Numeracy About Minority Populations: Americans' Estimations of *Local* Gay Population Size

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Previous research on demographic innumeracy has consistently shown that Americans have grossly inflated perceptions of minority population sizes at the national level. We present data from a survey indicating that Americans have significantly more reasonable estimations of homosexuals populations in their local communities. We argue that such findings serve as a needed corrective to the view that Americans are hopelessly ignorant about minority communities, speculate on some of the reasons for the disparate results at the national and local levels, and—after examining some of the correlates of the local estimates—discuss what these findings imply about the differing types and levels of "threat" the public views on the part of different minority groups.

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Introduction

It has long been known that many Americans display significant demographic innumeracy, especially when it comes to racial, ethnic, and cultural minorities. In 1990, for instance, Gallup and Newport reported that "[t]he average American thinks that America is 32% black, 21% Hispanic and 18% Jewish."[1] In a roughly contemporary paper that used data from the 1991 pilot National Election Study, Nadeau *et al.* concluded that a majority of Americans believed that blacks constitute at least 30 percent of the national citizenry,[2] that over a quarter of Americans believed Hispanics constitute at least 30 percent of the population, and that one in five Americans believed Jews make up at least 30 percent of the population.[3] Using the Gallup Poll Social Audit on Black/White Relations in the United States (which included a significant oversample of blacks), Sigelman and Niemi found that even African Americans tended to exaggerate the size of the black population in the U.S., with more than half estimating that blacks constituted at least 30 percent of the national population.[4] More recently, Gallup polls have found that on average Americans believe that roughly 22 percent of the national population is gay or lesbian.[5]

Such findings are troubling for two related reasons. First, because citizen opinions are either directly (in instances of direct democracy) or indirectly (in more typical instances of representative democracy) important determinants of public policy outcomes in the United States, citizens are unable to understand the implications of policy decisions involving racial, ethnic or cultural minorities when they are dramatically innumerate about membership in those groups. Second, because exaggerations of minority population size have long been

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1. George Gallup Jr. and Frank Newport, "Americans Ignorant of Basic Census Facts," *Gallup Poll Monthly* 294 (March 1990): 2–5. Census estimates in the early 1990s placed the actual percentages at 12.1 percent black, 9 percent Hispanic, and 2.4 percent Jewish. See *Statistical Abstract of the United States* (Washington, DC: Government Printing Office, 1991).

2. Richard Nadeau, Richard G. Niemi, and Jeffrey Levine, "Innumeracy About Minority Populations," *Public Opinion Quarterly* 57 (Autumn 1993): 335. These authors also found that one American in seven actually reported that blacks constituted a majority of the national population.

3. As Nadeau *et al.* note, taken at face value and "assuming no overlap among groups," these findings suggest that many Americans believe that "nearly three-quarters of the population is black, Hispanic, or Jewish." Nadeau *et al.*, "Innumeracy About Minority Populations," 343.

4. Lee Sigelman and Richard G. Niemi, "Innumeracy About Minority Populations: African Americans and Whites Compared," *Public Opinion Quarterly* 65 (Spring 2001): 402–10.

5. Frank Newport, "Homosexuality: In-Depth Analyses," www.gallup.com/poll/analysis/ia020911.asp. Median responses were somewhat lower: 15 percent for gay men, 20 percent for lesbians. The 22 percent figure for the mean is roughly twice the size of the most liberal estimate of gay population size (which is 10 percent, a figure popularized by gay advocacy groups under the motto "two in twenty") and 4–10 times larger than the numbers reported by the most authoritative surveys. For a review of some of these data, see Simon LeVay and Elizabeth Nonas, *City of Friends: A Portrait of the Gay and Lesbian Community in America* (Cambridge: MIT Press, 1995).

linked to negative attitudes toward those groups (and perceptions of risk in the majority population),[6] mass political attitudes towards those groups for which overestimations occur would be negatively skewed and would have subsequent public policy implications for civil rights and related policies.

However, it would be erroneous—or at least premature—to conclude that Americans are totally ignorant of their demographic surroundings. All of the studies cited above are based on surveys in which respondents were asked to estimate minority percentages in the *national* population.[7] As Nadeau and his colleagues warned, it would be important to have "surveys that include perceptions of minority concentrations in local areas as well as in the country as a whole." before drawing definitive conclusions regarding Americans' innumeracy about minority populations.[8] And, indeed, we hypothesize that citizens who grossly distort national numbers for minority group membership will be much more accurate when estimating their own local surroundings. Americans can gain knowledge about social demographics on a national scale only in a mediated fashion, particularly via news and entertainment media, opening themselves up to what media scholars have termed the "cultivation effect," that is, the media users' notion of reality about the world is driven by what is shown in that media.[9] In contrast, at the local level, citizens' interactions with others on a daily basis provide ongoing, first-hand "data" about their community's demographics that will enhance the validity of estimates of minority group numbers at the local level.

In this paper, we make a modest contribution toward a better understanding of public innumeracy regarding minorities by examining data from a survey that asked citizens to estimate the percentage of population *in their local communities* that is gay or lesbian. Our findings demonstrate that respondents, on average, provided what appear to be far more reasonable estimations at the local level than they do at the national level. Equally as interesting, multivariate analysis

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6. Nadeau *et al*., "Innumeracy About Minority Populations," 340–42, provide a nice summary of this literature.

7. The 1990 Gallup survey asked respondents "[w]hat percent of *the U.S. population* today would you say is black/Hispanic/Jewish?" See Gallup and Newport, "Americans Ignorant of Basic Census Facts," (emphasis added). Nadeau and his colleagues asked respondents "[i]n *the country as a whole*, what percentage of the *U.S. population* today would you say is black? What percent would you say is Jewish? What percent would you say is Hispanic?" See Nadeau *et al*., "Innumeracy About Minority Populations," (emphasis added). The 2002 Gallup survey asked "[j]ust your best guess, what percent of men/women *in the United States* today would you say are homosexual or gay/lesbian?" (personal communication with Gallup, December 2002; emphasis added).

8. Nadeau *et al*., "Innumeracy About Minority Populations", 346.

9. For a good overview of the literature on the impact of cultivation effects as well as that on the cognitive processes through which the cultivation process can occur, see L.J. Shrum, "The Cognitive Processes Underlying Cultivation Effects Are a Function of Whether the Judgments Are On-Line or Memory-Based," *Communications* 29 (2004): 327–44.

indicates that some of the attitudinal factors that have been shown to inflate respondents' estimates of the sizes of other minority groups have the opposite impact on estimations of the gay population size. In a concluding section, we speculate about what these findings mean when compared to other recent studies and what they imply about the nature of public prejudice toward gays and lesbians.

Estimating Sexual Minorities in the American Context

Scholars attempting to do empirical research on homosexuality and public attitudes toward it face several significant hurdles not faced by those who carry out research on other minority groups in the United States. We will briefly discuss two issues that are inter-related and that affect our study: defining homosexuality and obtaining objective estimations of the gay population size. While homosexual acts may be easy to identify, exactly who qualifies as a homosexual (or, conversely, as a heterosexual) is more complicated and there is little consensus in the literature about how to resolve this matter. Must a person have engaged in sexual acts with another person of the same gender to be considered gay? Are those who have had any homosexual experiences necessarily "gay"? If not, what amount and duration of homosexual experience is required? How should bisexuals be categorized? Using self-identification may avoid some of these pitfalls, but raises other important issues. Since there is considerable evidence that (unlike race, for instance) sexual orientation can evolve over the lifespan, the percentage of self-identified gays even within a set population may not be static, but could vary either upwards or downwards over time. Also, questions regarding homosexuality require respondents to divulge information regarding intimate aspects of their lives and involve behavior that is socially stigmatized (or even illegal) in many localities. All of these factors probably contribute to a reluctance to answer such questions even in an anonymous interview. Undeniably, "objective" definitions of traits such as race, ethnicity, and religion provide their own set of obstacles for social scientists, but attempts to create stable sexual orientation categories and to place individuals within them creates several additional layers of difficulty.[10]

Definitional issues such as these lead to a wide range of estimates in the academic literature on the size of the homosexual population in the United States,[11] and make agreement on an objective figure extremely difficult at the

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10. For a review of the attempts to define sexual orientation across the past century, see Randall L. Sell, "Defining and Measuring Sexual Orientation: A Review," *Archives of Sexual Behavior* 26 (1997): 643–58.

11. The upper boundary of these estimates is defined by earlier work by Alfred Kinsey and his colleagues who took a broad view and concluded that 37 percent of American males and 20 percent of

national level and virtually impossible at the local level.[12] The controversy surrounding this topic has made it difficult for the census to collect accurate data on gay population size. Items directly addressing sexual orientation are not included on Census questionnaires, although since 1990 there has been a category in the household-type section for same-sex "unmarried-partner households."[13] Many question the utility of this measure, however. It does not count gays who are neither living with a partner nor partnered at all,[14] and considerable skepticism remains that gay citizens are widely aware of the Census option and/or willing to provide information that might risk divulging their sexual orientation. Scholars who used the 1990 Census figures to explore factors related to the passage of local gay rights ordinances acknowledged that the crudity of the numbers allowed them only to "pinpoint communities with reputations for sizable gay communities" and determined that they were not a significant predictor of outcomes in the 251 cases they examined.[15] Other scholars have

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American females had had some post-pubescent homosexual experiences. See AC Kinsey, W.B. Pomeroy, and C.E. Martin, *Sexual Behavior in the Human Male* (Philadelphia: W.B. Saunders, 1948); and A.C. Kinsey, W.B. Pomeroy, C.E. Martin, and Ph.H. Gebhard, *Sexual Behavior in the Human Female* (Philadelphia: W.B. Saunders, 1953). The oft-cited "two in twenty" figure also comes from the Kinsey studies, which concluded that "13% of the male and 7% of the female population had more homosexual experience or psychological response for at least 3 years between the ages of 16 and 55, for a combined percentages of 10% of the total population" See P.H. Gebhard, "Memorandum to the National Gay Task Force on the Incidence of Homosexuals in the United States" (Institute for Sex Research Inc., Indiana University, 1977). More recent studies, based on self-identification of respondents have yielded much lower figures. Black *et al.*, for instance, survey available evidence and conclude that 4 percent of the population is gay (2.5 percent gay male, 1.5 percent lesbian). See Dan Black, Gary Gates, Seth Sanders, and Lowell Taylor, "Demographics of the Gay and Lesbian Population in the United States: Evidence from Available Systematic Data Sources" (Manuscript, Center for Policy Research, Maxwell School of Citizenship and Public Affairs, Syracuse University, October 1999). Laumann *et al.*reach similar conclusions, finding that 2.8 percent of men and 1.4 percent of women in America consider themselves to be gay (although over 7.5 percent of each gender experience relatively strong attraction to others of their sex). See Edward O. Laumann, John H. Gagnon, Robert T. Michael, and Stuart Michaels, *The Social Organization of Sexuality: Sexual Practices in the United States* (Chicago: University of Chicago Press, 2000). In surveys conducted in conjunction with national elections, Voter News Service and Zogby have found that self-identified gays and bisexuals have composed between 4 and 5 percent of electorates since the mid 1990s (see figures cited on the Human Rights Campaign's webpage: www.hrc.org/newsrelease/2002/021121zogby.asp). For a summary of other recent studies, see LeVay and Nonas, *City of Friends*.

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12. See, for example, Donald P. Haider-Markel and Kenneth J. Meier, "The Politics of Gay and Lesbian Rights: Expanding the Scope of Conflict," *The Journal of Politics* 58 (1996): 332–49.

13. The Census estimates that there were 1,653,000 same-sex couple households in the U.S. in 2000, approximately 1.6 percent of the total number of 104,705,000 households nationwide.

14. As one demographer for the Census put it, "[i]t's not a measure of sexual orientation. This is a measure of living arrangements." Quoted in Nahal Toosi, "Census Finds More Same-Sex Households," *Milwakee Journal Sentinel On-Line* (www.jsonline.com/news/metro/aug01/samesex22082101a.asp) August 21, 2001.

15. Kenneth J. Wald, James W. Button, and Barbara A. Rienzo, "The Politics of Gay Rights in American Communities: Explaining Antidiscrimination Ordinances and Policies," *American Journal of Political Science* 40 (1996): 1152–78.

suggested using the density of more readily identifiable gay organizations, services, and businesses as a surrogate for gay population density. While such measures have proven useful in studies examining adoption of gay rights laws *at the state level* and in small-*n* studies, where data collection is relatively easy, processing the data needed to develop comprehensive national figures *by community* would be extraordinarily difficult.[16]

We mention these inter-related definitional and measurement problems to establish the fact that definitive, incontrovertible, objective estimates of gay population size in the United States simply do not exist, not at the national level and certainly not at the local, community level. This is important because without objective measures, we are limited in our ability to assess the accuracy of citizen estimates. While the 22 percent national estimation cited above from the recent Gallup survey is likely high, we cannot say with authority whether it is inflated by a factor of two or a factor of 10. This is even more pertinent at the local level, where reliable objective measures are even more suspect. At most, all we will be able to say is whether citizens appear to make *similarly unreasonable* estimates of local minority populations or whether they come to more plausible conclusions regarding the size of the gay population in their own communities than they do when extrapolating to the nation as a whole. It is to that issue that we turn now.

Data and Methods

The data used in this paper come from a survey conducted by the Social Science Research Laboratory at the University of Mississippi. The telephone survey focused on issues related to the 1996 national election and was conducted between October 11 and November 3, 1996. The random, scientifically chosen sample covered the lower 48 states and the District of Columbia, and generated a total of 995 responses.[17]

The principal variable of interest here comes from a question at the end of the survey, which asked respondents to estimate the percentage of gay men and lesbian women living in their communities. Specifically, the survey script

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16. See Haider-Markel and Meier, "The Politics of Gay and Lesbian Rights"; and Wald, Button, and Rienzo, "The Politics of Gay Rights in American Communities."

17. Additional information about the SSRL survey may be found in L. Marvin Overby and Jay Barth, "Contact, Community Context, and Public Attitudes Toward Gay Men and Lesbians," *Polity* 34 (2002): 433–56; Jay Barth and L. Marvin Overby, "Are Gay Men and Lesbians in the South the New 'Threat'?: Regional Comparison of the Contact Theory," *Politics and Policy* 31 (2003): 452–70; and Charles E. Smith, Jr., Robert D. Brown, John M. Bruce, and L. Marvin Overby, "Partisan Preferences in Two Institutional Dimensions, Policy Balancing, and Voting for Congress in the 1996 National Elections," *American Journal of Political Science* 43 (1999):737–64.

enquired "What percentage of the residents in your local community would you say are gay or lesbian?"[18]

We will also examine whether variations in respondents' estimates follow theoretically relevant patterns, and look to previous studies to provide guidance on the demographic and attitudinal factors that systematically influence how the public views minority group size. Nadeau *et al.* hypothesized that political knowledge should influence estimations of minority population size and found that age, gender, and education—which they employ as surrogates for political knowledge—all had fairly consistent effects on the public's estimations of the size of the national black, Hispanic, and Jewish populations.[19] Across their sample, younger respondents, women, and less-well-educated respondents tended to provide significantly higher estimates of minority population size than did others.[20] Similarly, Nadeau and his colleagues found that respondents living in certain regions (southwestern states for Hispanics, southern states for black people, areas of high Jewish concentrations on the east coast for Jews) consistently tended to overestimate the size of relevant minority populations. These authors also found that white respondents who perceived certain racial or ethnic threats also significantly overestimated the numbers of blacks and Hispanics in the United States. In the recent Gallup Poll regarding sexual orientation, Newport concluded that "younger Americans give higher estimates of the number of men and women who are homosexual than do older Americans... [while] Republicans and conservatives estimate lower percentages than do Democrats and liberals."[21]

To examine the impact of such factors on estimates of local gay population size, we use a variety of measures taken from the SSRL survey. These measures include both demographic and attitudinal variables analogous to those found in the studies cited above. Our demographic variables include gender (coded 0 for women, 1 for men), race (coded 0 for white respondents, 1 for non-white respondents), age (which ranged from 18 to 88 years), education (coded as the last year of formal education, with high school graduates, e.g., coded 12), and income. We also include two regional variables, South (coded 1 for respondents from the 11 states of the old Confederacy, plus the border states of Kentucky,

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18. Unfortunately, since such issues were not the major focus of the survey, there were no questions asking respondents to estimate the national gay population size or the size of other minority groups in their communities.

19. Nadeau and his colleagues originally hypothesized that race, too, might correlate with minority population estimates, but found that it dropped to insignificance in their multivariate models. See Nadeau *et al.*, "Innumeracy About Minority Populations."

20. Sigelman and Niemi found roughly similar patterns in their disaggregated examinations of blacks and whites, although they discovered no significant educational impact among whites. See Sigelman and Niemi, "Innumeracy About Minority Populations."

21. Newport, "Homosexuality: In-Depth Analyses."

Maryland, and West Virginia; 0 for all others) and Midwest (coded 1 for respondents from Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; 0 for all others), to capture the more conservative social climates of those areas. Finally, since urban areas tend to have larger—or at least more open—gay populations, we include a dichotomous variable coded 1 for respondents residing within a metropolitan statistical area and 0 for those in non-metropolitan areas.

Drawing upon the literature summarized above, we also include a number of attitudinal variables in our multivariate models, including partisan identification (based on the conventional, self-reported, 7-point scale, ranging from strong Democrat (coded 1) to strong Republican (coded 7)),[22] interviewers' assessment of respondents' level of comprehension (coded from very high, 1, to very low, 5),[23] whether or not self-reported Christians identified themselves as having been "born again" (coded 1 for those who did, 0 for all others), and respondents' self-reported likelihood of voting as a measure of political efficacy. Finally, we also include responses to a question regarding whether homosexuality is determined by biological factors or is a lifestyle choice.[24] While there are several ways to interpret this variable, we believe it might relate to the level of threat felt by respondents toward the gay minority. Perceptions of threat have been shown to influence attitudes toward other minority groups and to inflate estimates of the size of these groups, and similar dynamics might be at work in assessments of local gay community size. If this is the case and such perceptions prejudice Americans' estimates of the number of gays and lesbians in their surroundings, those who view homosexuality as a lifestyle choice (and, by extension, heterosexuals as potential, "at-risk" "converts" to that lifestyle) might systematically provide exaggerated estimates compared to those who do not.

In the following section, we present detailed findings regarding estimates of local gay population sizes, explore issues related to non-responses, and then attempt to account for variations in the patterns found among these estimates.

Findings

Our initial findings are summarized in Figure 1, which plots respondents' estimates of the population of gays in their community.

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22. Since self-reported ideology correlates highly with partisanship ($r = 0.50$), tending to diminish the effects of both variables in multivariate models, we opted to include only partisanship here.

23. While admittedly a subjective and imperfect assessment, this is the only summary measure available in the data that estimates respondents' levels of political sophistication.

24. Specifically, respondents were asked to react to the following statement: "Homosexuality is primarily determined by a person's biological make-up and is not a lifestyle choice," with responses coded on a 4-point scale from strongly agree (1) to strongly disagree (4).

Figure 1

Perceptions of Local Gay Population Size
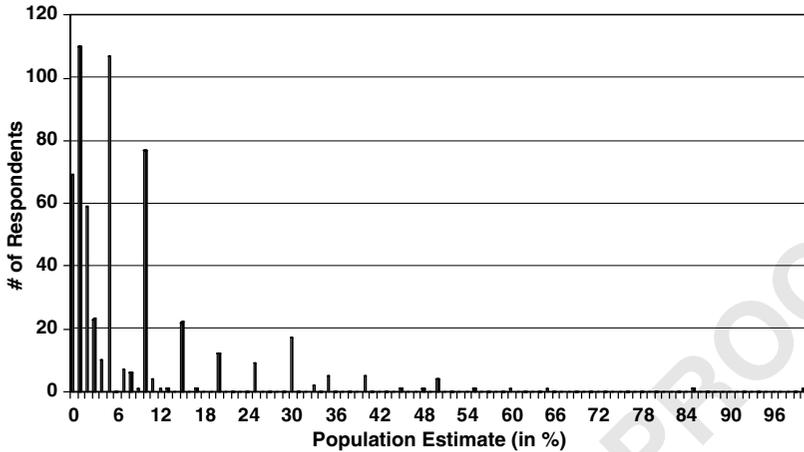
Two items deserve comment. First, although it is not immediately obvious in the figure, a good proportion of respondents either volunteered that they did not know enough to offer an estimate of local gay population size ($n = 422$, 42.5 percent) or simply refused to answer the question ($n = 11$, 1.1 percent). We will return to this matter shortly.[25]

Second, among those 56.4 percent of respondents ($n = 560$) who did provide an estimate, evaluations of local gay population size are considerably lower than reports of the national homosexual population. Compared with the Gallup mean estimate of 22 percent nationally,[26] our respondents' mean estimate was 7.68 percent for local gay populations. Since means can be distorted by small numbers of outliers, it is worth noting that our median response was 5 percent . The modal response of 1 percent was offered by 110 respondents and another 107 respondents offered an estimate of 5 percent. Compared to roughly 25 percent of the Gallup respondents who felt that over a quarter of all Americans are gay, fewer than 5 percent of our respondents thought they live in communities, where more than a quarter of their fellow citizens are gay.

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25. The 2002 Gallup survey also noted relatively high non-response rates on the questions related to size of the national gay population, with 16 percent of respondents offering "no opinion" on the number of gay men in the U.S. and 19 percent on the number of lesbians (personal communication with Gallup, December 2002). The higher non-response rates on our local questions may well reveal a greater public reluctance to discuss socially sensitive subjects when they are closer at hand.

26. Newport, "Homosexuality: In-Depth Analyses."

As noted above, the non-response rate of 43 percent is high and raises the possibility that the willingness or ability to hazard any sort of estimate might be inter-related with the size of that estimate.[27] To account for this possibility, we employ a sample selection estimation technique, which examines the factors that influence the proffering of any estimate in a first step (the "selection equation") and then examines the size of these estimates in a second step (the "outcome equation"), after correcting for any correlation with the first step. Results from both steps of the technique are summarized in Table 1.

In the selection equation, we include six variables suspected of influencing the willingness of respondents to offer estimates of minority population size, drawn in part from previous literature.[28] Of these, only age, race, and interviewers' assessment of comprehension are statistically significant, with the signs on the coefficients indicating that older respondents, black respondents, and less knowledgeable respondents were less likely than others to offer an approximation of the number of gays in their community. In large measure, these results make sense intuitively and/or are consonant with findings from previous studies. Since younger people have been socialized in a more permissive age when sexual minorities have been less stigmatized and compunctions regarding intimate personal matters less pronounced, they seem more willing to discuss matters related to sexual orientation.[29] The results regarding the effects of respondent comprehension are very much consistent with previous findings that people who are attentive to politics tend also to be generally more knowledge-able across a range of issues.[30] While it is not immediately clear why black respondents would be significantly less likely to hazard an estimate of gay population size (49 percent compared to 42 percent of whites), previous work has shown similar gaps even in the estimates of the size of the African—American population.[31]

Among those respondents who did hazard estimates of the size of the local gay population, are there predictable patterns to these responses? We address this question in the outcome equation, which assesses the impacts of 13 independent variables in a regression model. A quick perusal of the right-hand column in

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27. It is worth noting, however, that even with the large percentage of "don't knows", our sample size remains larger than those employed by Nadeau *et al*. in their study of innumeracy regarding African Americans, Hispanics, and Jews. See Nadeau *et al*., "Innumeracy About Minority Populations."

28. Especially, Sigelman and Niemi, "Innumeracy About Minority Populations."

29. Nadeau *et al*. report "young people somewhat less likely" to offer "don't know" responses when asked to estimate the size of the black, Hispanic, and Jewish populations nationwide. Although gender is not significant in our model, its negative sign is consistent with Nadeau *et al*'s finding that "[w]omen were somewhat more likely to give a 'don't know' response." See Nadeau *et al*., "Innumeracy About Minority Populations," 336.

30. See, for example, Robert C. Luskin, "Explaining Political Sophistication," *Political Behavior* 12 (1990): 331-61.

31. See Siegelman and Niemi, "Innumeracy About Minority Populations," 89.

Table 1

Sample Selection Models of Estimates of Local Gay Population Size

Variable	Selection Equation (willingness to estimate)	Outcome Equation (estimate)
Gender (women = 0, men = 1)	−0.08 (0.08)	−2.93*** (0.97)
Age (range = 18–88 years)	−0.02*** (0.00)	−0.08** (0.04)
Race (white = 0, black = 1)	−0.28** (0.11)	−0.51 (1.78)
Urban (non-MSA = 0, MSA = 1)	−0.09 (0.10)	3.79*** (1.24)
Likely Voter (higher scores = less likely voter)	−0.02 (0.05)	0.08 (0.56)
Respondent Comprehension (higher score = less comprehension)	−0.20*** (0.04)	0.44 (0.60)
Education (years of formal education)		0.52** (0.25)
South (non-South = 0, South = 1)		0.92 (1.20)
Midwest (non-Midwest = 0, Midwest = 1)		−0.28 (1.41)
Income		−0.76** (0.31)
Partisanship (strong Democrat = 1, strong Republican = 7)		−0.38* (0.23)
Fundamentalist Christian ("born again" = 1, other = 0)		−0.84 (1.39)
Homosexual Choice (biological determinant = 1, lifestyle choice = 4)		−1.50** (0.66)
Constant	1.74	10.19
N	806	
X^2	38.5***	
Test of Independent Equations	0.11	

The selection equation estimates effects of relevant independent variables on respondents' willingness to offer an estimate of gay population size in their communities. The outcome equation estimates effects of independent variables on the size of those gay population estimates, correcting for correlation in the error terms between the two models. Robust standard errors are reported in parentheses.
*$P \leqslant 0.10$; **$P \leqslant 0.05$; ***$P \leqslant 0.01$.

Table 1 indicates that several demographic factors have a significant impact on estimations of the size of the local homosexual population. Women give significantly higher estimates than do similarly situated men, younger respondents provide higher estimates than do older respondents, those from metropolitan settings furnish larger estimates than do those from non-metropolitan areas as do better-educated respondents, while those from wealthier households provided substantially lower estimates. These results are largely consonant with existing literature and our own intuition. Previous studies, for instance, have shown that women are more likely than men, and younger people more likely than their elders, to have contact with people who are open about their gay sexual orientation.[32] It is reasonable to suspect that people who have more contact with gays will, on average, provide higher estimates of the gay population size than do those who have less contact. While the 2002 Gallup survey on national gay population size reported no differential between men and women, it did show that "younger Americans give higher estimates of the number of men and women that are homosexual than do older Americans."[33] Although other studies have reported neither significantly greater contact with homosexuals among city dwellers[34] nor higher estimates on their part of the national gay population,[35] it is reasonable to expect that—compared to more rural residents—those who reside in metropolitan areas do, *in fact*, live in communities with larger gay populations (or at least larger openly gay populations).[36] Similarly,

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32. See Gregory M. Herek and Eric K. Glunt, "Interpersonal Contact and Heterosexuals' Attitudes Toward Gay Men: Results from a National Survey," *Journal of Sex Research* 30 (August 1993): 239–44; and Gregory M. Herek and John P. Capitano, "Some of My Best Friends': Intergroup Contact, Concealment Stigma, and Heterosexuals' Attitudes Toward Gay Men and Lesbians," *Personality and Social Psychology Bulletin* 22 (1996): 412–24.

33. Newport, "Homosexuality: In-Depth Analyses." Numerous studies have also shown that female survey respondents and younger respondents also generally display more acceptance of homosexuals than do males and older respondents, which might also lead to higher estimates. See Herek and Glunt, "Interpersonal Contact and Heterosexuals' Attitudes Toward Gay Men"; and Herek and Capitano, "Some of My Best Friends'." Kerns and Fine, however, have argued that in terms of women the effect is "more strongly related to gender roles than to gender" (297) and found that the gender differential drops to insignificance when they included a "traditional attitudes toward gender roles variable" in their equations. See John G. Kerns and Mark A. Fine, "The Relation Between Gender and Negative Attitudes Toward Gay Men and Lesbians: Do Gender Role Attitudes Mediate This Relationship," *Sex Roles* 31 (September 1994): 297–307. Although our data set does not include a measure of attitudes toward gender roles nearly as comprehensive as that employed by Kerns and Fine (who used Kurdek's 62-item Traditional Attitudes Toward Men, Women, and the Equality Between Men and Women Scale), we re-estimated our models after adding feeling thermometer variables that tapped respondents' affective reactions to "the women's movement" and "feminists". Neither variable materially altered the size, direction, or significance of the gender variable, nor the overall predictive power of the model.

34. Herek and Glunt, "Interpersonal Contact and Heterosexuals' Attitudes Toward Gay Men."

35. Newport, "Homosexuality: In-Depth Analyses."

36. See Micaela di Leonardo and Roger Lancaster, "Gender, Sexuality, Political Economy," *New Politics* 6 (Summer 1996): 29–43. Data from the 2000 Census show that gay male couples (who may be more visible to the public than lesbian couples) tend to reside in urban areas.

the robust significance of the family income variable perhaps reflects the fact that respondents from wealthier families tend to hail from more affluent suburban environments, where gays are either less numerous or less open about their sexuality.

Turning to the attitudinal variables in the model, the results indicate that only partisanship and beliefs about the root causes of homosexuality are significantly correlated with estimates of local gay populations. As is the case with citizens' estimates of the size of the national gay population,[37] we find that self-identified Republicans tend to think there are smaller numbers of homosexuals in their local environments than do similarly situated Democrats.

The variable tapping perceptions of the roots of homosexuality (i.e., whether it has biological origins or is more a lifestyle choice) generates a significant coefficient and its negative sign indicates that respondents who are more disposed to see homosexuality as biologically determined provide higher estimates of local gay populations than do those who see gay behavior as a choice. This finding is consistent with the position of some morally conservative interest groups that claim both that "no one is born gay" and that the number of homosexuals in the population is much smaller than the percentages claimed by gay civil rights groups.[38] As we will discuss more fully below, it might also be related to differences in the types of threat perceived from the gay minority as opposed to other minority groups.

It is also worth noting that some of the variables do not rise to the level of statistical significance in the outcome model. Neither respondents' self-identified likelihood of voting nor their perceived levels of comprehension has a significant effect on their estimates of local gay population size. While both of these measures are rather blunt,[39] this suggests that neither political sophistication nor engagement impacts much on minority innumeracy at the local level. Similarly, region seems to have no appreciable effect, with the Southern dummy variable even generating a coefficient with an unexpected positive sign. Perhaps most surprisingly of all, the variable tapping self-identified born-again Christians has no significant effect, although it carries a sign that is consistent with that of our variables tapping partisanship and the root causes of homosexuality. As with political sophistication and engagement, the limited effect of this variable could be a result of the way in which it is measured. Not only is there no accompanying measure of religiosity to indicate if church-going behavior follows from this

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37. Newport, "Homosexuality: In-Depth Analyses."

38. See the numerous links listed on the Traditional Values Coalition website on homosexual "urban legends" (http://traditionalvalues.org/urban/).

Q2   39. For instance, only 17 percent of respondents were judged to be below average in their level of comprehension and fully percent reported they were either likely or very likely to vote.

religious conviction, but our measure does not permit us any easy way to distinguish religiously liberal "born agains" (in the Jimmy Carter tradition) from their conservative counterparts.

One other matter from Table 1 deserves discussion here and that is the relatively small amount of explained variance. When the outcome model is run separately, it generates an adjusted R^2 of only 0.08. Although the model includes an array of usually powerful demographic and attitudinal predictors, these variables do not do a very good job of explaining the variance observed in estimates of local gay population sizes. Indeed, compared to goodness-of-fit measures reported by Nadeau *et al.*,[40] our adjusted R^2 is only roughly a third of the size of the figure they report as perceptions of national black and Hispanic population sizes and approximately half of the size of that for national Jewish population size. Since estimates of the size of local gay populations seem on average to be far more credible than estimations of the national black, Hispanic, Jewish, and gay populations, it seems reasonable to interpret our lower adjusted R^2 as additional evidence that Americans have more accurate perceptions of their local demographics than they have of the national population. The fact that our extensive list of predictors explains relatively little of the variation in gay population estimates indicates that we can be confident that respondent attributes are not driving their estimates in nearly the way that appears to be the case with national estimates.

Discussion and Conclusions

In this paper, we have used data from a national survey to examine and assess the American public's perceptions of the size of gay populations in local communities. Two of our findings bear reiteration and elaboration here. First and most fundamentally, we find that—compared to their estimates of the size of various minority groups, including gays, in the national population—people appear to have much more accurate views of the size of the gay minority in their own communities. Whereas, Americans tend to think that something approaching one-quarter of the national population is gay, when asked about the makeup of their own community the average response is 7.68 percent and the median response is 5 percent. While, for the variety of reasons discussed above, the actual size of the homosexual population in the United States is difficult to gauge (or even define); citizens' judgments regarding the presence of gays in their local communities appear far more in line with available data than do their estimates of the size of the national gay population. This finding serves as a needed corrective to a literature that generally tends to emphasize the demographic

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40. Nadeau *et al.*, "Innumeracy About Minority Populations," 339.

innumeracy of ordinary citizens; at least when it comes to considerations of local gay populations, the American public seems to have a fairly reasonable mental picture of what their surroundings look like.

What could account for these vastly different estimates of national and local gay population sizes? The data we have, available to us, provide only limited leverage to address this question. We can say that, as in the case of national estimates of gay population, older people and those who identify with the Republican party tend to provide lower estimates of local gay populations; and that—as in the case of national estimates of black, Hispanic, and Jewish populations—women tend to provide higher estimates of local homosexual communities. However, these correlates appear to distort estimations of local minority group size far less than they do estimates of those populations nationally. It seems plausible that these differentials are rooted in the dissimilar ways people acquire knowledge about minorities at the local versus the national level. Locally, people have some first-hand exposure to the minority groups in their communities which helps to anchor their estimates, while what knowledge people have of minorities at the national level is largely "cultivated" via the media. Since there tends to be an "exceptionality bias" to media coverage (e.g., heterosexual marriage is not generally national news, but a gay union is), people may tend to exaggerate national estimates based upon disproportionate media coverage.[41]

While our data do not allow us to speak directly to public perceptions of the size of other minority groups in their local communities, we can certainly offer some speculation on that point. If citizens are reasonably accurate in their perceptions of a largely "closeted" gay population, it seems plausible that they would also be more accurate in assessing the size of more open and visible local minority groups, such as blacks, Hispanics, and Jews. Since we can only speculate on this larger point, however, we would reiterate Nadeau *et al.* call for additional research focused specifically on this matter.[42] To the extent that innumeracy regarding minority groups has been linked to negative attitudes toward those groups, a more nuanced understanding of public perceptions of minority groups at the local and national levels might provide insights into how best to address and counter-balance ongoing stereotypes.

Second, our data indicate an interesting and unusual dynamic regarding the impact of certain attitudinal variables on the assessment of gay population size. To appreciate this, it is worth recalling that a large body of previous work—from seminal studies by Allport and his colleagues in South Africa to more recent

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41. Unfortunately, we have no direct measure of media exposure in the data set to allow us to test this theory.

42. Nadeau *et al.*, "Innumeracy About Minority Populations," 346.

studies by Nadeau *et al.*[43]—has shown that overestimates of minority community size generally come from those who feel threatened by those groups; in the United States that means that self-identified conservatives and Republicans tend to see inflated numbers of black, Hispanic, and Jewish citizens. However, that is not the case with homosexuals. Indeed, our findings confirm previous findings at the national level that "Republicans . . . estimate lower percentages [of gays] than do Democrats."[44] This is particularly interesting when considered in context with our finding that those who feel that homosexuality is more of a lifestyle choice than a biologically determined trait also tend to provide lower estimates of local gay population size. *Ex ante,* based purely on previous research and on our own intuitions of the way in which perceived threats might manifest themselves in other attitudes, we would have expected just the opposite: that Republicans and those who view homosexuality to be something people choose would have revealed heightened feelings of threat through significantly higher perceptions of gay population size. After all, if homosexuality is a personal choice rather than a genetically driven trait that would imply that members of the heterosexual public could be "converted" to homosexuality by "predatory" gays . . . and, given previous research on minority threat, we would have expected that to trigger significantly higher (not lower) estimates of the group's presence in the population. While it is not entirely clear why these expectations are not borne out (and there is clearly a need for more focused future research on this matter), our findings are compatible with the oft-articulated position of many on the religious right that the real threat posed by homosexuality rests not in the large numbers of gays, but in the fact that a small number of people *who choose to be* "deviant" are demanding "preferential" legal status at the expense of heterosexuals and to the detriment of "traditional values."[45]

Our findings, then, run contrary to the "Allportian" view that prejudice constitutes a "generalized attitude"; rather they to support the view of Young-Bruehl, who has eloquently argued that homophobia has roots and manifestations that are quite different from those of racism, anti-Semitism, and ethnocentrism.[46] While fully unpacking the nature of those differences is clearly beyond the scope of this paper and will require considerably more research

43. Gordon W. Allport, *The Nature of Prejudice* (Reading, MA: Addison-Wesley, 1954); Thomas F. Pettigrew, Gordon W. Allport, and Eric O. Barnett, "Binocular Resolution and Perception of Race in South Africa," *British Journal of Psychology* 49 (1958): 265–78; and Nadeau *et al.*, "Innumeracy About Minority Populations."

44. Newport, "Homosexuality: In-Depth Analyses."

45. For an excellent example of this perspective, see the website of the Traditional Values Coalition (www.traditionalvalues.org/urban/three.php).

46. Elisabeth Young-Bruehl, *The Anatomy of Prejudice* (Cambridge: Cambridge University Press, 1996).

focused on public attitudes toward gays and lesbians, our findings should help point the way in that they underscore that the public's perceptions of gays—and especially any "threat" they may pose—may be quite unlike that of other minority groups.