model, omitting controls for cognitive ability should noticeably improve the p values of the effects of the P score. In a test, p values improved so slightly that intelligence seems an implausible alternative explanation (the average change is .002).

Discussion

Moral reasoning sophistication, a measure unrelated to political participation decisions, significantly and substantially influences how and whether people decide to participate in public interest groups. The sophisticated stress ethically relevant considerations, whereas unsophisticated reasoners stress ethically tangential considerations (Figure 2). The only significant direct or indirect influences on motivation for the highly unsophisticated are expectations of internal rewards and selective incentives (Figure 3). In contrast, internal rewards do not motivate the highly sophisticated. Instead, sophisticates base their decisions on sense of responsibility to contribute to group goals, the perceived moral value of group goals, and, to a lesser degree, the perceived self-relevance of the goals.

Moral reasoning sophistication substantially influences the probability of respondents leaving a phone number so they could be contacted by a group, as well

as the probability of their showing for a group meeting (Figure 4). Sophisticated reasoners with strong feelings of responsibility are substantially more likely to show for a group meeting than are unsophisticated reasoners with high expectations of internal rewards—conditions that maximize participation for each type of reasoner. The P score, the moral reasoning sophistication indicator used here, exhibits these cognitive and behavioral effects despite controls for cognitive ability, gender, ethnicity, age, parental education, prior knowledge about the political group, political sophistication, previous hours spent working for political groups, hours spent working for charitable groups, and carefulness of question response.

A critic might maintain that the P score simply measures ethical self-presentation, invalidating the results reported here. The current study, however, finds that the P score significantly influences behavior, not just attitudes. The anonymity procedures should also have insulated the findings from social desirability effects. Finally, prior research weighs against a social desirability explanation: Respondents cannot fake high P scores, the P score measures a comprehension skill, and it is correlated with prosocial behavior.

The present findings are important in several respects. First, the study more firmly establishes that ethical considerations matter for political behavior. Prior research that supports a role for ethical considerations in participation decisions used reported behavioral intentions or recollected past behavior as proxies for behavior (Finkel et al., 1989; Opp, Hartmann, & Hartmann, 1989). Leighley (1995) criticized such research on two grounds: (1) Recollections and intentions may not reflect actual behavior. (2) Reported ethical considerations may not causally influence future behavior because such reports may be nothing more than summaries of past behavior. This study addresses these critiques because subsequent behavior is actually measured and past participation is controlled. Moreover, the model presented in this paper contributes to the literature by clarifying how two important factors—identity (Monroe & Epperson, 1994) and ethical considerations (Finkel et al., 1989)—enter into participation decisions.

The non-obvious nature of the findings also bolsters the case that ethical considerations matter politically. Suppose that ethical considerations merely summarize past behavior, so that the relationship between ethical considerations and future behavior is spurious. If so, there should be no reason why a cognitive ability—moral reasoning—with no directly political content should affect the strength of the relationship between ethical considerations and future behavior. If a social desirability explanation of the findings is also ruled out, for reasons already mentioned, the findings seem to compel the conclusion that political participation behavior is appreciably influenced by ethical considerations and reasoning.

The findings here also suggest interesting hypotheses for future research. Moral reasoning sophistication may contribute to explaining differences in the political behavior of advantaged and disadvantaged population groups. Specifically, persistent involvement in public interest groups tends to be dominated by the middle class (Schattschneider, 1964), whereas the disadvantaged tend to participate

in sporadic, publicity-driven social movements (McAdam, 1982), which limits their efficacy (Lipsky, 1969).

My findings may help explain why the disadvantaged are more easily mobilized by high-publicity social movements than by ordinary public interest politics. The educationally disadvantaged possess less moral reasoning sophistication on average (Deemer, 1987), possibly because their environments raise fewer complex ethical questions. As Figure 3 indicates, unsophisticated reasoners are significantly more motivated to participate out of expected internal rewards than out of a sense of responsibility. Internal rewards are responsive to context and social framing because of their dependence on self-esteem considerations (Rigby et al., 1992; Ryan, 1982). Consequently, internal rewards should be more plentiful in the high-publicity, high–social approval context of social movements than in ordinary public interest politics. This could explain why the disadvantaged participate primarily in social movements.

Existing theory provides additional insights into why internal rewards should have less impact on ordinary public interest participation than does responsibility. Meeting with a group of strangers is a risky way to insure internal rewards. In contrast, a sense of responsibility can only be fulfilled by taking political action, because sense of responsibility is a more internalized motive than internal rewards (Rigby et al., 1992; Ryan, 1982). Indeed, more sophisticated moral reasoners are more likely to experience internalized prosocial motives (Ryan & Connell, 1989). Persons whose political motives are more internalized are more likely to participate without external social incentives (Koestner, Losier, Vallerand, & Carducci, 1996). Greater internalization should therefore enhance the odds that people who intend to show for an interest group meeting actually follow through in the absence of pressure from family and community.

The findings might also help explain why social movements are so sporadic and difficult to perpetuate (Lipsky, 1969). Internal rewards motivate participation much more weakly among the unsophisticated than does sense of responsibility among the sophisticated (Figure 4). Only when internal rewards are exceptionally high does participation of the unsophisticated rival that of the sophisticated. Maintaining high levels of internal rewards among participants should be difficult because these rewards will depend on the ebb and flow of publicity and social approval.

Moral reasoning sophistication might also help to explain the evidence that people who grow up in plentiful times are more concerned about political issues that do not directly affect their material interests, such as environmental issues (Inglehart, 1990). In contrast, people who grow up in harsh times focus on material values such as economic well-being and security. This finding is not satisfactorily clarified by the problematic theory of human need hierarchies (Dawes, 1995; Inglehart, 1990). People who grew up in harsh times should be less likely to develop sophisticated moral reasoning. The findings here show that strictly ethical concerns have less of an impact on unsophisticated reasoners. Issues such as the environment

may draw more heavily on ethical concerns than do more materialistic political issues. Consequently, low-sophistication persons may not be attracted to such issues.

Finally, the present findings suggest that people have cognitive competencies that powerfully affect their contextually informed reasoning and behavior. The success of this research strategy holds promise for future research in the same vein.

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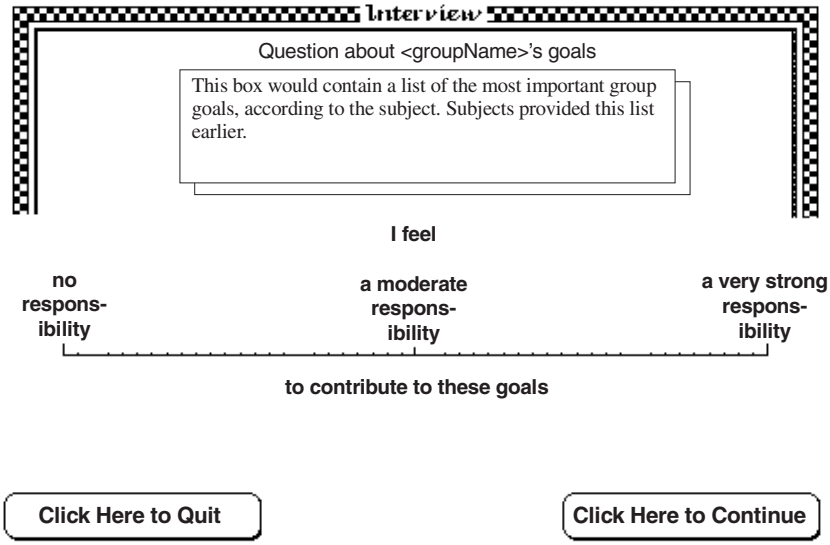
APPENDIX

Representative Computer Screen



Coefficients and Standard Errors for Regressions Shown in Figure 2

	Independent variable 1		Independent variable 2	
Dependent variable	Name	Coefficient (SE)	Name	Coefficient (SE)
Self-relevance	Moral value	1.6596[ab]		
	P(Moral value)	–.0232 (.0069)		
Responsibility	Moral value	.0115[b]	Self-relevance	.9842[b]
	P(Moral value)	.0083 (.0038)	P(Self-relevance)	–.0106 (.0029)
Internal reward	Self-relevance	.5656[b]	Responsibility	.0055[b]
	P(Self-relevance)	–.0149 (.0080)	P(Responsibility)	.0193 (.0102)
Motivation	Internal reward	.6965[b]	Responsibility	–.1562[b]
	P(Internal reward)	–.0134 (.0046)	P(Responsibility)	.0160 (.0058)

Note. P signifies the P score measure of moral reasoning sophistication (M = 41, SD = 16, observed range 8 to 83).

[a]Coefficients for main-effects variables (such as moral value) are a sum that includes the coefficients × mean of control variables for all main-effects variables × control variable interactions.

[b]SEs are not reported for main effects because they are essentially meaningless. They are not invariant with respect to additive changes of scale.