

**CONTACT, COMMUNITY CONTEXT, AND PUBLIC ATTITUDES
TOWARD GAY MEN AND LESBIANS**

L. Marvin Overby
Department of Political Science
University of Mississippi

and

Jay Barth
Department of Politics
Hendrix College

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Abstract

Contact theory holds that interaction with members of minority groups makes members of the majority more tolerant. Unfortunately, in the case of homosexuals, previous research has been limited by significant conceptual and methodological problems. In this study, we attempt to alleviate these past problems by reconceptualizing the notion of contact to hypothesize that citizens who live in communities with larger gay populations will have significantly warmer affective attitudes toward gay men and lesbians. We test this hypothesis using data from a 1996 national survey and multivariate, censored-normal regression models. Our findings demonstrate that community context has a robust effect on citizen attitudes toward homosexuals, rivaling the impact of education and age. These results highlight the importance of public policies and group strategies aimed at encouraging openness regarding sexual orientation.

CONTACT, COMMUNITY CONTEXT, AND PUBLIC ATTITUDES TOWARD GAY MEN AND LESBIANS¹

In recent years, public policy decisions related to equal rights for homosexuals have been among the most hotly debated issues in the United States and other industrial democracies. Matters such as gays in the military, same-sex marriages, and adoption and benefit rights for gay couples have been the subjects of heated struggles at the national, state, and local levels. Because the political opinions of rank-and-file voters can be crucial in determining how such issues are resolved, it is important to determine the factors that retard or promote public support for gay/lesbian rights. Many gay rights advocates argue that expansion of civil rights for homosexuals would be easier to accomplish if more gay people were open about their sexual orientation (see, for example, Sullivan 1995; Signorile 1993; Vaid 1995). As more homosexuals come out of the closet, the argument goes, a greater number of heterosexuals will come to realize that they have friends and/or family members who are gay, develop a “more individuated and personalized” view of the gay community that reduces both fear and prejudice (Herek and Glunt 1993), and, consequently, be more inclined to extend greater civil rights protection to gays and lesbians.

The contact thesis, as it is known, is not only intuitive, but has been supported by at least two decades worth of empirical academic research in several disciplines—with gay men and lesbians seen more favorably by those who have contact with them. The virtually unanimous conclusion of these studies is that personal contact with homosexuals by heterosexuals is associated with more tolerant attitudes toward gay men and lesbians. Unfortunately, a variety of significant conceptual and methodological problems cast serious doubts over both the conclusions reached by these studies and their generalizability. In addition, any number of studies about the contact thesis as applied to other minority groups in the American context indicates that it is more likely that increased contact with members of groups against which there is prejudice actually *increases* tension about these groups in the majority group (on race, for instance, see Blalock 1956, 1957; on gender, see South, *et al.* 1982). The disconnect

between this long line of research and the more limited research that has been done on the contact thesis as applied to sexual minorities indicates that we should be wary of these findings.

In this paper, we attempt to place the contact thesis on firmer empirical ground. After critiquing existing empirical studies, we offer a modified conceptualization of contact that seeks to minimize the endogeneity pitfall that has bedeviled previous work. Then, employing data from a nationwide survey and a multivariate censored regression model, we show that our reconceptualized measure of contact is indeed significantly associated with warmer public attitudes toward homosexuals. In a concluding section, we discuss the implications our findings hold not only for academic research on this topic, but for larger questions of group strategy and public policy.

Previous Research on the Contact Hypothesis

On its face, the contact hypothesis is very simple: since one reason for the negative feelings that members of majority groups have toward minorities is an absence of interaction that breeds ignorance, increased contact with minorities should lead to increased levels of tolerance. In the case of gay men and lesbians, the logic underlying this thesis is that “[a]cquaintance with an individual suspected or known to be homosexual may dispel unwarranted stereotypes and opinions that may ... contribute to ... discomfort” (Gentry 1987, 204).

Over the past several decades, numerous studies in several disciplines have attempted to provide empirical support for this hypothesis, and at least a dozen have purported to demonstrate significant relationships between contact with and greater tolerance toward homosexuals. Unfortunately, a host of conceptual and methodological problems have limited the ability of researchers to draw conclusive causal inferences regarding the effect of contact on public attitudes toward homosexuals.

Conceptually, the largest problem with this literature has been its inattention to the conditions

thought to be necessary for contact with minority group members to have a positive effect on the attitudes of majority group members. Early studies of the contact hypothesis focused exclusively on racial minorities and yielded very encouraging results. For instance, Stouffer and his colleagues found that contact with African Americans contributed to greater support for desegregation among white members of the armed services (Stouffer, et al. 1949), while Deutch and Collins (1951) found more tolerant racial attitudes among white residents of integrated public housing facilities.

It soon became clear, however, that the impact of contact was not nearly as simple as it had appeared on first glance. Particularly, after the desegregation of American public schools failed to produce a significant reduction in racist attitudes among white students, social psychologists began to explore why contact seemed to have the expected ameliorative effects in some cases, but not in others. Eventually, research (much of it from experimental designs) established that a slew of conditions are necessary for contact to lead to tolerance. Citing over three decades worth of results from studies of racial attitudes, Devine (1995, 503-504) concludes that at least nine conditions are necessary for contact to have beneficial effects:

- ! interaction among participants who are of equal status both inside and outside of the contact situation (Sheriff, et al. 1954),
- ! cooperative, not competitive, interaction (Allport 1954; Cook 1978; Miller et al. 1985; Worchel 1986),
- ! support from institutional authority figures such as parent, teachers, etc. (Allport 1954),
- ! high levels of intimacy,
- ! interaction that produces positive outcomes (Blanchard et al. 1975; Worchel and Norvell 1980),

- ! interaction among participants of similar competence (Blanchard and Cook 1976),
- ! participation of non-stereotypical minorities,
- ! participation of individuals with shared beliefs and values, and
- ! contact with a variety of minority group members in various settings.²

Unfortunately, studies of heterosexual contact with homosexuals rarely control for any of these conditions and never control for all of them. Rather, such studies usually either mention the conditions only in passing as possible limitations on their findings (see, e.g., Herek and Glunt 1993, 243-244) or, more commonly, ignore them completely. The most common type of contact question, for instance, dichotomizes survey respondents on the basis of whether or not they have any family members, friends or acquaintances whom they know to be gay. Obviously, such questions cannot tap the factors of equality, cooperation, institutional support, type of outcome, level of competence, stereotypicality, similarities of beliefs, or variety of contact, and can draw only the bluntest conclusions about levels of intimacy. Even the most comprehensive of recent studies (Herek and Capitano 1996) attempts to control for only number and intimacy of contacts, leaving the other conditions unexamined.

By itself, this lack of attention to qualifying conditions would not necessarily be problematic. Indeed, one could assay the findings of contact studies related to homosexuals and conclude that homophobia is simply less virulent than racism and more easily ameliorated by contact of any sort. This would be premature, however. Due to a variety of methodological problems, it is impossible to determine whether the positive findings reported in previous studies are the result of a lower threshold for contact effectiveness in the case of homosexuals or are, merely, statistical artifacts generated by non-random samples and mis-specified models.

The most obvious methodological shortcoming in the previous research has been the reliance on

small, non-random samples in both survey and experimental designs. Most commonly, this has involved convenience samples of students attending the home institutions of the investigators conducting the research. This is problematic, of course, because college students tend to be wealthier, younger, better educated, and less ethnically and racially diverse than the national population, making it difficult to extrapolate to and draw inferences regarding the behavior of the general public. This problem is compounded by the fact that many studies do not even use random samples of the students at any given university, but tend to select only those with certain attributes (e.g., gender, class status, enrollment in certain classes), further decreasing sample sizes and further skewing sample demographics. Glassner and Owen (1976) and Gentry (1987), for instance, conclude that respondents who had some contact with gay acquaintances were more tolerant toward homosexuals generally, but their samples consisted of only 61 and 99 respondents, respectively, all undergraduate students. Similarly, D'Augelli and Rose (1990) conclude that "[i]ncreased knowledge [through acquaintances with] ... lesbians and gay men is associated with less negative views toward [homosexuals]," but they sampled only 218 respondents, all first-year, white undergraduates. Matchinsky and Iverson (1996), who also find that respondents with homosexual friends or family members demonstrate less homophobia, base their conclusions on a sample of only 108 heterosexual female undergraduates, all of whom were either students in an introductory psychology course or advanced students with at least 20 hours of psychology course credit. And Whitley (1990), whose comparatively large survey of 399 respondents also found a strong correlation between contact and greater tolerance for gays, sampled only students in introductory psychology classes.

Experimental studies in this area suffer from similar problems. While Pagtolun-an and Clair (1986) (who employed a Solomon four-group design experiment in which certain participants were exposed to a guest speaker who was gay and who answered questions regarding homosexuality) report that "interaction [with homosexuals] reduces homophobic behavior," the 71 participants in their study

were all undergraduate students enrolled in a deviant behavior class. Similarly, using a split-half design in which members of one group were questioned regarding their attitudes toward homosexuals prior to a three-hour session with two gay male and two lesbian guest speakers and members of another group questioned after such a “treatment”, Lance (1987) concludes that “exposure to and interaction with homosexuals will result in ... a general reduction in ... discomfort with homosexuals.” In this case, too, however, the 46 experimental subjects were students in two human sexuality classes.

While student-based survey and experimental studies do not necessarily yield results different from those of the general population, the biased nature of such samples renders them inherently suspect and makes drawing inferences regarding the larger population quite risky. This is especially true since we know that many of the defining demographic characteristics of students generally and sample student groups specifically are themselves associated with more tolerant attitudes toward homosexuals.

In response to skepticism regarding the generalizability of results drawn from student-based studies, increasingly over the past several years empirical studies exploring the bases of attitudes toward homosexuals have used large-n, random probability samples. Unfortunately, however, most of these suffer from a major shortcoming --- they do not include questions designed to tap the contact hypothesis (see, e.g., Selzer 1992; Nolan 1996; Wolpert and Wilcox 1996). In addition, several of these studies are further hampered by their focus on citizens in one particular city (e.g., Britton 1990; Gibson and Tedin 1988).

The only studies of which we are aware that utilize both large-n, random national samples and research designs specifically targeted toward testing the contact hypothesis have been undertaken by Herek and his colleagues (see Herek and Glunt 1993, Herek and Capitano 1996). Both studies utilize national telephone surveys and both find that respondents who reported personal contact with homosexuals expressed significantly more positive attitudes toward male homosexuals as a group as

measured by a five-item Attitudes Toward Gay Men (ATG) scale and/or a three-item Attitude Toward Lesbians (ATL) scale; indeed the authors find contact to be the best predictor among more than a dozen variables tested (Herek and Glunt 1993). However, as in surveys of students,³ there is a significant problem with the contact measure used in these studies. As the authors acknowledge, the questions measuring contact with homosexuals (e.g., Herek and Glunt [1993] ask “Have any of your female or male friends, relatives, or close acquaintances let you know that they were homosexual?”)⁴ beg the question of causality. As Herek and Glunt (1993, 243) put it

... some heterosexuals (i.e., those who are highly educated, politically liberal, younger and female) were more likely than others to report interpersonal contact. This pattern suggests that the relationship between contact experiences and attitudes is probably reciprocal. Not only does contact tend to foster greater acceptance of gay men generally but, in addition, heterosexuals with already positive attitudes ... are more likely than others to experience contact...[due to] selective disclosure: [Gays] probably are more likely to take the risk of voluntarily disclosing their sexual orientation to heterosexuals from whom they expect a positive response.⁵

This endogeneity problem is very serious. At best, it suggests that previous models are misspecified in a way that is likely to bias their findings substantially. If expectations of a positive response lead gays and lesbians to initiate contact with those predisposed toward tolerance, the contact variable may be correlated with omitted causes of respondents’ attitudes toward homosexuals, which are represented by the stochastic error term. This will cause the apparent effect of contact to be inflated and render it difficult to establish true levels of statistical significance. In the worst case, and as Herek and Glunt (1993) themselves fear, it risks reversing the true lines of causality, which could have serious social ramifications. After all, if tolerance begets contact rather than *vice versa*, public policies and group strategies that attempt to increase public acceptance by promoting greater interaction are bound to produce disappointing results.⁶

To reiterate, previous research on the effect of contact with homosexuals on attitudes toward homosexuals has produced intriguing but suspect results. They are intriguing because they have shown

contact to have a strong effect on attitudes, even in the absence of one or more of the conditions thought to be necessary for contact to be ameliorative. They are suspect because non-random samples and a problem with endogenous regressors call into question both the robustness and generalizability of these findings.

Contact and Context

Since the generalizability problem is easily addressed with a national survey using a probability sample, the main impediment to a more rigorous test of the homosexual contact hypothesis is the issue of endogenous regressors. How might the reciprocal causality problems associated with previous studies be disentangled, or at least mitigated? Intuitively, contact with gay men and lesbians may be conceptualized as a function of two factors: (1) a predisposition for tolerance toward and (2) the opportunity to interact with homosexuals. According to Herek and Glunt (1993, 242), a person's predisposition to have contact with gays is determined by higher levels of education, more liberal political convictions, youth, and being female, all of which are commonly asked demographic questions that can be easily controlled for in a multivariate model.

Capturing the effect of the second component --- opportunities for interaction (or what Kahneman, Slovic, and Tversky [1982] call the availability hypothesis) --- is simple in concept, but extremely difficult in practice. Since opportunity is inextricably linked to demographic environment, ideally, one would simply replicate similar studies done regarding race relations by determining what percentage of the population in a respondent's city or county of residence was gay and including that measure as an independent variable. Unfortunately, as Haider-Markel and Meier (1996, 336) note, "no such [population] measure exists" and efforts to find surrogates have so far proven disappointing (at least in terms of yielding a measure appropriate for a study of mass political attitudes).

Due to ongoing debates regarding exactly what it means to be gay and the controversial nature of the issue, direct questions related to sexual orientation are not included on census questionnaires or addressed in most national surveys. In 1990, the Census did include a category for same-sex “unmarried-partner households” and this measure has been used in a study examining factors influencing the adoption of local gay rights ordinances (see Wald, Button, and Rienzo 1996). At best, however, this is an extremely poor measure, even on its face. Since the Bureau of the Census defines “unmarried partner” vaguely as “an adult who is unrelated to the householder, but shares living quarters and has a close personal relationship with the householder,” it is not at all clear that the term should be construed to include only those involved in intimate, sexual relationships.⁷ If, however, in the case of same-sex “unmarried partners” the item is assumed to relate to homosexual relationships, its use is still problematic. Since the Census recorded only 81,343 males and 63,787 females in such relationships (i.e., 0.058 percent of the total U. S. population of 248,709,873), the measure certainly *and severely* underestimated the actual presence of homosexuals in the population.⁸ Even Wald, Button, and Rienzo acknowledge that it is likely only to “pinpoint communities with reputations for sizable gay communities” (p. 1159), and its extreme crudity makes it unsurprising that it does not emerge as a significant predictor of gay rights ordinances in the 251 communities they examine.

Another possible surrogate is the density of more readily identifiable gay organizations, services, and businesses. Such measures have proven to be significant predictors in studies concerning the adoption of gay rights laws where the level of analysis is the state (Haider-Markel and Meier 1996) and where comparatively small samples of communities make data collection relatively easy (Wald, Button, and Rienzo 1996). However, for a number of reasons, their utility is more suspect in studies of mass political attitudes. Most importantly there are many places --- especially small towns and rural areas --- where there undoubtedly are gay men and women, but no openly gay organizations, services, or

businesses. Even in areas where such businesses exist, gathering the data and constructing the variables necessary for a comprehensive national study would be a daunting task, if not an impossible one. As an example, when they turned their attention from the state level to examine the forces that affected county-level vote totals in two statewide, gay-rights referenda held in Colorado and Oregon, Haider-Markel and Meier (1996, 343) noted that they had to “eliminate many of [the] variables [e.g., numbers of gay bars, businesses, and newspapers] that cannot be measured at the county level.”⁹

While it may be impossible to find an objective measure of local homosexual population density, it may be possible to construct one using citizens’ subjective estimates of the size of the gay population in their communities. This measure would, however, need to overcome the wide-spread suspicion that Americans are grossly “innumerate” about the size of minority populations. The best evidence for this innumeracy proposition comes from Gallup and Newport (1990) and Nadeau, Niemi, and Levine (1993).¹⁰ Using Gallup poll data, Gallup and Newport (1990, 2) find that “[t]he average American thinks that America is 32% black, 21% Hispanic and 18% Jewish.” Similarly using data from the 1991 NES Pilot Study, Nadeau, Niemi, and Levine (1993, 335) conclude that “the degree to which America’s black, Hispanic, and Jewish populations are overestimated is great, perhaps even astonishing if taken at anything like face value.” In judging these estimates, it is important to bear in mind that these studies measure misperceptions about minority populations *at the national level*, not at the local level as we propose to do here.¹¹ Whether or not Americans are better informed about the size of minority populations in their local communities remains an open empirical question, although it seems reasonable to suspect that they are. Unlike national populations, which individuals can know about only in a mediated fashion, based upon such things as news coverage, local minority populations are seen first hand and, therefore, perceptions about them are likely to be more accurate. And, indeed, there is some indirect empirical support for this intuitive proposition. Nadeau, Niemi, and Levine (1993) found that the size of a minority population in a

respondent's county of residence was significantly and positively related to his/her estimate of that minority group's national size. This indicates that for at least some Americans, their innumeracy about national minority populations is based upon accurate local assessments that are then improperly generalized to the nation as a whole.

In fact, a respondent-provided subjective measure offers some advantages over an objective measure, even if the latter were available. Allowing respondents, in essence, to provide their own definition of "community" allows them to describe their social environment as they perceive it, referring to the "community" that is most relevant to their experience, rather than an arbitrarily imposed geographical category (e.g., county, MSA, state, etc.). Among other things, this avoids controversies regarding the most appropriate demographic unit of measure (for a recent example of this controversy, see Voss 1996, and Giles and Buckner 1996).

Moreover, in that the contact thesis examines a social psychological phenomenon, it is vital to take into account both the social context as well as the manner in which individuals mentally process the elements of the context that they are experiencing on a daily basis. One might go so far as to argue that measures of "contact" that are based purely on "objective" measures of minority group population, such as that contained in the Census, fail to operationalize social contact fully in that they do not take into account the cognitive/affective components of the dynamic. For this reason, individuals' (obviously subjective) perceptions of the gay/lesbian population of their communities may more fully capture the social psychological dynamic at work in the contact thesis.

While using subjective, respondent-provided estimates of gay population size is admittedly novel, it is not without precedent in the contact thesis literature. Although they did not poll the general public on the matter, Wald, Button, and Rienzo (1996, 1159) posed a similar question to selected political elites, asking local government office holders to estimate the number of gay political officials and candidates in

their areas. These estimates proved to be significant predictors of the presence of gay rights statutes. Similarly, Sigelman and Welch (1993) and Powers and Ellison (1995) in studies of bi-racial interaction asked respondents in national probability samples to estimate the racial compositions of such things as their childhood and current neighborhoods, the schools they attended, and their workplaces. Such measures often had considerable analytical leverage, leading Sigelman and Welch (1993, 788), for instance, to conclude that for the whites in their sample reported neighborhood racial composition was a better predictor of racial attitudes than was interracial friendship.

For respondent-provided estimates of local gay population sizes to yield valid inferences regarding the effects of contact, they must be reasonably accurate and unbiased. In the absence of better census data on this controversial topic, only “weak” tests of these assumptions are possible and we present them in the following section --- addressing the accuracy issue empirically by assaying the aggregate findings from our sample and the bias question by examining the correlates of local gay population size. Here we address the critical issue of bias only theoretically and intuitively. For them to be useful, we must assume that respondents’ estimates of local gay population size is an exogenous variable that is not significantly affected by antecedent attitudes toward homosexuals. This seems to be a reasonable assumption for several reasons. First, it seems highly unlikely that many people change their residences based on their attitudes toward gays and lesbians. As Sigelman and Welch (1993, 793) have argued in the racial context, there is little reason to believe that respondents with more positive views of a minority group will “choose their ... neighborhoods simply in order to stand against perceived national trends.” Second, there seems little *a priori* reason to suspect that those with positive affects toward homosexuals will perceive their communities to have larger gay populations; indeed, the opposite scenario --- i.e., homophobes exaggerating the “gay threat” --- seems equally, if not more, plausible.¹¹ At very least, it seems reasonable to conclude that a community context variable is less problematic than the interpersonal

contact measures used in previous studies and that this a wise avenue to explore.

Data and Methods

The data for this study come from a telephone survey conducted by the University of Mississippi's Social Science Research Laboratory between October 11 and November 3, 1996, as part of a larger study of the 1996 elections. The random, scientifically-chosen sample covered the lower 48 states and the District of Columbia. The dataset contains a total of 995 responses. The data necessary to replicate the analyses reported in this paper are available from the authors.

Following Wolpert and Wilcox (1996), our dependent variable is respondents' feeling thermometer rating of gay men and women.¹² Feeling thermometers are used to measure respondents' affective reactions to different individuals and groups.¹³ Ratings range from 0 (very cold response) to 100 (very warm response). The modal response was at the midpoint of 50, and only 46 respondents could not or would not provide any rating. Among those who provided a rating of gays and lesbians, the mean was 35.65 and the standard deviation was 29.13. Approximately half of the respondents rated homosexuals below the midpoint of 50, while only roughly 20 percent rated them over 50. Zero, the coldest score, was the second most common rating, but it was offered by only 24 percent of the overall sample and only 20 percent of the respondents used in our multivariate models.¹⁴

Since feeling thermometers are bounded by their 0 and 100 degree endpoints, we use a censored normal regression technique to construct our empirical models. Such a procedure is justified since ordinary least squares (OLS) regression assumes that dependent variables are unbounded and allowed to range infinitely, something that is clearly not the case with feeling thermometers. Censored normal regression takes account of the truncated nature of the data and compensates for the fact that extreme responses may be constrained by the limited scale that is employed.¹⁵

On the right hand side of our equation, we employ a variety of control variables culled from the literature on the contact hypothesis. We divide variables into two conceptual categories: attitudinal variables and demographic ones. We include four attitudinal measures in our model. First, as a general measure of ideology, we use respondents' self-reported ideology on a conventional seven point scale, ranging from very liberal (coded 1) to very conservative (coded 7).¹⁶ Second, we use respondents' feeling thermometer ratings of feminists as a surrogate for their attitudes regarding non-restrictive gender roles (Minnigerode 1976; Kern and Fine 1994). Third, following Herek and Glunt (1993; see also Herek and Capitanio 1996), we include respondents' self-reported likelihood of voting as a measure of political efficacy. Finally, in order to tap into public opinion regarding the source of homosexuality, we include responses to a question regarding whether homosexuality is determined by biological factors or is a lifestyle choice (Ernulf, Innala, and Whirham 1989; Whitley 1990). Specifically, respondents were asked to respond to the following statement: "Homosexuality is primarily determined by a person's biological make-up and is not a lifestyle choice." Responses were coded on a four point scale from strongly agree (1) to strongly disagree (4). Our expectations concerning these attitudinal variables are straightforward and intuitive. *Ceteris paribus*, we expect that respondents who are more liberal, feel more warmly toward feminists, have a greater sense of political efficacy, and who believe homosexuality is biologically determined rather than a lifestyle choice will see homosexuals as less threatening and, therefore, demonstrate a warmer affect toward gay men and lesbian women.

In addition to the attitudinal variables, we also include a battery of demographic variables in our model. First, since women have been found to be less homophobic than men, we include gender in our model, with women coded as 0 and men 1 (Logan 1996). Second, since they have themselves historically been the objects of discrimination, we expect that non-white respondents will demonstrate warmer affect toward homosexuals than whites. Here, we code non-white respondents 1 and white respondents 0.

Third, notwithstanding the expected positive affect among non-whites, previous research (e.g., Wolpert and Wilcox 1996) has shown that black males tend to have significantly more negative assessments of homosexuality than members of other demographic groups. To account for this, we create an interactive term by multiplying our gender and racial variables; the resulting variable codes non-white males as 1, all others as 0.

Fourth, to control for the anti-homosexual attitudes historically embedded in some religious groupings, we include two religion-based variables. The first is coded 1 for self-identified Catholics and 0 for all others, two-thirds of whom are self-identified Protestants (Wolpert and Wilcox 1996).¹⁷ The other is designed to tap into the especially strong opposition toward gay rights found among many fundamentalist Christians (Larsen, Cate, and Reed 1983). Those respondents who identified themselves as born-again Christians were coded 1, all others were coded 0.¹⁸

Fifth, expecting younger people to demonstrate more tolerant attitudes due to their socialization during a more permissive era (Kurdek 1988), we include year of birth in our model. Since the sample included only respondents eligible to vote in the November 1996 elections, the range of birth years was from 1908 (88 years old) to 1978 (18 years old). Sixth, higher levels of education are generally associated with the liberalizing influence of college and have been shown to predict more tolerant attitudes toward a variety of groups (for homosexuals, see, e.g., Pain and Disney 1995; Dejowski 1992). Here, education is coded as the last year of formal education completed (e.g., high school graduates are coded 12, junior college graduates 14, and college graduates 16). Seventh, following Herek and Capitano (1996) and because it seems reasonable to suspect that those in more traditional personal relationships might have colder affective attitudes toward homosexuals, we include a variable to control for respondents' marital status. Those who are married or widowed are coded 1, all others are coded 0.

Eighth, following Wolpert and Wilcox (1996), we also include two variables designed to capture

the more conservative social environments in the South and Midwest. For the dichotomous South variable, respondents in the 11 states of the old Confederacy (i.e., Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia) and three border states (Kentucky, Maryland, and West Virginia) are coded 1, all others 0. For the Midwest variable, respondents in Midwestern states (defined as Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin) are coded 1, all others 0. Also, urbanism is often associated with greater levels of social tolerance and several recent studies have found it a strong predictor of the passage of local gay rights legislation (Wald, Button, Rienzo 1996; Haider-Markel and Meier 1996). We include it in our models as a dichotomous variable, coded 1 for respondents residing within a metropolitan statistical area and 0 for those who do not.

Finally, and most importantly, we include our measure of community context. At the end of the survey, respondents were asked to estimate the percentage of gay men and lesbian women in their communities.¹⁹ While a good percentage of respondents (43%) declined to offer an estimate,²⁰ among those who did, the responses appear reasonable. The modal response is 1% (offered by 110 respondents), although 5% is very close ($n = 107$); the mean response is 7.68%. This mean figure falls between the 10 percent estimate popularized by some early researchers in this area (Kinsey, et al. 1948; Kinsey et al. 1953; Gebhard 1977) and used by many gay rights organizations (for a list of gay organizations and publications that use this 10 percent figure in their titles, see LeVay and Nonas 1995, 102), and the more modest figures (ranging from two to six percent) reported by most recent, poll-based surveys (for a brief review of this literature, see LeVay and Nonas 1995). While the 10 percent figure is probably inflated (e.g., by the inclusion of bisexuals), the lower figures are probably deflated (e.g., by a reluctance on the part of respondents either to discuss their intimate private lives or to admit to socially stigmatized behavior even in an anonymous interview). Overall, even if our respondents' estimates tend

toward the high end of the spectrum, collectively they appear to be reasonably accurate and far better than similar estimates of African-American, Hispanic, or Jewish populations.²¹ Summary descriptions of our dependent and independent variables are presented in Table 1.²²

[Table 1 about here]

As noted above, a strict test of the exogeneity of this variable is impossible with the current data. However, a weak test suggests that estimates of community context are not strongly influenced by antecedent attitudes toward gays and lesbians. Regressing estimates of local gay population density on the other independent variables delineated above indicates that none of the attitudinal variables that correlate highly with prejudice toward gays (e.g., ideology, affect toward feminism, belief about homosexual choice) is statistically related to perceptions of local gay population size. In fact, the model achieves on a very poor fit (adjusted $R^2 = .06$) and only gender emerges as statistically significant at the traditional .05 threshold, with female respondents reporting significantly larger estimates of gay population.²³ While this evidence cannot entirely exonerate the community context variable — and while we acknowledge that in the messy world of human interactions few relationships are wholly non-reciprocal — it does indicate that on balance and in the aggregate it is unlikely that pre-existing prejudices exercise much influence on respondents' perceptions of community demographics.²⁴

Findings

The results of our censored normal regression analysis are presented in Table 2. In the first column, we specify the model without our community context variable. As the pseudo- R^2 of .48 indicates, this specification fits the data fairly well, accounting for just under half of the variance observed in the

dependent variable.²⁵ Most of the attitudinal and demographic variables behave as expected. Those who believe homosexuality is a choice, those with more conservative ideologies, those who identify themselves as fundamentalist Christians, and those living in the South and Midwest are significantly colder toward gay men and lesbians than are others in the general public. On the other hand, younger respondents, those with more years of formal education, and those who have positive views of feminists display considerably warmer affect toward homosexuals. Interestingly, several variables that have generally proven to be significant in previous studies do not emerge as significant in this specification. Neither marital status, race, gender, Catholicism, urbanism, political efficacy, nor the variable for non-white males generates a significant coefficient. The insignificance of the gender variable is particularly noteworthy, since most studies have found a strong “gender difference in attitudes toward gay men” (Kerns and Fine 1994, 298; but see Hudson and Ricketts 1980, Irwin and Thompson 1977, and the meta-analyses reported in Kite 1984, and Kite and Whitley 1996). The null findings of the current research are probably driven by several factors, the most important of which may be the inclusion of a variable designed to tap attitudes regarding gender roles, which previous studies (see Kerns and Fine 1994, 305; see also Kite and Whitley 1996) have shown tend to wash out gender differences in attitudes toward homosexuals. Indeed, in analysis not reported, we excluded the variable tapping affect toward feminists from the model and the impact of the gender variable increased dramatically, achieving significance at the .05 statistical threshold.²⁶ Given urbanism’s usual association with greater levels of tolerance, its insignificance here is also interesting and may result from the dichotomous way in which the variable is coded.²⁷ Catholicism’s limited impact may result from cross-pressures many Catholics feel between church doctrine (which opposes homosexual behavior) and their own more liberal personal attitudes (see Nice 1988).²⁸

[Table 2 about here]

In the second column of Table 2, we present our more fully specified model, including the variable

for community context. As the pseudo-R² indicates, this model represents a somewhat better fit for the data, explaining some 52 percent of the variance observed in the dependent variable. This increase in the value of the pseudo-R² indicates that the community contact variable has significant predictive power that is independent of the other independent variables included in the model. Even in the presence of a host of other variables that have been shown to influence attitudes toward homosexuals, community context increases the predictive power of the model by four percent. All of the variables that were significant in the first specification remain significant in this model as well. As predicted, the coefficient generated by the community context variable is correctly signed and robustly significant ($p \leq .014$). Substantively, the size of the coefficient indicates that for every 1 percent increase in the percentage of gays in their community and holding all other factors constant, respondents reported a one-third of one degree increase in their feeling thermometer ratings of homosexuals. Over the range of the values of the community context variable (i.e., from 0 to 100), this would result in a 31 point increase in respondents' affective attitudes toward homosexuals. In comparison, every additional year of age results in a similar one-third of one degree decrease in feeling thermometer ratings and every additional year of formal education yields a two degree increase. Since — unlike age (which is entirely beyond an individual's control) or formal education (which is largely fixed relatively early in life) — the community in which an individual lives is at least somewhat a matter of choice, it strikes us that this variable is not only statistically significant, but also substantively important.

Discussion and Conclusions

The principal purpose of this study has been to provide a more rigorous empirical test of the contact hypothesis as it relates to gay men and lesbians. Noting that previous work in this area has been hampered by use of convenience samples and measures of contact that are problematic due to serious

problems with reciprocal causality, we noted that it was therefore difficult to determine whether the optimistic findings of these studies meant that the ameliorative effect of contact with homosexuals is not subject to all of the conditions found to be necessary in the case of bi-racial contact or whether the results were merely artifacts of flaws in research design. Seeking to minimize the endogeneity problem, we proposed a reconceptualized notion of contact based on community context --- in essence a measure of opportunities for contact with homosexuals. Using a randomly generated, national sample, we test a multivariate model using our context variable and find that it has both a statistically and substantively significant impact on respondents' affective attitudes toward homosexuals.

While we make no claims to having solved the endogeneity problem entirely — indeed, that would probably require the collection of panel data anticipated by Jackman and Crane (1986) — we believe that our measure is markedly superior to the personal contact measure that is the current industry standard. In fact, both *a priori* analytical reasons and our “soft” empirical tests indicated that our community context variable is likely to be largely unaffected by citizens' antecedent attitudes toward homosexuals.

Our conclusions provide at least some vindication, then, for the contact hypothesis, since they indicate that previous findings are unlikely to be primarily statistical artifacts resulting from the use of endogenous regressors or non-random convenience samples. In fact, to the extent that these findings are more methodologically robust, they suggest that exposure to gays and lesbians has tolerating effects even if all of the numerous conditions thought to be necessary for contact to have ameliorative impact are not operative.²⁹ We may infer from this that the contact hypothesis, which was after all developed primarily to help explain racial prejudice, may need to be amended in the case of homosexuality. Indeed, our findings indicate that contact with homosexuals may elicit quite different public responses than contact with racial minorities. A number of studies have demonstrated that whites who live in areas of high concentrations of African Americans have significantly lower affective responses to blacks (Glaser 1994)

and are more likely to leave the Democratic party in favor of the more racially homogenous Republican party (Giles and Hertz 1994; Giles and Buckner 1993).³⁰ More research will be needed to determine if homophobia has fundamentally different roots than racism (a position advocated by, among others, Young-Bruehl 1996) or whether attitudes toward homosexuals are simply more responsive to casual contact, while racist attitudes are resistant to all but the most intimate, cooperative, and positive interaction.

Our findings also point the way toward further research on public attitudes toward gays, *per se*. Among other things, it would be useful to replicate this study (1) using a multiple-item measure of public attitudes toward homosexuals such as that recommended by Herek and Glunt (1993) in order to ensure that our results are not driven by our choice of dependent variable; and (2) including a measure of interpersonal contact to allow us to determine how the contact and context variables relate to each other. Of course, it would also be enlightening to replicate this study with an externally generated, objective measure of homosexual population density³¹ or panel data that would allow us to control for attitudes prior to reported contact with homosexuals.

Finally, our findings also appear to have significant political and strategic implications. While our research does not directly address particular gay rights, previous research (see, especially, Wolpert and Wilcox 1996; see also Sniderman, et al. 1991) has demonstrated that people's affective attitudes toward gay men and lesbians is the strongest and most consistent predictor of their support for the equal treatment of homosexuals in such areas as employment, military service, and adoption rights. Since we can show with greater rigor that exposure to gays breeds tolerance amongst heterosexuals, we can conclude with greater confidence that it also indirectly enhances support for particular gay rights. Similarly, since there is a strong correlation between attitudes toward homosexuals and 1996 presidential vote choice ($r = .35$) --- stronger, in fact, than correlations between vote choice and age, education, race,

gender, or income --- exposure to gays and lesbians also has a significant indirect electoral effect.

In sum, by demonstrating in a more rigorous fashion that affective attitudes in the general public are improved by exposure to gays and lesbians, we can conclude with greater confidence what others have either merely asserted or speculated about: as gay men and lesbians become more candid about their sexual orientation and interact more openly with heterosexuals, the collective public affective attitude toward homosexuals should become more positive and support for greater civil rights should increase.

TABLE 1

Summary Descriptive Statistics,
Dependent and Independent Variables

Variable	Observations	Mean	Standard Deviation	Minimum Value	Maximum Value
Gay Feeling Thermometer	949	35.65	29.13	0	100
% Gays in Community	560	7.68	11.43	0	100
Homosexual Choice	835	2.63	0.83	1	4
Ideology	888	4.33	1.53	1	7
Year of Birth	970	1950.60	16.17	1908	1978
Education	993	14.49	3.19	3	31
Catholic	993	0.26	0.44	0	1
Fundamentalist Christian	995	0.30	0.46	0	1
Gender	995	0.46	0.50	0	1
Race	995	0.18	0.39	0	1
Black Male	995	0.09	0.29	0	1
Affect toward Feminism	899	44.91	26.13	0	100
South	995	0.35	0.48	0	1
Midwest	995	0.25	0.43	0	1
Marital Status	993	0.64	0.48	0	1
Likely Voter	985	1.57	1.26	1	6

TABLE 2

Censored Normal Regression Estimates of Sources of Attitudes Toward Homosexuals

Independent Variables	Excluding Community Context	Including Community Context
% Gays in Community		0.31** (0.13)
Homosexual Choice	-13.66*** (1.48)	-13.50*** (1.72)
Ideology	-4.34*** (0.81)	-3.51*** (1.01)
Year of Birth	0.23*** (0.08)	0.31*** (0.10)
Education	1.61*** (0.46)	1.95*** (0.57)
Catholic	0.35 (2.49)	-4.88* (3.04)
Fundamentalist Christian	-8.91*** (2.72)	-9.71*** (3.24)
Gender	-3.08 (2.43)	3.76 (2.89)
Race	1.66 (4.18)	6.51 (5.28)
Non-White Male	-4.33 (5.81)	-9.66 (7.27)
Affect toward Feminism	0.45*** (0.05)	0.35*** (0.06)
South	-4.47* (2.59)	-11.73*** (3.03)
Midwest	-5.28* (2.77)	-7.25** (3.31)
Marital Status	-3.83 (2.42)	-3.60 (2.84)
Likely Voter	-0.70 (0.88)	-1.09 (1.09)
Urbanism	3.98 (2.77)	1.41 (3.35)
Constant	-394.99*** (151.54)	-551.63*** (198.33)

N	672	407
Pseudo-R ²	.48	.52
*p ≤ .10; **p ≤ .05; ***p ≤ .01		

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Notes

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2. Furthermore, while Devine (1995, 503-504) acknowledges that only the first four should be viewed as minimal conditions, the list is not exhaustive and even meeting all of the conditions is no guarantee that contact necessarily engenders warmer feelings toward minority groups. In the absence of these conditions, various studies of racial attitudes have demonstrated that contact can lead to *increases* in whites' prejudicial attitudes toward blacks (see, e.g., Stephan 1987; Giles and Buckner 1993; Giles and Hertz 1994; Glaser 1994).

3. Glassner and Owen (1976), Gentry (1987), D'Augelli and Rose (1990), Whitley (1990), and Matchinsky and Iverson (1996) all ask similar questions regarding personal contact with homosexuals.

4. Herek and Capitanio (1996) use a similarly worded question: do you have "any male or female friends who are gay or homosexual."

5. See Gentry (1987, 207) for an expression of similar reservations. For examples of those less cautious about drawing causal inferences and making subsequent policy recommendations see D'Augelli and Rose 1990, and Matchinsky and Iverson 1996. Herek and Capitanio acknowledge that "a reciprocal relationship between contact and attitudes ... suggest[s] an important modification to the contact hypothesis" (p. 414). But they do not detail what this modification entails and subsequently ignore their own caveats regarding causality, endorsing "coming out" as a way of reducing prejudice (p. 422) without further mention of the possibility that more tolerant attitudes may lead to contact and not *vice versa*. For empirical evidence regarding selective disclosure, see Wells and Kline (1987).

6. The endogeneity problem has received considerably more attention in the literature on bi-racial contact than it has in the literature on attitudes toward homosexuals. The conventional wisdom, which is expressed best by Jackman and Crane (1986), is that fully disentangling these causality issues will require longitudinal panel data that are currently unavailable. (For a recent attempt at collecting such panel data, see Herek and Capitanio [1996]. Unfortunately, the small number of respondents reporting initial contact with homosexuals between the two survey waves renders statistical analysis of the data and the drawing of causal inferences very problematic.) On the other hand, recent work by Powers and Ellison (1995) has treated the endogeneity issue as a selection bias problem that can be addressed with switching regression models. Their results suggest that previous authors may have overstated the seriousness of the endogeneity threat.

7. Indeed, one advisor to the Census told us that to the best of his knowledge during discussions of the 1990 census the issue of homosexuality was never raised in relation to this question. He told us that he had always understood the question to regard close personal friends (“such as old spinsters”) who happened to be housemates (personal interview with the authors, August 1997).
8. There are other potentially serious problems as well. The figures completely ignore “closeted” gay men and women, as well as those not in serious, live-in relationships at the time of the census. There is also likely to be a significant reporting bias, with those living in more tolerant locales more likely to admit to having a same-sex, unmarried partner.
9. In addition, both Haider-Markel and Meier (1996) and Wald, Button, and Rienzo (1996, 1160) acknowledge that measures of gay-oriented businesses are biased in favor of upper socio-economic status, white, male homosexuals.
10. Both of these studies measure public perceptions of the size of the African-American, Hispanic, and Jewish populations in the United States. No study of which we are aware has asked respondents to estimate the size of the homosexual population.
11. It is also worth noting that even those most concerned about Americans’ innumeracy regarding minority populations do not advocate abandoning the use of such estimates in multivariate models, only using them with care. As Nadeau, Niemi, and Levine (1993, 344) note, “minority group size estimates are most useful when considered in relative rather than absolute terms,” which is essentially the course we follow here. These authors also note that the public’s similarly innumerate estimates of the viability of presidential candidates does not preclude their use in nor vitiate the findings of powerfully predictive models of primary elections (see Abramson, et al. 1992; Bartels 1988).
11. Data on this topic for other minority groups is spotty and at least leaves the question open. Nadeau, Niemi, and Levine (1993) find that attitudes toward civil rights issues did not significantly (at the .05 level) affect whites’ estimates of the size of the national black population, but that attitudes toward jobs, crime, taxes, and the English language did significantly inflate their estimates of Hispanic population size. Unfortunately, they did not test the effects of attitudes toward Jews on estimates of the size of the Jewish population, an example more analogous to the homosexual population.
12. The survey script read: “Now I would like to ask you about your feeling toward some political figures and groups. I’ll read a name and I’d like you to rate that person using something we call the feeling thermometer. It goes from 0 degrees to 100 degrees. Ratings between 50 and 100 degrees mean that you feel favorably and warm toward that person or group. Ratings between 0 degrees and 50 degrees mean that you don’t feel favorably and are cold about that person or group. You would rate a person or group at the 50 degree mark if you don’t feel particularly warm or cold about them. If we come to a name you don’t recognize, you don’t need to rate them. Just tell me and we’ll move on to the next one.... How about gays and lesbians?”
13. While some (see, e.g., Herek and Glunt 1993, 239) are critical of using single items to assess attitudes toward gay men and lesbians, Seltzer (1992, 397) concludes that national sample surveys using single and multiple indicators yield “very consistent” results.

14. These figures comport well with those reported by Wolpert and Wilcox (1996) using National Election Study (NES) data from 1992 and 1993. Unlike Wolpert and Wilcox, we opt not to standardize our dependent variable by subtracting from respondents' ratings of homosexuals the average score of their feeling thermometer ratings of other groups. We choose this course both because, unlike the NES, our data set contains feeling thermometers for only three groups and one of these --- feminists --- is included in the model.

15. In this case, censored normal and OLS regression formulas yield very similar results.

16. Following Wolpert and Wilcox (1996) and others, in earlier specifications of the model (not reported) we included a variety of scaled items created from specific policy questions designed to tap into different dimensions of ideology (e.g., social vs. economic). Since none of these variables emerged as significant or improved overall model fit, we deleted them in favor of a more parsimonious specification.

17. Our data do not allow us to include a variable to capture the effect of the level of religious exposure, although the limited empirical evidence for a religiosity effect convince us that its exclusion is not cause for serious concern. While some have found a strong bivariate correlation between frequency of church attendance and lower affective attitudes toward homosexuals (see, especially, the ANOVA tables reported in Herek and Glunt 1993, and Herek and Capitano 1996) these results often evaporate in more fully specified multivariate models. For instance, in their OLS models of public attitudes toward homosexuals generally, and public support for policies that would protect gays from job discrimination and allow them to serve openly in the military, and adopt children, Wolpert and Wilcox (1996) found that frequency of church attendance was significantly associated with only the latter (see also Nolan 1996, who finds very mixed results for religiosity).

18. Respondents who earlier identified themselves as either Protestant or Catholics were asked “[d]o you consider yourself to be a ‘born-again’ Christian?”

19. The survey script read: “What percentage of the residents in your local community would you say are gay or lesbian?”

20. The pattern of non-responses appears to be more or less random. To determine this, we dichotomized all respondents, coding those who gave any estimate of the gay community size between 0 and 100 as 0, and all other respondents (i.e., the “don’t know” and refusals) as 1. We then regressed this variable on the other 16 variables described here using a logistic regression model. Not only was the overall model fit poor (pseudo- $R^2 = .05$), but only age emerged as a significant predictor of response likelihood (with younger respondents more likely to give an estimate). This convinces us that our missing cases are not distinctive and that the sample used in our models is generally representative of the population. It is also worth noting that compared to other studies in this area, our sample is not abnormally small. While some studies report only overall sample size, not the number of observations remaining after missing data is removed from particular models (see Seltzer 1992; Herek and Glunt 1993; Herek and Capitano 1996; Nolan 1996), other recent studies have reported numbers of cases used in individual equations ranging from 236 to 450 (Wolpert and Wilcox 1996). Of course, our sample size is considerably larger than those studies that rely on student sampling frames (Kerns and Fine 1994; Harry 1995; Matchinsky and Iverson 1996; Logan 1996).

21. According to Nadeau, Niemi, and Levine (1993, 334-335), on average Americans tend to mis-estimate the national African-American population by a factor of 2.75, the Hispanic population by a factor of 2.4, and the Jewish population by a factor of 7.5.
22. Due to concerns about possible collinearity problems among our independent variables, we ran the usual diagnostic tests for multicollinearity and are convinced it is not a problem with these models. With the exception of the interactive term and its component parts, none of the independent variables is highly correlated with any other. Also, there is no evidence of other telltale signs of multicollinearity, such as regression coefficients with abnormally large standard errors or beta coefficients of larger than 1.00
23. In addition, the fundamentalist Christian variable borders on statistical significance ($p = .057$), with self identified born-again Christians reporting marginally smaller local gay populations.
24. The poor model fit reported above also essentially precludes another strategy for gaining analytical leverage on the endogeneity problem: two-stage least squares (2SLS). While we had originally suspected that our demographic variables would provide us with excellent data with which to construct an instrumental context variable purged of its correlation with the error term, the results described above indicate this is not the case.
25. For purposes of comparison, a similar model reported by Wolpert and Wilcox (1996) yielded an adjusted- R^2 of .46. Seltzer (1992, 396) and Herek and Glunt (1993, 241) report un-adjusted (and, hence, probably inflated) R^2 s of .39 and .30, respectively.
26. Other factors that probably affect the impact of gender in our models include the fact that our feeling thermometer question did not distinguish between attitudes toward gay men and those toward lesbians (where previous research has been much less consistent in finding a gender difference), our use of a relatively large sample (studies with smaller samples have reported larger gender differentials), and our use of a random sample (studies utilizing more homogenous convenience samples have also reported larger gender differences). For a discussion of these issues, see Kite (1984) and Kite and Whitley (1996).
27. A similarly constructed variable failed to reach statistical significance in either Haider-Markel and Meier (1996) analysis of gay rights provisions in the 50 states or their analysis of county-level voting support for anti-gay rights initiatives in Colorado and Oregon.
28. See also Haider-Markel and Meier (1996) who find that percentage of Catholic population had no impact on state gay rights ordinances or, in Oregon and Colorado, on county-level support for anti-gay rights initiatives.
29. The presence or absence of the numerous conditions found to be necessary for contact to have positive effects can be assured only in work done in experimental settings. Therefore, we cannot be absolutely certain that the conditions were completely absent in the community contexts in which our respondents had contact with homosexuals. However, it certainly seems to fair to assume that it would be rare that all of the conditions would be present in interactions that take place outside the rarified atmosphere of controlled, experimental conditions.

30. Such findings about attitudes toward racial minorities are not surprising given the lengthy list of conditions --- rarely met in inter-racial interaction --- found to be necessary for contact to result in more positive views of out groups and because of the consistent findings related to the contrary “black belt hypothesis” by Key (1949) and Blalock (1956, 1957) in earlier decades.

31. While it remains quite unclear how such a measure would be derived, there are perhaps innovative approaches (e.g., sales figures for national gay or lesbian publications broken down by zip codes) that could be used to develop a reasonable surrogate.