

Exploring the Roots of Public Participation in the Controversy Over Embryonic Stem Cell Research and Cloning

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Abstract In this study, analyzing nationally represented survey data collected in 2003, we consider the roots of issue-specific citizen participation in the controversy over embryonic stem cell research and therapeutic cloning. Building on past research, we pay particular theoretical attention to the role of issue engagements, the impact of church-based recruitment, and the influence of news media attentiveness. Given the increasing emphasis in science policy circles on creating new forms of public engagement, we also measure citizen willingness to attend and participate in a proposed local deliberative forum on the stem cell debate. Results indicate that traditional forms of citizen activism in the controversy over embryonic stem cell research and cloning is rooted almost exclusively in direct requests for participation through religious organizations rather than socio-economic differences among respondents, though issue engagement (measured as opinion intensity) and news attentiveness also play an important role. In terms of deliberative forums, traditional resource factors are significant, as the citizens who indicate they are most likely to participate in such a hypothetical local town meeting are generally highly educated, white, and younger. Above and beyond these resource factors, however, citizens willing to participate are also likely to have received requests to get involved in the debate at church, hold more intense feelings about the issue, and are paying closer attention to news coverage. In the future, in order to ensure the normative goals of diverse and/or representative participation, if actual deliberative forums are employed, these findings suggest that organizers will need to focus heavily on purposive sampling and turn out efforts.

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Introduction

A diversity of scholars across several disciplines have examined the roots of public participation in politics, yet the majority of studies have focused heavily on generalized forms of political participation, sometimes ignoring how the factors that shape citizen activism might vary when it comes to specific policy debates. Verba, Schlozman, and Brady (1995) noted that issue-specific participation may not be rooted solely in resources such as income, education, or even measures of generalized engagement such as political knowledge. Instead, activism may either reflect intensely held political beliefs among a specific segment of the public about an issue of moral consequence such as abortion, or participation may spring from a personal stake in government decisions, particularly the distribution of benefits. In other cases, especially on moral issues like abortion, citizen participation might be generated by either the skill building or recruitment efforts of churches.

Given current trends, understanding the factors that drive issue specific participation is increasingly important. Historically, across issues, activism by a vocal minority has often trumped an apathetic and silent majority in policymaking (Dahl, 1956, 1989). Therefore, figuring out the process by which various “issue publics” are activated, and the mechanism by which this occurs, has always been a central question in understanding how public preferences are translated into political outcomes (Converse, 1964).¹ Yet, in contemporary American politics, the fact that fewer and fewer Americans may be participating in politics through avenues other than voting (Putnam, 2000), means that the voices of an ever smaller, but active minority may prove increasingly decisive when it comes to actual policy decisions.² Extreme opinion intensity among a minority public in combination with focused organizational recruitment function as “wildcards” of participatory inequality, potentially leading to strong differences between the attitudes and characteristics of the “participant public” for a particular issue and the citizenry at large (Verba et al., 1995).

In this study, we attempt to further our understanding of the mechanisms behind issue-based activism by examining traditional forms of citizen participation within the context of the contemporary controversy over embryonic stem cell research and cloning. Unlike much of the past research that relies on surveys of activists or organized interest group members (Hildreth, 1994; Leighley, 1996), in this study we utilize data from a nationally representative survey. Building on Verba et al. (1995), above and beyond traditional socio-economic factors, we pay particular attention to the role of opinion intensity in shaping citizen involvement. Given the moral nature of the stem cell debate, we also focus on churches as organizations shaping participation. Specifically, we test whether organizational influence occurs simply through involvement in the church (measured by church attendance), and/or by way of direct recruitment and appeals for political participation by church leaders. In addition, we consider the important mediating influence of news

¹ A number of important studies have considered differences in public attitudes among issue publics and the mass public. These studies often measure issue publics in terms of knowledge, education, and self-reported interest in the policy area (Krosnick & Telhami, 1995).

² Verba et al. (1995) present evidence that levels of participation have been changing for different types of participation. For example, voting and membership in political clubs have decreased, while contributing to candidates and letter writing have increased.

coverage in shaping issue-specific participation. Finally, given the many calls for new institutional forms of public engagement when it comes to science policy, we explore the factors that shape citizen willingness to attend and participate in a local deliberative forum on the stem cell debate.

Issue Specific Participation and Biomedical Controversies

Questions of participation inevitably begin (though rarely end) with the calculus of economic rationality (Downs, 1957). Despite the parsimony of rational choice models, however, much of the participation that actually occurs in American politics is motivated not by self-interest (unless such interests are defined very broadly) but either because citizens want to impact policy or because they were asked to participate by others (Rosenstone & Hansen, 1993; Verba et al., 1995, 2000).³ The general contours of political participation have been most clearly spelled out by Verba et al. (1995) within the context of the Civic Volunteerism Model. The Civic Volunteerism model specifies participation as a function of four factors: (1) Resources such as time, money, organizational and communication skills (2) Psychological engagement including political interest, knowledge, and efficacy; (3) Recruitment in the form of direct requests for political action; and (4) Issue engagements, a label used to describe strong opinion intensity and a passionate commitment to a policy outcome. Within the context of the current analysis, we begin by focusing on the relationship between issue engagements and recruitment and then turn our attention more specifically to religious organizations.

Issue engagements enter into the Civic Volunteerism Model as deeply held beliefs or a stake in government decisions that contribute to participation beyond resources, general engagement, or recruitment. Using abortion as a test case for examining the impact of deeply held beliefs about social issues, Verba and his colleagues detailed a leading example of “representation distortion.” When it came to abortion activism, the most likely Americans to participate were not the resource rich or the generally politically knowledgeable, but rather the resource poor and the otherwise politically unaware citizens who held intense pro-life opinions. Conceptually, issue engagements are distinct from recruitment efforts by organized interests in that they are spontaneous, individual directed activity. Distinctions between the two influences, however, are conceptually and methodologically difficult to draw. In their analysis of abortion-specific participation, for example, Verba et al. (1995) are unable to control for abortion specific recruitment within their models. Noting the tension between recruited versus spontaneous activity they write that: “These data indicate that the massive volume of requests for political action plays a significant role in inspiring communication to public officials... Nevertheless, the data also make clear that a remarkably high proportion of the contacts to government are more or less spontaneous acts of individual citizens.” As Verba et al. (1995) observe, the question of how much of the variance in activity is recruited and how much is spontaneous is likely to differ from issue to issue.

Research on issue specific participation at the individual level has not only focused on morally divisive issues such as abortion or Vietnam (Verba & Brody, 1970), but also distributive policies such as social security, Veteran’s benefits, and welfare (Campbell, 2002, 2003a, b). The distinction is important as issue specific participation motivated by

³ Verba et al. (2000) correctly note that rational choice models actually come in a variety of shapes and forms, with variations dependent upon decision-making context and assumptions about preferences and constraints. Rational choice models also do a much better job explaining the calculus by which organized interests “prospect” for participants (Brady, Scholzman, & Verba, 1999).

the allocation of government benefits is likely to revolve on material self-interest (Campbell, 2002), while participation on more visible and highly controversial issues is more likely to be driven by purposive benefits and other types of incentives (Verba et al., 1995). Research on participation among congregants in churches participating in the sanctuary movement likewise highlights the importance of purposive and nonmaterial benefits (Hidreth, 1994). What is generally missing from this research, however, is the ability to connect individual participation on a specific issue with direct appeals for participation and recruitment by an organization on the same issue. Campbell (2003a), for example, speculates that an increase in Social Security related participation in the 1980s may have been driven by interest group recruitment efforts but also notes that her research was unable to specify the exact mechanism of influence.

Narrowing the focus to citizen participation in questions of science policy, a considerable amount of research has been conducted; but citizen involvement, for the most part, has been studied and promoted not in terms of individual participatory actions such as contacting elected officials, contributing money to organizations, or writing letters to editors, but rather with a focus on administratively managed contexts where small numbers of affected and informed citizens can provide “input” to policymakers and scientists (House of Lords, 2000; Irwin, 2001). These contexts include deliberative polls, case studies, consensus conferences, citizen juries (Dutton, 1984; Einsiedel, Jolsoe, & Breck, 2001), focus groups, and town meetings (McComas, 2001). Very few, if any studies have focused on the direct channels, outside the control of these managed contexts, that citizens use to shape science policy (Brossard & Shanahan, 2003). Likewise, little or no research has studied participation on these questions with a randomly selected sample of the general population (as opposed to samples of activists or group members), and none of the existing research has examined the role of religious organizations in generating participation within the context of science policy. Our current research is designed as an attempt to address this gap. First, however, we outline the literature on church-based recruitment drawing out our expectations for the role of the church in influencing participation in biomedical controversies.

Church-based Recruitment

More than three decades ago, Robert Salisbury (1975) drew attention to the important influence of mediating institutions such as the church in distinguishing between citizens who participate in politics seemingly without prior social influences, so-called self-starters, and those citizens who are recruited into action by others. Sociologists such as McCarthy and Zald (1977) similarly emphasized in their research on resource mobilization the ability of social movement organizations to transform both constituents and bystanders into activists. Research in American politics by the 1980s began to move beyond the individual-level focus on socio-economic characteristics as determinants of political participation (i.e. Verba & Nie, 1972), and to emphasize social settings as social structural determinants of general forms of participation (i.e. Huckfeldt & Sprague, 1995; Verba et al., 1995).⁴ Over the same time period, these works complemented a growing literature highlighting the likely role of American churches as political institutions generating citizen activism (Brown, 1996; Wald, Owen, & Hill, 1988; Warren, 2001; Wood, 2002).

Using Leighley’s (1996) terminology, organizational influence can be either: (1) intentional, occurring through a direct request; or (2) unintentional, occurring through

⁴ For a recent overview of the literature on the social structural effects on participation, and their connections to mass-mediated influences, see Scheufele et al. (2004).

organizational interactions between group leaders and group members and the subsequent development of organizational and communication skills by members. Leighley (1996) concludes that unintentional influence is the more likely (and normatively more desirable) path to participation. The finding is consistent with the Civic Volunteerism Model in which the impacts of religious and workplace organizations on participation is defined primarily in terms of “unintentional” effects: the development of organizational and communication skills that are easily transferred to the political world. Related research focused more specifically on religion and politics indicates that churches provide an abundance of resources favorable to collective action including formal membership, an organizational headquarters, meeting places, publications, and professional leadership (Wald, 1992; Wald et al., 1988). Churches also provide individuals with organizational skills that can be nurtured through involvement and political action (Harris, 1994).

While the Civic Volunteerism Model emphasizes the importance of “unintentional” skill building effects of churches, it also notes the importance of more direct efforts at political recruitment. As Verba et al. (1995) note, churches that are more politicized may also play an important role in directly recruiting participants into the political arena by direct appeals to political action, providing political information such as candidate scorecards, or through politically oriented sermons (see, also, Burns, Schlozman, & Verba, 2001; Greenberg, 2000; Kohut et al., 2000; Scheufele, Nisbet, & Brossard, 2003; Wald, 1992). Other researchers, including Warren (2001) and Wood (2002) have likewise argued that among these various social settings, the strong shared moral values and bonds of trust common to church networks magnify their potential for political recruitment, suggesting for example, that activist church networks featuring a politically oriented pastor or church leader can strongly influence a citizen’s decision to participate. Studies of religious clergy indicate that conservative clergy most concerned about moral reform are currently most likely to engage in the political process, though the authors also note that the correlation between level of activity and political perspective is unlikely to remain constant (Guth et al., 2003).

As political institutions, churches provide opportunities and incentives to engage in politics (Greenberg, 2000; Wald et al., 1988). Religion’s relevance is not lost on political elites, who routinely develop campaign themes and use religious imagery as a way to connect religious worldviews with political participation (Leege, 1993). Building on this likely interaction between social capital and social pressure, other recent research has similarly focused on specific mechanisms by which American religious institutions sponsor political activity (Djupe & Gilbert, 2002; Djupe & Grant, 2001; Greenberg, 2000; Kohut, Green, Keeter, & Toth, 2000; Scheufele et al., 2003). While many studies on church influence have focused on traditionally white congregations, research specific to the influence of church-going on African–American policy activism finds similarly that simply attending a church is not sufficient for generating participation. Instead, political activity increases in churches where members are exposed to political discussions, and are encouraged to be activists (Brown, 1996; R.K. Brown & R.E. Brown, 2003). In all, active recruitment by church elites, not just church attendance, appears to be critical if church-going is to translate into political activity.

The discussion of issue engagements and church-based recruitment efforts leads to the following set of hypotheses regarding the mechanisms shaping issue-specific participation in the controversy over embryonic stem cell and cloning:

H1: Exposure to church-based recruitment efforts specific to the issue of stem cell research and cloning will be significantly and positively related to issue-specific political participation on the part of citizens.

H2: Opinion intensity, as an indicator of deeply held beliefs and representative of issue engagements, will be significantly and positively related to issue-specific political participation on the part of citizens.

Attention to News Coverage

Political participation is also likely to be influenced by the degree to which an individual, by way of news media coverage, is both aware of the issue and aware of the available opportunities to participate. Previous research has documented the links between news media use and political participation, with most of the research indicating a stronger effect for newspaper use than for television (Eveland & Scheufele, 2000; McLeod, Scheufele, & Moy, 1999; Scheufele et al., 2003).⁵ Much of the impact of newspaper use on participation is thought to be indirect, as mediated by its influence on political knowledge and efficacy (McLeod et al., 1999; Scheufele & Nisbet, 2002; Nisbet & Scheufele, 2004). However, others have suggested that some of the positive effects of attention to newspaper coverage is direct, promoted by the type of “mobilizing information” (Lemert, 1992) that can be gleaned from the news. Mobilizing information extends beyond merely information about political institutions or political figures, and instead includes details that integrate political issues into the community context, containing specific details on whom to contact, how to donate money, or where to voice one’s opinion (Eveland & Scheufele, 2000).

Attention to newspaper coverage also likely plays an important “articulation function” relative to participation, providing a citizen with a repertoire of arguments that can be used to persuade another individual to adopt their viewpoint, or that can be used in drafting letters to the editor, or writing elected officials. Borrowing arguments from news coverage might also boost a citizen’s confidence and willingness to participate in alternative and managed forms of public participation such as town meetings, community forums, focus groups, or deliberative polls (McLeod et al., 1999; Scheufele, 2002). The discussion of the influence of attention to news coverage, leads to our third hypothesis:

H3: Attention to newspaper coverage of the debate over stem cell research and therapeutic cloning will be significantly and positively related to issue-specific political participation.

Traditional Participation Versus Deliberative Forum Participation

As previously mentioned, much of the emphasis in the study of public participation relative to science and technology controversies has been focused on citizen participation in institutionally managed deliberative contexts such as town meetings, deliberative polls, focus groups, or citizen juries. Although localized deliberative forums on science and technology issues were utilized in the U.S. in the late 1970s specific to controversies over recombinant DNA research (Krimsky, 1991), most decision making in the intervening years has occurred at the Federal level and within administrative contexts such as the FDA or NIH. This scenario differs from alternative examples in Canada and across the European

⁵ Major differences in the amount of attention to the stem cell and cloning debate between newspapers and television news is also likely to account for a much stronger role for newspaper use in the current study. For the year 2002, *ABC World News Tonight* and *CBS Evening News* devoted just eleven news stories to the issue, versus more than 120 news articles that ran at the *New York Times* and *Washington Post*. For 2003, the two networks ran 25 news stories compared to 294 articles at the two newspapers (Nisbet, 2004).

Union where either national or regional deliberative forums on biotechnology have frequently been held. Recently, in the U.S., however, there have been renewed calls for the creation of deliberative contexts that would involve citizen participation in policy-making on biomedicine, agricultural biotechnology, and nanotechnology, to name just a few salient topics (Jasanoff, 2005). From a technocratic standpoint, the emphasis on these specialized settings reflects the scientific community's preference to remain somewhat immune to public interference, and to manage public "input" by exerting control over both the forum and the mechanism of expression (Brossard & Shanahan, 2003). In other cases, the attitude is motivated by an understanding that scientific experts and government administrators are often bounded by their specializations. In these cases, scientists and policymakers may realize that lay citizens might have a better grasp than technical experts on the social dimensions of a science and technology dispute, may have a normative right to be involved in decision-making (Brossard & Shanahan, 2003), or may have a need to feel a part of the decision-making process (McComas, 2001).

From a more general democratic theory perspective, research on citizen willingness to take part in deliberative forums as an alternative form of participation has emphasized that these managed contexts allow for the exchange of information among other equally interested citizens, and for two-way interaction with decision-makers, rather than the one-way interaction of letters or phone calls to elected officials. This facet of deliberative forums appeals to a number of democratic ideals put forth by theorists including the requirement that citizens should deliberate issues in knowledgeable face-to-face interactions with a diversity of neighbors, friends, and colleagues (Dewey, 1954; Habermas, 1989). Deliberative forums also differ from traditional participatory activities in that they involve the *public* expression of a viewpoint, often in the presence of other citizens who may raise opposing arguments. Unlike traditional forms of participation, where citizens are likely to be recruited within homogenous contexts such as a church, deliberative forums involve interaction with a more heterogeneous group of citizens who often hold opposing views (McLeod, Scheufele, Moy, Horowitz et al., 1999; McLeod et al., 1999). Yet despite these normative differences, research indicates that citizens most likely to participate in such forums are already the most active in terms of traditional forms of participation. They include individuals who are already politically motivated, resource advantaged, have greater luxury of opportunity (Price, Dutwin, & Na, 2000), or who have stronger local ties or engage more frequently in traditional political activities (McLeod et al., 1999). Given an interest in predicting citizen activity in deliberative forums versus more traditional forms of political participation, the following research question is posed:

RQ: In comparison to traditional participatory activities, are there variations in the influence of church-based recruitment, opinion intensity, and news attention on citizen willingness to participate in a deliberative forum?

Method

Data for this study are based on a nationwide telephone survey of 407 randomly selected voting age U.S. residents. The Reilly Center for Media and Public Affairs located on the campus of Louisiana State University conducted the telephone interviews from November

7 through November 25, 2003. Interviews were conducted by trained staff and lasted an average of 15.4 min. Numbers where callers received no answers were called back ten times before being removed from the pool of eligible numbers. Three attempts were made at refusal conversation no sooner than 72 hours after the initial refusal. The response rate for the survey was 33% and the cooperation rate was 47%⁶. We detail the descriptives and scaling for these measures in the rest of this section.

Dependent Variables

We measure political participation using indicators of (a) individual forms of past activism specific to the stem cell and cloning issue such as contacting an elected official or contributing money and (b) the citizen's willingness to participate in a managed deliberative context, in this case a local community meeting on the topic of stem cell research and therapeutic cloning. To measure individual forms of participation, we asked respondents whether in the last 2 years they had: (1) Written a letter or called a radio talk show about the issue of stem cell research or therapeutic cloning (6% of the sample); (2) Contacted a public official about the issue of stem cell research or therapeutic cloning (5%); (3) Contributed money to a group supporting or opposing stem cell research and therapeutic cloning (7%); or (4) Tried to persuade someone they knew to support or oppose stem cell and cloning research (7%). These items were modeled after standard indicators of participation included in the National Election Studies and other studies of participation, and then adapted to be issue specific. Each of the variables is coded 1 if the respondent engaged in the activity and zero otherwise.⁷ We also use as an additional dependent variable an index of participation created by summing each of these dichotomous variables. The index of participation runs from "0" for respondents who did not engage in any of these forms of participation to "4" for those respondents who indicated participating in all of the listed activities ($M = .25$, $SD = .61$, $KR-20 = .50$).⁸

⁶ Response rates have been declining over the last several years. Our response rate—while not ideal—falls within current academic survey center norms (Kosicki, Marton, & Lee, 2003). While non-response bias is the great unknown of survey research, recent research indicates that it may be less problematic than is commonly believed (Curtin, Presser, & Singer, 2000; Keeter, Miller, Kohut, Groves, & Presser, 2000).

⁷ It is important to note that these figures are point estimates of an unknown population parameter, and our estimate falls within a margin of error for a survey of this size with limited variance (.06/.94) on the parameter of interest. Given the variance and sample size, the margin of error would be approximately $\pm 2.4\%$. Within this context, the measured rates of participation on the stem cell debate are consistent with past estimates of issue specific participation and general levels of participation. For example, in the 1980s, the General Social Survey asked respondents if they had written a letter to a newspaper or magazine on behalf of an organization, and roughly 16% of respondents said they had. According to a Roper poll from the 1980s, 12% reported writing a letter to the editor on the issue of the environment. The National Election Study reports that since the 1990s, 7–11% of respondents report contributing money during an election to support a campaign, and between 17% and 34% of respondents report trying to influence how another person voted. In all, our participation estimates involve error attributable to sampling, recall, social desirability, and interest in the topic. Future research should further explore improved measures for policy-oriented participation outside of an election context. One possibility is to move away from national samples and to local or community level studies.

⁸ Although, like many indices of participation, the reliability of this measure is less than ideal, the low reliability is explainable by the dichotomous nature of the individual items, and by the fact that each of these items involves time and effort, making these particular forms of participation alternative conditions. In other words, most citizens will choose either to contact an elected official, write a letter to the editor, try to persuade someone to support or oppose an issue, or donate money, but very few will choose to do all three. Thus, we are unlikely to find high correlations among these items.

To account for willingness to participate in a deliberative forum, we asked respondents if they were invited to attend a local community meeting about stem cell research and therapeutic cloning, how likely would they be to attend ($M = 4.1$, $SD = 3.0$), how likely would they be to speak up at the meeting ($M = 4.2$, $SD = 3.2$), and how likely would they be to express an opinion on stem cell research and cloning that was different from those of others at the meeting ($M = 4.7$, $SD = 3.4$). Respondents rated each item on a ten-point scale where 1 indicates “not at all likely,” and 10 indicates “very likely.”

Participation in deliberative forums should ideally be measured retrospectively, in other words as actual self-reported behavior. In this case, we instead rely on a hypothetical measure for several reasons. As outlined in the literature review, given the relative absence of such forums in the U.S., our measure in this case taps “what could be” in terms of alternative forms of citizen participation specific to the stem cell and cloning controversy. Moreover, as McLeod et al. (1999) suggest in using a similar “willingness to participate in a forum” measure, there is often a high correlation between an individual’s intention to perform a behavior and their actual behavior (Fishbein & Ajzen, 1975).

Independent Variables

We model participation as a function primarily of several specific independent variables including forms of church-based recruitment, issue importance, and attention to newspaper coverage. For church-based recruitment, we asked respondents if in the past 2 years they had (a) received materials through church about the issue of stem cell research or cloning (9% of sample) and (b) were encouraged by a church leader, pastor, or minister to support or oppose research (7% of sample). These separate indicators were combined into a single measure of church recruitment ($M = .16$, $SD = .14$, $r = .37$). The measure of church-based recruitment can be compared to a measure of church attendance that should account for the “unintentional” influences on participation through development of social networks and organizational and communication skills.⁹ Church attendance was measured on a five-point scale with 1 indicating the respondent never attends church, 2 indicated a few times a year, 3 once or twice a month, 4 every week, and 5 more than once a week.

To gauge the impact of issue engagement, we included a measure of respondents’ deeply held beliefs by folding a 10-point scale asking respondents to evaluate the moral acceptability of embryonic stem cell research. The result is a 5-point “opinion intensity” scale with 5 indicating respondents who believe either that embryonic stem cell research is strongly morally unacceptable or strongly morally acceptable, and 0 indicating those respondents who were most ambivalent about the issue. The measure is similar to the folded over abortion measure used by Verba et al. (1995) in their chapter on issue engagements. Finally, as a measure of attentiveness to newspaper coverage of the issue, we asked respondents on a 10-point scale to rate their level of attention to newspaper coverage of the debate over stem cell research and cloning. While some researchers might view news attentiveness itself as a form of participation, as previously described, in this paper we consider it as a mechanism that mediates socio-economic characteristics, providing citizens with the information necessary to participate in the broader policy debate, and therefore an influence on participation outcomes.

⁹ Verba et al. (1995) measure this in terms of actual skills—writing a letter, attending, planning or chairing a meeting, or given a presentation or speech. While this measure is not as direct as we would like, it does provide a rough indicator of church-based activity, if not church based skills.

Control Variables

For the purposes of this analysis, we measure age in years at the respondents last birthday ($M = 46$, $SD = 16$).¹⁰ Education is measured on a 5-point scale with 1 indicating less than high school, 2 high school, 3 some college, 4 a college degree, and 5 a graduate degree ($M = 3.2$, $SD = 1.2$). Sex is coded “1” if the respondent is male, “0” otherwise. Race may also play an important role in participation in science controversies. Race is coded 1 for white respondents and zero otherwise.

In addition to demographic considerations, we also include more general orientations toward politics as controls. We code partisanship -1 for Democrats, 0 for Independents and nonpartisans, and 1 for Republicans. Ideology may also be important, particularly on social issues. We measured respondent’s ideology on social issues on a 7-point scale from very liberal to very conservative ($M = 3.9$, $SD = 1.6$).

Results

We begin by considering individual acts of participation including writing letters, contacting public officials, contributing money, and persuading someone to support or oppose embryonic stem cell research or therapeutic cloning. As previously noted, since each of these acts of participation is measured as a dichotomous variable and since each of these acts is relatively rare, we use rare events logistic regression to estimate the results. As King and Zeng (2001a, b, 2003) have demonstrated, uncorrected logit models will consistently underestimate event probabilities. The results presented in Table 1 are based on the King and Zeng rare events logit procedure using STATA software (relogit) and correct for the rare nature of these individual acts of participation.

As can be seen in Table 1, our ability to predict individual acts of traditional forms of participation is fairly limited. None of the standard demographic variables are significant. General orientations including partisan affiliation and social ideology are likewise

Table 1 Rare events logistic regressions predicting forms of traditional participation specific to the embryonic stem cell and therapeutic cloning debate

	Write Letter	Contact Official	Contribute Money	Persuade Someone
<i>Demographics</i>				
Education	-.17 (.22)	.33 (.29)	.28 (.19)	.29 (.23)
Sex (Male)	.17 (.45)	-.13 (.45)	.71 (.44)	.33 (.43)
Race (White)	.97 (.73)	.72 (.70)	.05 (.50)	.23 (.60)
Age	-.01 (.02)	-.01 (.02)	-.02 (.02)	-.02 (.02)
<i>Political Orientations</i>				
Partisan affil. (Rep-Ind-Dem)	.28 (.28)	-.17 (.32)	.15 (.30)	.29 (.31)
Social Ideology (Lib-Con)	-.11 (.14)	-.11 (.18)	.22 (.18)	.19 (.16)
<i>Church-based Influences</i>				
Frequency of Attendance	.02 (.17)	-.14 (.17)	-.32 (.18)***	-.02 (.17)
Church Recruitment Index	.53 (.46)	.84 (.50)***	1.39 (.34)**	1.36 (.31)**
<i>Media and Issue Engagement</i>				
Attention to News Coverage	.13 (.09)	.06 (.08)	.05 (.06)	.08 (.07)
Opinion Intensity	.06 (.14)	.37 (.22)***	.18 (.15)	.22 (.16)
Constant	-3.0 (1.2)*	-5.2 (1.5)**	-4.1 (1.4)**	-5.4 (1.4)**

Cell entries are coefficients from rare events logistic regression. Standard errors in parentheses. *** $P < .10$; ** $P < .01$; * $P < .05$

unimportant as explanations of political participation.¹⁰ Church attendance approaches statistical significance, but only in one of four models (contribute money), and even here the effect is negative indicating that greater attendance is associated with a decreased likelihood that the respondent would contribute money. Church recruitment, on the other hand, is consistently important (supporting H1). In fact, church-based recruitment is *the only consistent predictor of individual acts of traditional participation* exerting a statistically significant impact in two of the models, and a marginally significant influence in a third. Neither news attentiveness nor opinion intensity was consistently related to these individual acts of participation (thus failing to support H2 and H3). In fact, opinion intensity only approached statistical significance in one of the four models (contacting a public official), while news attentiveness was insignificant in all four models.

In Tables 2–4, using OLS regression we predict scores on a combined index of the traditional participation activities, as well as dimensions of citizen willingness to participate in a local meeting and deliberative forum on the topic of stem cell research and cloning. The table presents unstandardized regression coefficients. In terms of predicting scores on the combined index of traditional forms of participation, the interpretation that emerges is very similar to the results presented in Table 1: Public participation is driven almost entirely by church recruitment efforts (supporting H1) and opinion intensity (supporting H2). News attentiveness also approaches significance at the .10 level (lending partial support to H3).

Finally, we consider a citizen’s willingness to attend and participate in a local community meeting on the issue of stem cell research and cloning. The results of the OLS regressions are presented in Tables 3 and 4. The findings for this deliberative context are more reflective of traditional understandings of participation, specifically a hierarchical model where the most likely to participate are the already resource advantaged and politically motivated. That is, willingness to attend and to actively participate in a local community meeting reflects not only the influences of church recruitment, opinion intensity, and news attentiveness, but also demographic differences, and general political

Table 2 OLS regression predicting index of the four traditional participation activities

	Model 1 Demographics and political orientations	Model 2 Church-based influences	Model 3 News media	Model 4 Issue engagement
Education	.05 (.03)***	.06 (.03)*	.05 (.03)***	.04 (.03)
Sex (Male)	.10 (.07)	.06 (.06)	.07 (.06)	.07 (.06)
Race (White)	.10 (.08)	.12 (.08)	.12 (.08)	.11 (.08)
Age	-.01 (.01)	-.01 (.01)	-.01 (.01)	-.01 (.01)
Party Affil. (Rep-Ind-Dem)	.03 (.05)	.03 (.04)	.03 (.04)	.11 (.08)
Social Ideology (Lib-Con)	.02 (.02)	.01 (.02)	.01 (.02)	.01 (.02)
Church Attendance		.03 (.20)	-.03 (.03)	-.03 (.03)
Church Recruitment Index		.43 (.07)**	.41 (.07)**	.40 (.07)**
Attention to News Coverage			.02 (.01)*	.02 (.01)***
Opinion Intensity				.04 (.02)*
Model <i>F</i> statistic	1.525	5.787**	5.695**	5.542**
Model <i>R</i> ² (%)	2.5	11.5	12.6	13.5
Adjusted Model <i>R</i> ² (%)	0.9	9.5	10.3	11.0

Cell entries are unstandardized regression coefficients. Standard errors in parentheses: ****P* = .1; ***P* < .01; **P* < .05

¹⁰ There may be important differences among evangelical Protestants and mainline denominations, which we are unable to leverage in the current data.

Table 3 OLS regression predicting willingness to attend a local deliberative forum on stem cell and cloning debate

	Model 1 Demographics and political orientations	Model 2 Church-based influences	Model 3 News media	Model 4 Issue engagement
Education	.50 (.13)**	.53 (.13)**	.36(.13)**	.33 (.13)**
Sex (Male)	-.07 (.31)	-.08 (.31)	-.02 (.30)	-.01 (.30)
Race (White)	.80 (.39)*	.80 (.38)*	.78 (.37)*	.73 (.37)*
Age	-.04 (.01)**	-.04 (.01)**	-.05 (.01)**	-.05 (.01)**
Party Affil. (Rep-Ind-Dem)	-.07 (.21)	-.05 (.21)	-.10 (.20)	-.11 (.20)
Social Ideology (Lib-Con)	-.11 (.10)	-.18 (.10)***	-.19 (.10)***	-.17 (.10)***
Church Attendance		.24 (.02)*	.26 (.12)**	.27 (.12)*
Church Recruitment Index		.88 (.34)**	.71 (.33)**	.69 (.33)*
Attention to News Coverage			.22 (.04)**	.21 (.04)**
Opinion Intensity				.17 (.10)***
Model <i>F</i> statistic	5.953**	6.198**	8.822**	8.337**
Model <i>R</i> ² (%)	8.9	12.0	18.0	18.8
Adjusted Model <i>R</i> ² (%)	7.4	10.1	16.0	16.5

Cell entries are unstandardized regression coefficients. Standard errors in parentheses: *** $P = .1$; ** $P < .01$; * $P < .05$

orientations such as ideology and partisanship. First, with respect to demographics, we find that education and age are consistently related to likely participation.¹¹ In terms of general political orientations, we find that social conservatives and Republicans are less likely to report they would participate by speaking up or expressing a different view.

Table 4 OLS regression predicting willingness to speak up at a local deliberative forum about stem cell and cloning debate

	Model 1 Demographics and political orientations	Model 2 Church-based influences	Model 3 News media	Model 4 Issue engagement
Education	.51 (.14)**	.51 (.14)**	.38 (.14)**	.34 (.14)*
Sex (Male)	.26 (.33)	.24 (.33)	.28 (.33)	.30 (.32)
Race (White)	-.20 (.41)	-.17 (.41)	.19 (.40)	-.25 (.40)
Age	-.01 (.01)	-.01 (.01)	-.02 (.01)***	-.02 (.01)*
Party Affil. (Rep-Ind-Dem)	-.48 (.23)*	-.46 (.22)**	-.50 (.22)*	-.51 (.22)*
Social ideology (Lib-Con)	-.19 (.11)***	-.26 (.13)**	-.27 (.11)**	-.25 (.11)*
Church attendance		.20 (.13)	.22 (.13)***	.23 (.13)***
Church recruitment index		.89 (.37)*	.74 (.36)*	.71 (.36)*
Attention to news coverage			.19 (.05)*	.18 (.05)**
Opinion intensity				.24 (.10)*
Model <i>F</i> statistic	4.441**	4.651**	6.282**	6.286**
Model <i>R</i> ² (%)	6.9	9.4	13.6	14.9
Adjusted Model <i>R</i> ² (%)	5.3	7.4	11.4	12.6

Cell entries are unstandardized regression coefficients. Standard errors in parentheses: *** $P = .1$; ** $P < .01$; * $P < .05$

¹¹ We also tested models using age squared to look at nonlinear effects. Of the models included in the paper only two had significant findings—the likelihood of speaking up at a public meeting and expressing a different view. For speaking up at a meeting, age was significant and positive, while age squared was significant and negative ($P < .01$). For expressing a different view, age was not significant and age squared was only significant at $P < .10$. A full set of these results can be obtained from the authors.

When it comes to church-based influences, we find some evidence that church attendance matters: Respondents who regularly attend church are also more likely to say they would attend a local meeting and to indicate that they would express a different view at the meeting. The influence for church attendance likely reflects broader social integration and contacts, meaning that church-goers are more likely to turn out to community events generally. While the findings are not as strong as in earlier analyses, above and beyond church attendance, we also find evidence for the importance of church recruitment (supporting H1) since respondents who report receiving church materials or being encouraged to participate by church leaders are more likely to indicate that they would attend a local deliberative forum, speak up, and express a different view. Attentiveness to news coverage is consistently important across each of the models, suggesting an important articulation function for news use (supporting H3). Opinion intensity is significant at the .05 level in two of three models (speaking up and expressing a different view) and approaches significance in the third model (attending meetings) (supporting H2).

Discussion

Perhaps no question has loomed larger in the study of political behavior than the question of who participates in the political process. With only a few exceptions, however, we continue to have a limited understanding of who participates within specific issue contexts, particularly on emerging issues that are at once highly technical and morally charged. Prior research has tended to focus on case studies, citizen juries, and deliberative forums as opposed to survey-based research of randomly selected, representative samples of citizens. In this paper, we address this gap by examining public participation in the contemporary controversy over biomedical research. Consistent with findings of the Civic Volunteerism Model specific to issue engagements, we found little support for traditional models emphasizing socio-economic influences, as demographic variables such as education, and social orientations such as ideology and partisanship were non-significant. Instead, our findings highlight the importance of church-based recruitment, opinion intensity, and news attentiveness in activating an “issue public” on the topic, a public that as we note in the conclusion section, reflects a fairly narrow and one-sided view of the debate. Given the many calls for developing new mechanisms for citizen participation in biomedical controversies and science policy, we also explored citizen willingness to participate in a local deliberative forum. In this case, our results conform partially to resource-based models of participation, but also underscore the additional influences of church recruitment and news attentiveness, while highlighting some of the limitations of these forums if employed in the future.

Conclusion

We know from prior research that religious institutions can play an important role in political activism and participation. The current research adds to this work by incorporating the policy context of emerging biomedical controversies into our understanding of church-based recruitment. What we discover is that not surprisingly, citizen activism on the stem cell debate is very low, but more importantly, according to our data, this activism derives almost exclusively from the small proportion of the public (less than 10%) who are

receiving direct church-based requests to participate in the controversy. This finding tells us as much about the mechanisms that might drive policy activism as it does about the power dynamics surrounding the contemporary debate over stem cell research. Specifically, our data indicate that at the time that this survey was taken, in the fall of 2003, the “public” voice that spoke loudest and perhaps most meaningfully on medical biotechnology was a very small and homogenous minority voice that had been spurred into action by religious institutions.

In this area, there are two limitations to mention about our data. First, it is unclear whether other groups such as research advocacy organizations might play an equivalent mobilizing role. Future research should tap respondents’ links to diseases such as diabetes, Alzheimer’s, and Parkinson’s. Not only might familial or personal connection to these diseases serve as powerful forms of issue engagement, but these personal ties might also offer important linkages to alternative recruitment influences. Large membership organizations and lobbying coalitions such as the Juvenile Diabetes Research Foundation and the Coalition for the Advancement of Medical Research have focused efforts on recruiting citizens to participate in the policy debate via postal mail, e-mail, door-to-door canvassing, phone contacts, and other means.

A second limitation relates to the timing of the survey. Our survey took place during the fall of 2003, at a downturn in the news attention cycle to the debate over stem cell research and cloning. Moreover, our survey tapped participation and opinion intensity before the spring 2004 death of President Ronald Reagan. The former president’s passing after a well documented struggle with Alzheimer’s might have provided an important symbolic reframing of the issue, especially for many Christian conservatives. The timing of our survey also does not take into account the related emphasis on the issue by the John Kerry campaign during the summer of 2004, and the high profile California initiative campaign to fund research. Future planned studies by the authors tapping the roots of public participation around the stem cell and cloning controversy specifically, and public participation around policy contexts more generally, will be able to take into greater account these limitations and questions.

Church Recruitment and Opinion Intensity

With the complexity and great number of issues facing citizens in American society, past research has reasoned that citizens are likely to be active primarily on issues that they feel strongly about, with these calculations a likely product of material self-interest, connection to social values and social identity, and issue salience (Krosnick, 1990; Verba et al., 1995). Indeed, our results indicate that opinion intensity, second to church recruitment, plays a significant and influential role in predicting traditional forms of participation specific to the stem cell debate. Church-based recruitment and issue engagement mechanisms may in fact act independently of traditional socio-economic resources, or general forms of political knowledge and interest. Recruitment may generate citizen activism by way of simple social pressure, social expectation, and by reducing the costs of participation via convenient opportunities to get involved. In other words, if people are asked to participate, and see others in their social setting getting involved, they are more likely to become active. Scheufele et al. (2003) find some support for this in their modeling of church recruitment within an electoral context, where church-based requests to participate had direct and unmediated effects on levels of participation, bypassing the possible intervening attitudinal and cognitive variables of political efficacy and knowledge. Our findings also resonate with Verb et al. (1995), who observed that the citizens most likely to participate in the abortion debate were neither

knowledgeable, nor resource rich. Instead, “representational distortion” is created by church recruitment and strong opinion intensity. Further research is merited on the influence of issue engagements in shaping decisions to participate in policy-debates, and the possible connection to the types of recruitment efforts found across social settings.

News Attention and Mobilizing Information

We also predicted that attention to newspaper coverage of the stem cell and cloning debate would be positively linked to traditional forms of participation and to willingness to participate in a deliberative forum. On the latter dependent variables, perhaps via the “articulation function” of newspaper reading, we find a significant relationship with the items tapping willingness to deliberate. However, on the traditional participation items, there was only a marginally significant influence. These null effects may reflect the lack of mobilizing information to be found in coverage of the stem and cloning debate as of the fall of 2003. Unlike traditional electoral coverage that often provides information about where to show up to vote, or whom to contact about an issue, Nisbet et al. (2003) find that in the case of the stem cell debate, when the issue emerged into widespread media prominence in 2001, drawing public attention to the issue for the first time, the debate was framed by the media predominantly as a political game among elites. Emphasis on scientific background and policy specifics was very much secondary. Again, however, we are limited by the time frame of our data collection. With the increased political activity surrounding the stem cell debate in 2004, and its connection to both the Presidential election and the referendum campaign in California, the amount of mobilizing information featured in news coverage, and consequently the mobilizing effects of news attention, may have increased. Future research by the authors will explore more fully this possibility.

Willingness to Participate in a Local Deliberative Forum

Finally, our study included a novel additional measure of participation that tapped citizens’ stated willingness to attend, speak up, and express an opposing view if their local community were to hold a public meeting specific to the issue of stem cell research and cloning. Part of the movement toward local deliberation about science policy is motivated by a belief that these deliberative forums might involve interaction with a more heterogeneous group of citizens who often hold opposing views. Yet our findings in the current study are consistent with past research that these forums may be somewhat limited in who is likely to attend, speak, and express a dissenting viewpoint. Admittedly, as a hypothetical measure, our dependent variables in this case do not measure actual behavior, but rather intention and likely motivation, but the findings do offer compelling conclusions. The citizens who indicate they are most likely to participate in these local forums are generally highly educated, white, and younger. Beyond these resource factors, those more willing to participate have also received requests to participate at church, hold more intense feelings about the issue, and are paying closer attention to news coverage. As mentioned previously, these types of deliberative forums specific to science policy have been widely used in Canada and across the European Union, and there is growing sentiment for their use in the U.S. context on emerging issues such as stem cell research, plant biotechnology, and nanotechnology, with many proponents suggesting these contexts offer an ideal setting to explore citizen opinion and preferences. Yet if sponsors are to achieve both scientific and

normative goals relative to a diversity and plurality of views expressed within these contexts, they will have to counter the strong structural biases in the types of citizens most likely to participate, relying on careful purposive sampling and incentives to generate participation.

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