

CONCRETE LANGUAGE AND SEXUAL PREJUDICE

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ABSTRACT

IAN JAMES CONLON: Concrete Language and Sexual Prejudice
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This paper examines the role of concrete terminology in survey research and its relationship to prejudicial response. Using data from the 2004 National Annenberg Election Study, I examine responses to two similarly worded items about same-sex marriage. The two questions had near-identical wording, with the only exception being the terms used to refer to describe same-sex couples. The first wording asked about “gays and lesbians,” whereas the second asked about “two men” or “two women.” Drawing on research in cognitive psychology, I hypothesize that opposition to the second wording will be higher and more extreme because the wording is more concrete and thus more likely to evoke visualization. Additionally, I hypothesize that respondents from sociodemographic groups associated with heightened sexual prejudice will be disproportionately affected by the concrete wording. The results confirm both hypotheses. Implications for survey response and limitations of the current study are discussed.

To my parents, Brian and Susanne Conlon

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CHAPTER 1

INTRODUCTION

The problem of question wording is not unique to the design process, nor is an examination of wording effects relevant only to survey methodology. A question about an issue worded one way can produce a disparate response from a differently worded question dealing with the same issue. Previous research on question wording effects, being conducted almost exclusively by survey methodologists, has focused on the potential for subtle differences to produce disparate response, with the ultimate goal of the research being the development of better questionnaires. But disparate response to differently worded questions can illuminate more than whether one question wording is superior to another. Indeed, disparate response indicates that survey respondents understand questions differently and undergo a different social-psychological process in formulating their response.

In this paper, I use data from the 2004 National Annenberg Election Study to explore differences in response to two questions dealing with same-sex marriage. The two questions employ near-identical wording, with the only exception being the terms used to describe same-sex couples. The first question asked respondents whether “gays and lesbians” should be allowed to marry, whereas the second asked about “two men” and “two women.”

Drawing upon and synthesizing research from survey methodology, cognitive psychology, and linguistics, I argue that the second wording, because it employed concrete terminology associated with heightened mental imagery, should provoke heightened opposition. Moreover, I argue that the wording effect should positively correlate with

predictors of sexual prejudice, as people inclined to higher levels of sexual prejudice should be expected to find the associated mental image more displeasing. Therefore, I expect respondents with sociodemographic characteristics and salient identities that correspond to heightened sexual prejudice to be more strongly affected by the concrete wording.

CHAPTER 2

BACKGROUND

The debate over same-sex marriage is only the latest issue in an ongoing struggle for gay rights. Previous issues included the right to freely engage in sexual relations, which gained national recognition following the Supreme Court decision in *Bowers v. Hardwick*, 478 U.S. 186 (1986). In the *Bowers* decision, the Court ruled that the Constitution did not provide protection for acts of sodomy. The 2003 decision in *Lawrence v. Texas*, 539 U.S. 558 overturned the *Bowers* decision, holding that the Due Process Clause grants consenting individuals the right to engage in acts of sodomy without interference from the government (539 U.S. 558). In addition, in the past two decades, homosexuals have made a significant push for the right to serve in the military and for laws forbidding employment discrimination.

By contrast, the issue of same-sex marriage has only recently achieved national attention. Not until the Massachusetts Supreme Judicial Court's controversial 2003 decision, which ruled the state's ban on gay marriage unconstitutional, did the issue of gay marriage come to the forefront of American political discourse. Public outcry following the decision led conservative politicians to propose legislative barriers. Legislatures in eleven states developed ballot initiatives to ban same-sex marriage, and on the national level, President Bush stepped up efforts to pursue an amendment to the Constitution that would codify marriage as only between a man and a woman. The issue of same-sex marriage quickly became a hot button issue in the 2004 campaign.

Since exploding onto the national scene in 2003, same-sex marriage has received

little public support. Polling on the issue has been consistent, with a majority of Americans opposing the recognition of same-sex marriages (ABC News/Washington Post Poll). Paul Brewer and Clyde Wilcox (2005) observe that polling data from the early 1990s closely resemble current figures and suggest that there may have been a slight increase in opposition over the period. Nearly equal numbers support as oppose an amendment to the Constitution that would codify marriage as a union between a man and a woman, thereby excluding same-sex marriage from consideration by individual states (Gallup Poll). Opposition to same-sex marriage, however, does not necessitate opposition to gay civil unions, and polls indicate that a majority of Americans support at least partial legal recognition of same-sex couples (Brewer and Wilcox 2005). Moreover, data show that the public supports granting same-sex spouses inheritance rights, Social Security benefits, health insurance, and other employee benefits (Newsweek Poll).

Psychology of Survey Response

Beginning in the 1980s, survey methodologists began to devote considerable attention to the psychological processes that underlie survey response. Methodologists looked to the insights of cognitive psychology to inform their understanding, initiating a movement that has become known as the cognitive aspects of survey methodology, or *CASM*, movement (Sirken et al. 1999; Tourangeau, Rips, and Rasinski 2000). Prevailing theories of survey response provided by *CASM* researchers emphasize the systematic process that respondents follow when responding to questions.

Although there exist several theories of survey response that draw on cognitive psychology, most include three primary processes: comprehension of the question, retrieval of relevant information, and response (e.g., Cannell, Miller, and Oksenberg 1981;

Tourangeau 1984; Turner and Martin 1984). Comprehension of the question consists of developing an understanding of the lexical and syntactical elements of the question as well as determining its dominant theme. Retrieval refers to the recall of relevant information from long-term memory. Finally, the response stage consists of the respondent relaying her answer to the interviewer. For my analysis, I focus exclusively on the first two stages, as these are most likely to be associated with wording effects (Holleman 2000).

In the comprehension stage, respondents seek to develop an understanding of the question being asked (Clark 1985; Graesser, McMahan, and Johnson 1994). In this stage, factors such as the vocabulary level of the respondent and the complexity of the question's syntactical structure are of importance (Cannell et al. 1981). Vague and ambiguous language can pose difficulties for respondents at this stage in the response process. Take, for example, the seemingly simple question: "In the past month, how many times have you visited the doctor for your health?" In comprehending this question, the respondent may wonder what constitutes a visitation. She may wonder whether an informal visit to obtain medical records or a visit to her chiropractor should be included in the tabulation. Moreover, the time referent of "past month" is ambiguous. Does "past month" refer to the previous calendar month, the 30 days prior to the date of the interview, or something else? Thus, ambiguous or vague terminology can lead respondents to misunderstand or misinterpret the nature of the question. When survey methodologists refer to the importance of standardized wording in questionnaires, what they really hope to ensure is standardized comprehension.

The second stage of the response process involves retrieval of information relevant to the concept in question. During this stage, respondents recall relevant information from long-term memory. Processes at this stage include adopting a retrieval strategy, generating

retrieval cues to produce recall, and filling in partial memories through inference (Tourangeau et al. 2000). With regard to questions about subjective phenomena, researchers are divided as to how respondents retrieve relevant information. Some researchers, taking their cue from Philip Converse's (1964, 1970) research on non-attitudes, argue that many respondents do not have stable attitudes and that responses shift too dramatically over time to be trusted (e.g., Tourangeau et al. 2000). As a result, responses are created at the time of the survey. Other researchers contend that respondents have preexisting attitudes that are stable over time and, they argue, survey researchers can effectively tap these underlying attitudes with carefully crafted questions. Under this view, attitudes are seen as an association between some object or issue and the respondent's evaluation of it.

I am more sympathetic to the view that respondents can and do provide stable responses to attitudinal survey questions, especially for salient issues like same-sex marriage. Contrary to the assertion made by Converse regarding the non-existence and volatility of attitudes, research has shown that the mass public *do* have meaningful and stable attitudes (Judd and Milburn 1980). Indeed, in a comprehensive analysis of public opinion, Page and Shapiro (1992) found a "remarkable degree of stability in Americans' collective policy preferences" (p. 45). In fact, nearly two-thirds of the attitudinal questions in their analysis that dealt with domestic issues showed no significant change in public opinion. Moreover, research has demonstrated that attitudes, especially attitudes that are highly accessible, can be automatically activated (Fazio 1989; Krosnick 1989). For example, one experiment found that the repeated expression of an attitude produced faster responses to questions about it (Fazio et al. 1982). A later experiment demonstrated that attitude targets affected a respondent's ability to classify adjectives (Fazio and Williams 1986). In this experiment,

respondents were provided targets based on their associated attitude (e.g., spider or landlord) as well as corresponding adjectives (e.g., appealing or appalling). In cases where respondents were provided a discordant pair, such as *spider-appealing*, they were slower to classify the adjective. By contrast, when the noun-adjective pair was concordant, such as *spider-appalling*, respondents classified adjectives faster.

Within this understanding of attitude retrieval, there are competing explanations as to the nature of the relationship between attitude and object. One view argues that attitudinal responses correspond to specific beliefs about the construct in question (Tourangeau and Rasinski 1988), whereas another suggests that responses derive from general values and predispositions (Zaller 1992). For the sake of my analysis, either response process is acceptable. Regardless of the exact process by which respondents reach their reported opinion, the concrete wording of the second question ought to provoke a more extreme response. Nevertheless, my hypothesis stands more in the tradition of the general values and predispositions approach. Particularly, I draw on the application of this approach by Kristin Luker (1985) in her examination of public opinion surrounding abortion. She found that attitudes toward abortion derive primarily from views about religion, the role of women, and sexual freedom. In adapting this approach to the issue of same-sex marriage, I argue that the second, more concrete wording—“two men” or “two women”—will be more likely to produce strong opposition among people with salient religious identities or other group memberships associated with decreased tolerance for gay people.

Question Wording

Difficulties encountered at either the comprehension or retrieval stage of the response process can lead to response effects. Questions may contain terms unfamiliar to respondents

or syntactic structures that obscure the question's focus, leading to problems in comprehension. Similarly, alternate wordings can lead respondents to retrieve and employ different values and predispositions in formulating their response. Previous research has effectively demonstrated that changes, however subtle, to a question's wording can produce different results (e.g., Schuman and Presser 1981). But whereas previous research on wording effects has dealt with asymmetrical responses and loaded phrases, I propose a different form of wording effect. I explore the extent to which terminology used to refer to the concept in question can shape respondents' understanding of the concept and thus elicit different responses. Rather than isolate discrepant response by wording, I use the observed discrepancy to demonstrate the role of mental imagery in triggering sexual prejudice.

Perhaps the closest comparison from previous research comes from Tom Smith's (1987) examination of public opinion regarding federal assistance programs. Smith found that support for federal assistance programs was higher when respondents were asked about "assistance to the poor" than when they were asked about "welfare." The reason for the discrepancy in response, Smith argues, is that the term "welfare" triggers more concerns about the cost and wastefulness of assistance services than does "assistance." In the case of the same-sex marriage items in my analysis, I contend that the second question wording—"two men" or "two women"—is more concrete in nature and thus more imaginable than the wording in the first question—"gays and lesbians." I hypothesize that the imagery provoked by the second wording will trigger disgust, disproportionately among people inclined to greater sexual prejudice, and thus will lead them to report a more negative response.

Words are powerful, but, as any good writer knows, they are not equally powerful. Some words can elicit mental and even physiological reactions, whereas others produce

hardly any effect at all. One dimension along which words differ is their capacity to create mental images (e.g., Sadoski and Paivio 2001). Research in cognitive psychology has explored this phenomenon at length and has found key differences in the quality of words and their propensity to produce a mental image. Most relevant to my analysis is the fact that voluminous research has shown that concrete words are more readily imaged than abstract concepts (e.g., Abernethy 1991; Paivio and Csapo 1973; Richardson 1980).

With regard to the questions in my analysis, I contend that “men” and “women” are more concrete terms than “gays” and “lesbians.” In fact, previous research has demonstrated that the words “men” and “women” are associated with heightened levels of imagery (Abernethy 1991; Bellezza, Greenwald, and Banaji 1986). Neither “gay” nor “lesbian” has been tested in similar experiments. Nevertheless, it would seem that neither word could evoke as clear an image as “man” or “woman,” and the reason is simple: the terms “gay” and “lesbian” do not function only as nouns. Instead, they can and often do function as adjectives. In their nominal form, the words refer merely to abstracted roles, much in the same way as the terms “heterosexual” and “bisexual.” But, as with words like “heterosexual” and “bisexual,” the nominal form of “gay” and “lesbian” is not so well-defined as to be readily associated with an image. What does a “heterosexual” look like?

It is only in their adjectival form that words like “heterosexual” and “gay” evoke a mental image, and even here, the resulting image is more the result of the modified noun. For example, in the phrase “gay man” or “gay couple,” the element of the phrase that elicits a mental image is not the adjective “gay.” On the contrary, the nouns “man” and “couple” produce the image, as they are concrete terms for which we have a preexisting mental

concept. The adjective “gay” only informs us of the sort of “man” or “couple” that is to be imaged. Yet even here, it is unclear how “gay” would modify the image produced.

The distinction between the adjectival and nominal forms of “gay” and “lesbian” is significant because, in the case of the question asked of respondents, the terms were used in their more abstracted, less imaginable nominal form. Respondents were asked, “Would you favor or oppose a law in your state that would allow gays and lesbians to marry a partner of the same sex?” Nothing in this question is so evocative as to elicit a mental image. By contrast, the second wording asked respondents about “two men” or “two women.” Here, the mental image can hardly be avoided. The terms “men” and “women” are readily imaged, and the adjective “two” clearly indicates the form of the image: not one man or woman, but two. Factor in that the question concerns the institution of marriage, and the context in which these “two men” and “two women” are to be pictured also becomes clear.

Why should the more concrete, more easily visualized question wording about same-sex marriage be expected to elicit a more oppositional response? To inform this hypothesis, I draw upon a growing body of psychological research that explores the role that disgust plays in moral valuation. In a recent treatise on the subject, William Ian Miller notes, “Disgust figures centrally in our everyday moral discourse: along with indignation it gives voice to our strongest sentiments of moral disapprobation” (1997). To be sure, much of the discourse about same-sex marriage is rife with the language of disgust. Terms like “abomination” and “disgusting” are frequently used by opponents of same-sex marriage to describe the gay lifestyle and to provide some justification, however ill-formed, for their opposition. Indeed, the language of disgust has crept into the moral vocabulary of American youth as well, with

over one-third of high school seniors agreeing with the statement, “Gay men are disgusting” (Gilbert 2006).¹

But the language and expression of disgust is relative, varying historically and culturally (Miller 1997). Moreover, the extent to which disgust informs moral valuation is not distributed equally among people within the same society. Recent research in social psychology has explored the degree to which disgust sensitivity differs by sociodemographic group. In particular, self-identified conservatives were found to be more likely than self-identified liberals to declare as relevant to an action’s moral valuation whether it is deemed “disgusting” (Haidt and Graham 2007). Subsequent research has demonstrated that, for political conservatives, the relationship between disgust sensitivity and political opinion is strongest for sociomoral issues, such as abortion and same-sex marriage (Inbar, Pizarro, and Bloom in progress). As for the evaluation of imagery, research has shown that people who are intolerant of homosexuality tend to evaluate homoerotic imagery less favorably than do people who hold tolerant attitudes (Bhat, Leigh, and Wardlow 1996).

Taking research on disgust sensitivity as a point of departure, I argue that the difference in the quality of language used in the two questions should produce a discrepancy in response. Because the second wording contains concrete language, which is more capable of evoking a mental image, it should produce a different response. Moreover, I hypothesize that the response differences should not be distributed at random but rather should correlate with predictors of sexual prejudice. In addition, respondents more inclined to sexual prejudice should be more likely to react to the resulting mental image with disgust and thus should provide a more opposed response.

¹ Twenty-eight percent agreed with the statement, “Lesbians are disgusting.”

Predictors of Sexual Prejudice

A large body of psychological and sociological literature has explored the individual and group characteristics associated with heightened sexual prejudice. Although most adults in the United States hold a negative attitude toward homosexual behavior (Yang 1997), the attitudes are not distributed at random in society. Rather, there are patterned differences in levels of sexual prejudice across sociodemographic categories. I use the term sexual prejudice to refer to “all negative attitudes based on sexual orientation” (Herek 2000: 19). Of course, practically speaking, such prejudice in the United States is almost always directed toward people who engage in homosexual behaviors or define themselves as gay, lesbian, or bisexual. In this section, I provide a brief review of the literature on sexual prejudice.

Research has shown that higher levels of sexual prejudice are found among people who are older, less educated, living in the Midwest or South, and living in rural areas (Herek 1994). In addition, men tend to exhibit higher levels of sexual prejudice than women (Herek and Capitanio 1999; Kite and Whitley 1998). The relationship between race and sexual prejudice is more nuanced. Some research has suggested that whites have significantly more negative attitudes toward homosexuality than blacks (Levitt and Klassen 1974), yet other research has found just the opposite (Hudson and Ricketts 1980; Schneider and Lewis 1984). Still other research found no statistically significant differences by race at all (Glenn and Weaver 1979; Irwin and Thompson 1977). Finally, since the 1980s, levels of sexual prejudice have increasingly begun to correlate with conservative political ideology and affiliation with the Republican Party (Yang 1998).

Of all predictors of sexual prejudice, however, none is more powerful than religiosity, and this relationship is well-documented. All three aspects of religiosity—belief, behavior,

and belonging—have been shown to correlate with sexual prejudice. In terms of belief, biblical literalism stands as the most significant predictor of antigay prejudice (Burdette, Ellison, and Hill 2005; Ellison and Musick 1993; Wilcox and Jelen 1990). Religious service attendance tends to predict heightened sexual prejudice, with those attending services most frequently having the most prejudiced attitudes toward homosexuality (Beatty and Walter 1984; Herek and Glunt 1993; Fisher et al. 1994). Finally, religious affiliation is also a consistent predictor of sexual prejudice, with membership in conservative religious denominations, such as Evangelical Protestantism, being a particularly strong predictor (Cochran and Beeghley 1991; Finlay and Walther 2003; Herek and Capitanio 1996).

Hypotheses

I hypothesize that sociodemographic characteristics that correlate with sexual prejudice should also be associated with more negative responses to the concrete question wording. Moreover, people with salient identities associated with heightened prejudice (e.g., a salient religious identity) should be disproportionately affected by the concrete question wording. Specifically, I hypothesize the following:

- 1) Responses to the concrete version of the same-sex marriage question will be more strongly opposed than responses to the abstract version.
- 2) The effect of the concrete wording will not be at random but rather will be disproportionately experienced among social groups associated with heightened sexual prejudice. Thus, in accordance with research on sexual prejudice (Herek 1994), there will be stronger effects for men, the lesser educated, respondents from the South or Midwest, born-again Christians, frequent churchgoers, the religiously affiliated, political conservatives, and Republicans.

CHAPTER 3

METHODOLOGY

Data for my analysis come from the 2004 National Annenberg Election Study (NAES). The NAES is one of the largest academic public opinion surveys ever conducted of the American public. Interviews for the NAES were conducted by computer-assisted telephone interview (CATI), and interviews took, on average, 30 minutes to complete. The national rolling cross-sectional portion of the NAES, which serves as the source for my data, consists of 81,422 interviews of randomly selected, non-institutionalized adults in the 48 continental states and Washington, D.C. A rolling cross-sectional design is similar to a traditional cross-sectional design, but the day on which a respondent is interviewed is determined randomly (Johnston and Brady 2002). Interviews were conducted from October 7, 2003 through November 16, 2004. Interviews were administered daily, with the exception of certain holidays,² at an average of between 150 and 300 completed interviews per day. Each interview took an average of 30 minutes to complete.

Respondents to the national rolling cross-section were selected using a random-digit dialing (RDD) procedure. The sampling frame consisted of a randomly generated list of 10-digit telephone numbers.³ The first eight digits reflected estimated proportions of household phones beginning with those digits. The final two digits were generated entirely at random.

² The NAES did not collect data on the following dates: November 27, 2003 (Thanksgiving), December 24-25, 2003 (Christmas), December 31, 2003-January 1, 2004 (New Year's), April 11, 2004 (Easter), and July 4, 2004 (Independence Day).

³ The sampling frame for the NAES was developed by Survey Sampling, Inc. of Westport, Connecticut.

Per United States government regulations, all known cell phone numbers were excluded from the frame. Upon reaching a household, interviewers asked to speak with an adult age 18 or older, and this person was then asked to indicate the number of adults in the household. One adult per household was selected to participate in the survey. Interviews for the NAES were conducted in either English or Spanish, depending on the preference of the respondent.

The 2004 NAES had a response rate of 25 percent,⁴ which is considerably lower than other telephone-based surveys that employ a random-digit dialing method. Moreover, because only households with a telephone are eligible to participate, a small percentage of the population fell outside of the sampling frame. One recent estimate suggests that 95 percent of all households in the United States contain telephones, leaving five percent of households, which are disproportionately low-income, beyond the scope of the survey (Casady and Lepkowski 1998).

Although the survey had a rather low response rate and its RDD method precluded the participation of a segment of the population, I believe that these shortcomings pose little threat to my analysis for two reasons. First, I do not intend for my analysis to generalize to the entire population. Instead, I aim to explore the psychological processes associated with survey response. Neither a high response rate nor complete coverage of the population is necessary to demonstrate the existence of such processes. Second, research has shown that lower response rates do not necessarily produce less reliable findings (Curtin, Presser, and

⁴ The 25 percent figure is based on a ratio of completed interviews to eligible households. I also calculated response rates using the American Association for Public Opinion Research's (AAPOR) *Standard Definitions, Version 3* (2004) and found the following: RR1, or minimum response rate (21.7 percent); RR2, which includes partial interviews as respondents (26 percent); RR3, which estimates what percentage of cases with unknown eligibility are eligible (23.5 percent); and RR4, which includes RR3 estimates and the partial interviews, as in RR2 (28.2 percent).

Singer 2000). In fact, studies with lower response rates have been found to produce nearly identical measurements of most social and political attitudes (Keeter et al. 2000).

Measurement of Variables

The dependent variables in my analysis are two similarly worded questions in the 2004 NAES that deal with same-sex marriage (see Table 1 for descriptive statistics). The first version of the question asked, “Would you favor or oppose a law in your state that would allow gays and lesbians to marry a partner of the same sex?” Valid responses were either “favor” or “oppose.” This version was asked of 8,550 respondents, 7,836 (91.64 percent) of whom provided a valid response.⁵ The second version of the question asked, “Would you favor or oppose a law in your state that would allow two men to marry each other or two women to marry each other?” This version was asked of 12,176 respondents, 11,107 (91.22 percent) of whom provided a valid response.⁶

For both question wordings, the order of “favor” and “oppose” was randomized to remove any systematic bias associated with always reading one before the other. In addition, for both questions, if respondents provided a valid response, they were then asked, “Is that strongly [favor/oppose] or somewhat [favor/oppose]?” Arranging the data in this way, the questions have four valid response categories: strongly favor, somewhat favor, somewhat oppose, and strongly oppose. Responses are coded 1-4 from “strongly favor” to “strongly oppose.” The total number of respondents that provided a valid response to either question wording was 18,943. Adding all covariates to the analysis, deleting missing cases listwise,

⁵ Five-hundred-seventy-eight (578) respondents (6.76 percent of total) provided a response of “don’t know,” and 136 (1.59 percent) refused to answer.

⁶ Eight-hundred-forty-three (843) respondents (6.92 percent of total) provided a response of “don’t know,” and 226 (1.86 percent) refused to answer.

produces a final analytic sample of 16,003, or 84.4 percent of valid responses to the same-sex marriage items.⁷

I selected the independent variables for my analysis based on their relationship to sexual prejudice. Demographically, I include controls for gender (female=1), age (continuous), and race. My measure of race has three categories: white, black, and “other.” The category for “other” comprises Asian-Americans, Native Americans, and respondents who provided the response of “some other race.”⁸

I also include a measure of educational attainment. My measure of education consists of four categories, arranged by highest degree obtained. The reference category for my variable is “high school graduate or less.” Other categories are some college, bachelor’s degree, and graduate or professional degree. The category for “some college” includes respondents who attended technical or vocational school after high school and those who received an associate’s or two-year degree. The category for “bachelor’s degree” includes respondents who attended graduate or professional school but did not obtain a degree.

My analysis includes one contextual variable that has been shown to correlate with sexual prejudice. For geographical context, I include a variable consisting of the four Census regions (Northeast, Midwest, South, and West). I set Northeast as the reference category.

With regard to religious variables, I include three measures designed to tap respondents’ belief, behavior, and belonging. The 2004 NAES does not contain a measure of

⁷ I recognize that this means that a fairly high proportion of valid responses was deleted as a result of missing data. To assess whether their removal biased the distribution of either of the dependent variables, I ran chi-square tests comparing the distribution of valid responses for each question to the responses included in the analytic sample. Neither test was significant. I also ran tests for all independent variables, finding that my sample contains more white respondents, fewer black respondents, and a greater proportion of religious respondents.

⁸ I include respondents with “other” racial identities not to generalize about their propensity to be affected by the question wording, but rather to retain them in the sample. Regardless of statistical significance, I do not interpret the coefficients associated with this racial category.

biblical literalism, so as a proxy measure, I use a question that asked, “Do you consider yourself an evangelical or born-again Christian?” Research has shown that self-identified evangelicals and born-again Christians are likely to hold a literalist view of the Bible (Wilcox and Jelen 1990), so I believe that my measure provides a reasonable proxy for biblical literalism. The frequency of church attendance measure that I employ is a three-category ordinal measure, consisting of “never” (reference), “infrequent,” “weekly or more.”⁹ Finally, I include a variable for religious affiliation. Unfortunately, the measurement of affiliation in the 2004 NAES is not precise enough to permit me to arrange categories according to the prevailing method (Steensland et al. 2000). Instead, I divide respondents into six broad groupings: Protestant (reference), Catholic, Mormon, Jewish, and no affiliation.¹⁰

Finally, I include measures of political ideology and party affiliation. For political ideology, respondents were asked, “Generally speaking, would you describe your political views as very conservative, conservative, moderate, liberal, or very liberal?” I collapse the categories into three: conservative (reference), moderate, and liberal. Party affiliation was determined by asking, “Generally speaking, do you usually think of yourself as a Republican, a Democrat, an Independent, or something else?” I include all four valid responses in my analysis, but because the “Independent” and “something else” categories are too vaguely defined, I will not interpret their coefficients. I set Republican as the reference category.

⁹ I constructed these categories from a standard five-category measure. The “infrequent” category includes respondents who indicated that they attend “a few times a year” or “once or twice a month.” The “weekly or more” category includes respondents who said they attend “once a week” or “more than once a week.”

¹⁰ The category “no affiliation” includes respondents who claimed no denomination as well as respondents who identified as atheist or agnostic. Note: the response of “no denomination” should not be confused with the growing number of conservative Protestants who classify themselves as “non-denominational.” Rather, this group contains respondents who indicated that they never attend religious services and, when asked for their denominational affiliation, responded “no denomination.”

Analytic Techniques

My analysis is divided into four sections. In the first section, I discuss the univariate descriptive statistics for the independent variables included in the analysis. In the second section, I determine whether the second question wording significantly affected responses by running a bivariate crosstabulation followed by a multivariate model with all controls to see whether question wording remains a significant predictor. Because the dependent variable in my analysis is ordinal in nature, I use ordered logistic regression (OLR). The formula for the ordinal logistic regression is as follows:

$$\log\left(\frac{\pi_{ij}}{1-\pi_{ij}}\right) = \theta_j + \beta' X_i, \text{ where } i \text{ refers to individual } i \text{ and } j \text{ refers to the number of response}$$

categories in the dependent variable. The coefficients from an OLR, reported as odds-ratios, are interpreted as the effect that a one-unit increase in the independent variable would have on the odds of being in a higher, and thus more opposed, response category.¹¹ I then run separate OLR models by question wording and use the coefficients from each model to calculate predicted probabilities for selected subsamples, comparing probabilities by the question wording the respondent received.¹² Because my analysis deals primarily with opposition to same-sex marriage, and extreme opposition in particular, I focus exclusively on the “strongly oppose” response category when examining predicted probabilities.¹³ In the

¹¹ Although the coefficient can be interpreted as an increase from category 1 to category 2, 3, or 4, from category 1 or 2 to category 3 or 4, and so on, I refer only to an increase in the odds of being in category 1, 2, or 3 compared to being in category 4, the category of most extreme opposition.

¹² I use the `SPost` command “`prvalue`” in Stata to estimate predicted probabilities, imputing group mean values for all variables other than those isolating the subsample.

¹³ To determine whether the difference in predicted probabilities is statistically significant, I rely on the delta method of estimating confidence intervals to determine whether the intervals of the two predicted probabilities overlap, which indicates that the probability difference is not statistically significant.

final section of my analysis, I run individual OLR models for selected subsamples to determine whether question wording had any differential effect by subgroup.¹⁴

¹⁴ For the predicted probabilities analysis and the subsample regression models, I limit my analysis to two categories for each variable, with the exception of region. For all other variables with more than two categories, I compare only the upper and lower extremes. The results of my subsample analysis can only be seen as suggestive of difference across subgroups. A more formal test would be to run full models with interaction effects for each variable of interest.

CHAPTER 4

RESULTS

The frequency distributions for all independent variables in my analysis can be seen in Table 1. From the table, we can see that women predominate in the sample, making up 55 percent of respondents. In addition, my data are not racially representative of the national population, with a greater proportion of my respondents being white. In terms of education, respondents with a high school degree or less constitute a plurality of the sample. Regionally, most respondents in the sample hail from the South, and the overall sample distribution closely resembles 2004 regional population parameters provided by the Bureau of the Census. A little over one-third of respondents in the analytic sample identify as born-again Christians, and 80 percent indicated that they attend religious services. The majority of respondents in my sample identify as Protestant, while only a small percentage identify as Jewish or Mormon.¹⁵ Politically, my sample is more conservative and more likely to identify as Republican than most national estimates of these variables.

Thus, it is clear that my sample deviates in many ways from being nationally representative. I do not believe that these differences compromise the validity of the subsequent analysis, however, as I do not intend for my analysis to generalize to the population in some representative manner. Rather, my interest lies in the psychology of survey response and the ways in which different subgroups are affected when presented with

¹⁵ Because so few respondents identify as Jewish or Mormon, I do not interpret the coefficients associated with these subgroups, nor do I include them in the subsequent comparison of predicted probabilities. Regardless, most research on sexual prejudice focuses on Protestants and Catholics, both of which are well-represented in my sample.

an alternative question wording. The exact distribution between groups is immaterial; what matters is that I have a sufficient number of respondents from each subgroup of interest to enable me to explore whether patterned differences in response exist between the abstract and concrete question wording.

Bivariate Analysis

Before proceeding with the multivariate analyses, it must first be demonstrated that concrete question wording significantly affected response. The bivariate crosstabulation between opinion of same-sex marriage and question wording appears in Table 2. The table demonstrates that respondents provided a different response when presented with the alternate wording, and the chi-square test of independence shows that the difference is statistically significant ($\chi^2=29.39$, $p<.001$). The distribution for both question wordings has the majority of respondents in the “strongly opposed” category, but in eyeing the discrepancy in terms of column percentages, it appears that, as hypothesized, respondents were more likely to be “strongly opposed” when presented with the concrete question wording. Of all the discrepancies by response category, the difference within the “strongly opposed” category is most pronounced, with an additional 3.8 percent falling in the category when presented with the alternate wording.

Alternate Explanations

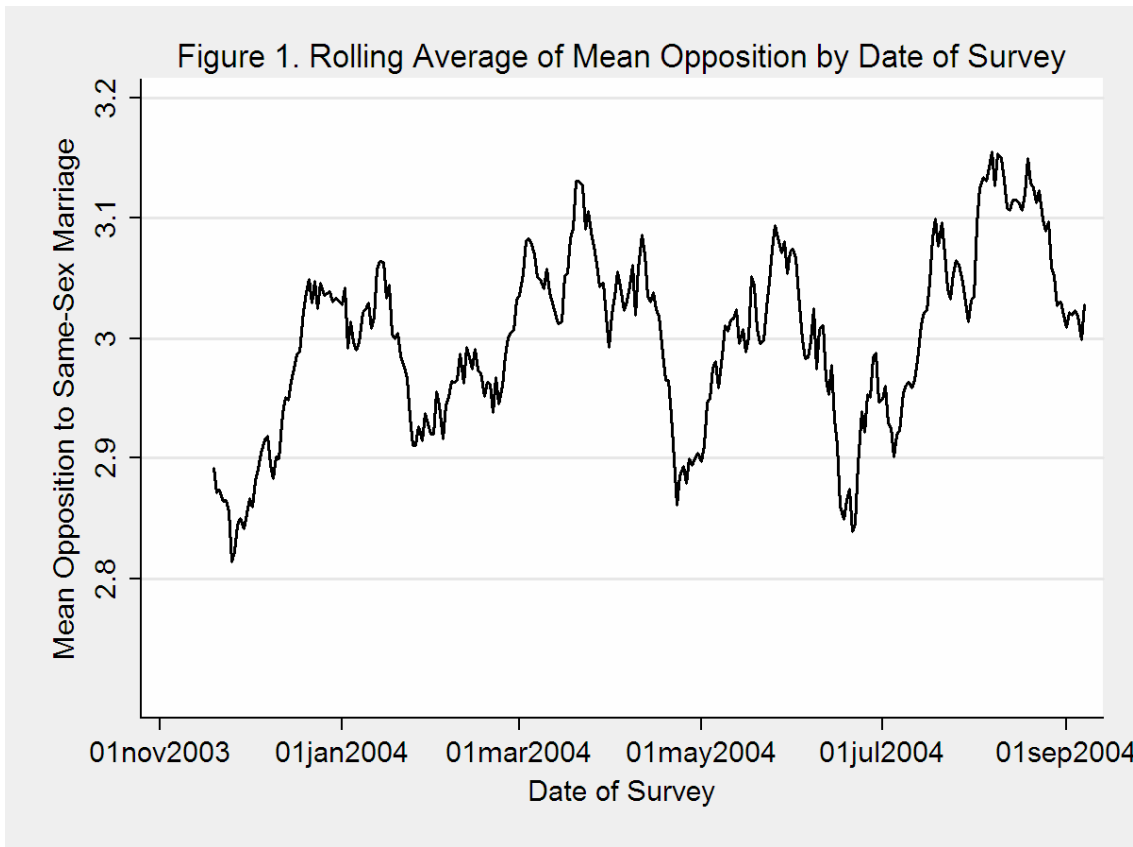
Before I proceed with my analysis and conclude that the observed disparity is truly the result of differential wording, I shall first briefly address three plausible alternate explanations: (1) the observed differences result from the fact that the two questions were asked at different points in time; (2) the observed differences are the result of context effects; and (3) the observed differences are the result of differential samples. I do not believe that

objections (2) and (3) are substantial enough to merit a lengthy discussion. Suffice it to say that I explored both possibilities and found only a negligible amount of evidence to support them.¹⁶ Alternate explanation (1), however, seems to be more plausible, and I shall thus devote considerable attention to it.

The first version of the same-sex marriage question was administered between November 19, 2003 and March 21, 2004, whereas the second question was administered between March 1, 2004 and September 7, 2004. Therefore, the questions were asked over different periods, with the exception of a brief period in March 2004 in which both questions were asked. As a result, it is possible that the observed differences between the two items on same-sex marriage are simply the result of the questions having been asked at different points in time.

A rolling average of the mean level of opposition to same-sex marriage can be seen below in Figure 1.

¹⁶ With regard to question context, despite the fact that the questions were asked over different intervals, both questions were preceded by the same question: an item that asked whether the respondent voted in 2000 and, if so, for whom. As for differential sampling, I ran chi-square tests comparing the two samples and found only minor differences. Moreover, the few differences that were found do not bias the results in a direction that would lead to higher opposition to the concrete wording.



Data points in the figure were calculated as a five-day moving average to reduce the noise associated with daily fluctuations. I imputed the values for all dates on which data were not collected by taking the average of the three previous and three successive days on which data were collected.¹⁷ From the graph, it is clear that, although there are various peaks and troughs, the data are more or less stable, with only a slight upward trend in opposition. To formally assess the trend for each wording, I conducted Spearman rank correlation tests for each question wording. The value of the rank coefficient for the first question wording was .0376 ($p < .01$), which suggests that the data show a slight positive trend. By contrast, the rank coefficient for the second question wording was statistically non-significant, suggesting that the data have no appreciable trend.

¹⁷ For example, to determine the value for November 27, 2003 (Thanksgiving), I pooled the data from November 24-26 and November 28-30 and took their mean.

To further explore the possibility that the observed discrepancy is the result of the time that each question was asked, I ran a series of chi-square tests to determine whether data significantly differ by month. In addition, I ran chi-square tests to evaluate whether opinion fluctuated significantly around important events related to same-sex marriage that took place at the national level over the course of the survey (see Appendix for a list of events). With regard to month of survey, all chi-square tests, with the exception of one (to be discussed below), were statistically non-significant. Likewise, none of the chi-square tests regarding fluctuation around key national events was significant.¹⁸

One chi-square test regarding the independence of data by month proved to be significant. Indeed, public opinion of same-sex marriage from August 2004 was significantly different from opinion in July ($\chi^2=7.93$, $p<.05$). To determine the direction and strength of the difference, I acquired a gamma statistic for the comparison between July and August. The gamma statistic was .0611 (ASE=.027), which suggests that opposition was only slightly higher in August than in July. In addition, I tested whether the distribution of opinion in August differed significantly from the distribution obtained during the period in March wherein both questions were asked; the test was non-significant, suggesting that the data in August were not significantly higher than the data collected in March.

In sum, it does not appear that the observed difference between the two questions is the result of differential timing. Only one month of the survey proved to be significantly different from other months. In addition, although the data were, for the most part, collected over different intervals, there was a 21-day period, from March 1, 2004 to March 21, 2004,

¹⁸ To test whether opinion fluctuated because of key national events, I compiled the data from ten days prior and ten days after each event, excluding the actual date of the event to ensure temporal ordering, and compared the results. For example, for the first same-sex marriage to take place in the United States, an event that occurred in Massachusetts on May 17, 2004, I compared the data from May 7, 2004 through May 16, 2004 to the data from May 18, 2004 through May 27, 2004.

wherein both questions were asked. During this period, the discrepancy between responses to the two questions was nearly identical to the observed discrepancy for the full samples.¹⁹ Nevertheless, because a chi-square test demonstrated that the August data differ significantly from July, I will include a control in my subsequent multivariate models for respondents who were surveyed in the month of August or September.²⁰

Multivariate Analysis

The bivariate crosstabulation does not control for other covariates that might have led to the observed disparity in response. To test whether question wording truly acts as a predictor of heightened opposition, I ran a multivariate ordinal logistic model including all covariates, the results of which appear in Table 3.

From the table, we can see that the coefficient for concrete wording is statistically significant and that the concrete question made respondents nearly 15 percent as likely to be in the “strongly oppose” category than in either “somewhat oppose,” “somewhat favor,” or “strongly favor.” Thus, even after controlling for a host of covariates known to predict opinion of same-sex marriage, concrete question wording persists as a strong predictor of opposition. Despite concerns about time of survey accounting for the observed disparity, the dummy variable for surveys conducted in August or September was non-significant, further demonstrating that the observed disparity was not a function of the questions being asked over different intervals.

¹⁹ The divide between levels of “strong” opposition during the 21-day period was 3.52 percent, and the discrepancy for the full sample of both questions was 3.83 percent. To assess whether the difference over the 21-day period was the result of differential sampling, I conducted a series of chi-square tests on key sociodemographic characteristics, none of which reached the level of statistical significance.

²⁰ The number of respondents who were surveyed in either August or September was 2,706, or 16.91 percent of the sample.

To determine whether the addition of the question wording variable significantly improves the model, I ran a likelihood-ratio test (not shown in table) comparing a model without the question wording and month of survey variables to the model shown in Table 3; the test was statistically significant ($\chi^2=25.38$, $p<.001$), demonstrating that the addition of the two variables significantly improves the quality of the model. In addition, because likelihood-ratio tests do not take into account the additional variables in the model, I compared the Bayesian Information Criteria (BIC) of the two models. The difference between the BICs was larger than 7, indicating that there is strong evidence to support the inclusion of the wording variable.

As for the other variables in the model, the results were consistent with most research on opinions of same-sex marriage and sexual prejudice (Herek 1994; Yang 1997). Women were 42 percent less likely to be in a higher oppositional category than were men. Likewise, age proved to be a significant predictor of opposition: an additional 10 years of age corresponded to a 26 percent increase in the odds of higher opposition.

Perhaps the most unexpected finding from the full-model regression is that black respondents were substantially more likely than whites to be in a higher oppositional category. As aforementioned, research on the relationship between race and sexual prejudice has been quite inconsistent. Some research has shown that blacks are more intolerant of homosexuality (Levitt and Klassen 1974), while other research has found the opposite (Schneider and Lewis 1984). Lewis (2003) found that, although less tolerant of homosexuality, black respondents were moderately more supportive of gay civil liberties than were whites. My data show just the opposite. Indeed, black respondents in my sample were 69 percent more likely to be more opposed to same-sex marriage than were white

respondents. This finding adds yet another complication to the already muddled understanding of the relationship between race and gay rights.

Consistent with previous research, however, were the results for education and region. The effect of education was monotonic, with each additional educational attainment leading to a decrease in likelihood of higher opposition; the most significant decline in odds came for respondents with a graduate or professional degree, who were 65 percent less likely to be in a higher oppositional category than were respondents with a high school degree or less. Regionally, respondents from the Midwest and South were substantially more likely to provide a more opposed response than were respondents from the Northeast, while respondents from the West were not significantly different from respondents in the Northeast. Southern respondents were 29 percent more likely than Northeasterners to be in a higher oppositional category, and respondents from the Midwest were 16 percent more likely than Northeastern respondents to provide a more opposed response.

All of the results for the religious variables were consistent with findings in previous research. Born-again Christians were more than two times as likely as non-born-again Christians to be in a higher oppositional category. Likewise, church attendance proved to be a strong predictor of opposition, with the greatest opposition coming from respondents who attend religious services once a week or more. Frequent churchgoers were more than twice as likely to provide a more opposed response than were respondents who indicated that they never attend religious services. Differences by religious affiliation were less pronounced, with Catholics not differing significantly from Protestants, a finding which is probably due to the lack of distinction among Protestant denominations. Respondents claiming no denomination were substantially less likely than Protestants to give a more opposed response.

To test whether the religiously non-affiliated also differed from Catholics, I rotated the denominational reference group (results not shown). Respondents claiming no religious affiliation were also significantly less likely to provide a more opposed response than were Catholics.

Political ideology and party affiliation also produced results consistent with previous research. Political conservatives were significantly more likely to provide a more negative response than either moderates or liberals, the latter being nearly 80 percent less likely to indicate higher opposition. Likewise, Republicans were more likely to report higher opposition than either Democrats or political Independents.

Lastly, the variable controlling for the month of the survey was statistically non-significant, further dispelling the alternate explanation that the response difference was due to the questions being asked over different intervals. The results from the multivariate regression attest to the observed disparity resulting from alternate question wording, to the extent that respondents to the concrete question wording were 15 percent more likely to provide a more oppositional response than were respondents to the abstract wording.

Predicted Probabilities

Using the coefficients derived from the separate models by question wording (results not shown), I calculated predicted probabilities for selected subgroups to determine whether the concrete question wording affected respondents disproportionately. The predicted probabilities are seen below in Table 4.

Starting with gender, we can see that the difference in predicted probabilities is not as pronounced as would be expected given previous research on gender and sexual prejudice; the predicted probability for women was .052 higher for the concrete wording, while the

probability for men was .049 higher. Although the difference is not large, this result clearly runs counter to my hypothesis. The reason for this result is unclear. One possible explanation deals with the order in which the concrete terms were provided to respondents: “two women” always came second. Previous research in survey response has shown that recency effects, the tendency for respondents to choose options at the end of a list, are common in telephone surveys because the mode is entirely auditory (Krosnick and Alwin 1987; Tourangeau, Rips, and Rasinski 2000), and it is possible that the order of the question wording affected visualization. Moreover, previous research has shown that there are no differences in attitudes of men and women toward lesbians (Kerns and Fine 1994), which would explain why there was so little difference between the change in predicted probability for men and women. Although recency effects are most often associated with the order of response categories, it is possible that these effects apply to the visualization process as well.

Probability differences by educational attainment correspond to expectation. The predicted probability of strong opposition for respondents with a high school degree or less increased by .076 when given the concrete wording. The difference in probability for respondents with a professional or graduate degree was non-significant.

Similarly, regional differences were as hypothesized. Predicted probabilities for respondents from the Northeast and the West were not significantly different by question wording. By contrast, respondents from the Midwest and South had markedly higher probability of being “strongly opposed.” The probability of strong opposition for Southern respondents was .057 higher, and the probability for Midwestern respondents was .082 higher.

The predicted probability differences for born-again Christians and those not identifying as born-again were both significant, though born-again Christians experienced a slightly larger increase. Although the increases in probability were comparable—.045 for born-again Christians, .040 for other respondents—the group associated with heightened sexual prejudice saw a higher increase, as expected. Moreover, it should be noted that the increase in probability for born-again Christians is made all the more significant because the probability of strong opposition was already extremely high to begin with (.771 with the abstract wording). Thus, although the two groups saw a similar increase, born-again Christians moved from an already elevated probability to an even higher probability, with 8 in 10 born-again Christians being likely to give a response of “strongly opposed” when provided with the question employing concrete terminology.

Differences by frequency of church attendance also matched expectation. The predicted probability of strong opposition among respondents who indicated that they never attend church did not differ significantly by question wording. By contrast, the concrete wording led to a .039 increase in predicted probability for frequent church attendees. This increase in probability, as in the case of born-again Christians, built on an already high probability of strong opposition.

By religious affiliation, Catholics and Protestants saw near-equal increases in predicted probability of strong opposition, while the non-affiliated saw no appreciable increase. The predicted probability for Catholics rose by .054 when presented with the concrete question wording, and the probability for Protestant respondents increased by .056. Although it is strange that Catholics and Protestants increased by a similar margin, this is likely due once again to the lack of distinction among Protestant denominations. Research in

the sociology of religion shows that, while Evangelical Protestants are markedly more conservative than other Christians, mainline Protestants are scarcely different from Catholics in terms of political liberalism and tolerance for civil liberties (Finlay and Walther 2003; Olson, Cadge, and Harrison 2006).

Politically, the results conformed to expectation. The predicted probability of strong opposition for political conservatives rose by .035 when presented with the concrete wording, while political liberals were unaffected. Likewise, the concrete wording led Republicans to be substantially more likely—an increase of .058 in predicted probability—to strongly oppose same-sex marriage. Respondents identifying as Democrats experienced no significant change in probability.

Subsample Regression Models

Comparing predicted probabilities of strong opposition demonstrated that certain subgroups were more likely to be strongly opposed to same-sex marriage by question wording, but it remains to be demonstrated that the change in wording led to a general increase in opposition by subgroup. To test this hypothesis, I ran individual regression models, including only respondents of a given sociodemographic group, to determine whether question wording had an effect on response. As in the full-sample model, all subsample models control for surveys completed in either August or September. The results for the subsample regressions appear below in Table 5.

From the table, we can see that question wording was a significant predictor of opposition among both men and women, but the effect was larger for men. When presented with the wording that employed concrete terminology, men were 19 percent more likely to provide a more opposed response, while women were 12 percent more likely. In contrast to

the predicted probabilities, this finding conforms to expectations. Thus, we can conclude that, although not necessarily more likely to provide a “strongly opposed” response, men were more likely to report higher opposition than were women when presented with the concrete question.

In terms of educational attainment, respondents with a high school degree or less were 35 percent more likely to be more opposed to same-sex marriage when receiving the question with concrete terminology. Respondents with a graduate or professional degree were not significantly affected by the change in wording.

Regionally, only respondents from the Midwest and the South were significantly affected by the concrete wording. Respondents from the Midwest were 31 percent more likely to be in a higher oppositional category when provided the alternate wording, while the odds that a Southern respondent would be in a higher category increased by 18 percent.

The religious subsamples once again conformed to expectations. Born-again Christians were 19 percent more likely to provide a more opposed response when given the concrete wording. By contrast, respondents who did not identify as “born-again” saw a more modest increase (13 percent) in likelihood of reporting higher opposition. Respondents who reported that they do not attend church were not significantly affected by the change in wording, whereas the odds that a frequent churchgoer would be in a higher category were 18 percent higher when provided the concrete wording. In terms of religious affiliation, only Protestants were significantly more likely to be in a higher oppositional category; neither Catholics nor the religiously non-affiliated experienced any increase in odds. For Protestants, the increase was nearly 23 percent in the likelihood of reporting higher opposition to same-sex marriage.

Finally, the effect of question wording was not equally distributed by political ideology or party affiliation. Although liberals were not significantly affected by the concrete wording, conservatives were 17 percent more likely to be in a higher response category. Similarly, Democrats were unaffected by the change in wording, but the odds of a more oppositional response increased by 26 percent for Republicans when provided the concrete wording.

CHAPTER 5

DISCUSSION AND CONCLUSION

In this paper, I demonstrate that the terminology employed in question wording affects response in a most peculiar way. I compare the responses to two similarly worded questions from the 2004 NAES dealing with same-sex marriage, with the only exception between the questions being the words used to define same-sex couples. The question that employed more concrete terms—“two men” and “two women”—as opposed to abstracted roles—“gays” and “lesbians”—provoked more opposition from respondents, but the differences were not evenly distributed. Instead, the question wording disproportionately affected sociodemographic groups associated with higher levels of sexual prejudice.

Drawing upon research in cognitive psychology and linguistics, I argue that the observed disparity in response to the two questions resulted from the greater tendency for concrete language to evoke visualization. Because the concrete wording was more likely to elicit a mental image, it was also more likely to provoke respondents who would be more likely to find the image objectionable to provide a more oppositional response. The data support my argument.

Although the effects were by no means earth-shattering, the phenomenon is nonetheless intriguing. Previous analyses of question wording effects have focused exclusively on the denotations or connotations of different words. My analysis expands the purview to include the mental imagery evoked by wording. Survey designers should take

note to consider the potential for visualization to affect response and should seek to tailor their survey instruments to minimize its impact.

My analysis confirms the idea that animates the political correctness movement: language affects understanding. For example, in confronting the importance of language with regard to sexual prejudice, the American Psychological Association issued a report devoted to avoiding heterosexual bias in language (1991). Although the report does not advise one way or the other regarding using the terms “two men” or “two women,” it does advise its readers to abstain from using the word “homosexual,” which emphasizes the sexual component of gay lifestyle, opting instead for “gay” and “lesbian,” which incorporate the social aspects as well. The lexicographer Theodore Bernstein (1999) tells us why the term “gay” is to be preferred: it originated in the gay community and is the preferred term among members of the community. Thus, it is hardly surprising that the use of the preferred terminology would be less likely to provoke survey respondents into providing a more oppositional response.

In addition, my research adds to the growing body of research exploring the role of disgust sensitivity in moral valuation. A powerful emotion, disgust circumscribes the boundaries of normative behavior. In terms of sexuality, the expression of disgust is often used to devalue any non-heterosexual lifestyle. Previous research in this area has demonstrated the varying degree to which disgust informs moral valuation, with political conservatives being most likely to view disgust as relevant, particularly for sociomoral issues like same-sex marriage (Haidt and Graham 2007; Inbar et al. in progress). I build on this research by showing that disgust can be triggered by language. Whether conscious or subconscious, the effect of concrete terminology provoked survey respondents to provide a

more oppositional response, and the effect was strongest among sociodemographic groups associated with heightened sexual prejudice.

It is important to take note of several limitations to this study. First, although the data conform to my hypotheses with regard to visualization and disgust, because my data were taken from a secondary dataset, the effect can only be inferred. I was unable to interact with respondents to uncover the cognitive processes in the response process. Rather, they could only be inferred from the data. Future research should look to make use of the promising development of cognitive interviewing (Willis 2004) to determine the extent to which survey respondents report mental imagery and the ways in which the images affect their response.

One alternative explanation for the observed patterned response differences—and one that I am unable to test directly—is that the terms “men” and “women” could resonate more strongly among certain language communities. The burgeoning field of sociolinguistics has documented at great length the ways in which different communities employ different manners of speech (Romaine 2000). Moreover, research has shown that different political communities, or “microcultures,” employ competing repertoires when deliberating political issues (Perrin 2005). Thus, it is entirely possible that the terms “men” and “women” more strongly resonated with some respondents more than with others, particularly to the extent that the communities use the terms with reference to same-sex marriage.

In this line of thinking, I am reminded of the constant refrain among many opponents of same-sex marriage: marriage is between *one man* and *one woman*, a sentiment echoed by President Bush in a number of his speeches on the subject (e.g., CNN.com). Because opponents of same-sex marriage are more likely to hear and presumably use this linguistic construction when discussing or thinking about same-sex marriage, it is possible that the

question wording either consciously or unconsciously triggered a connection to it, thus provoking respondents to report greater opposition. Without direct contact with respondents, I am unable to determine which explanation applies, but I believe that there is sufficient evidence to support the argument I make regarding the role of visualization.

The second limitation of this study is that the data on religious affiliation were not delineated enough to explore the finer distinctions by denomination, particularly among Protestant respondents. Although I suspect that conservative Protestants are likely to be affected by the use of concrete terminology with regard to same-sex marriage, the 2004 NAES data do not permit a formal test of the hypothesis. Moreover, my measure of religious belief—whether a respondent identified as born-again—acted only as a proxy measure. Future research on this phenomenon should seek to acquire more comprehensive measures of religious belonging and belief to explore whether the phenomenon conforms to expectation.

Third, because I did not collect the data nor design the questionnaire myself, I was unable to determine whether recency effects came into play in the visualization process. With telephone interviews, research has shown that respondents have a tendency to select response categories that are listed later (Krosnick and Alwin 1987), but this research looked only at the ordering of response categories. Future research should look to explore whether recency effects—or primacy effects, in the case of self-administered surveys—also apply to visualization and whether this has any effect on subsequent response.

Finally, my data did not include any measure of respondents' attitudes toward gender roles, which previous research has shown to correlate strongly with attitudes toward gay men and lesbians (Kerns and Fine 1994). It would be interesting to see whether adherence to traditional gender roles, particularly among male respondents, significantly affects the

interpretation of imagery. Future research should aim to acquire these data to determine what effect, if any, they have on the reaction to visualization.

In documenting the phenomenon of the effect of language on sexual prejudice, I have shown what many political consultants already know to be true: language matters. Perhaps chief among them is famed political consultant Frank Luntz, who co-authored the “Contract with America” that helped Republicans reclaim both houses of Congress in 1994. Revered by the Right and reviled by the Left, Luntz (2007) argues that “it’s not what you say, it’s what people hear” (267). Indeed, and to that, I would add: it’s also what people see.

Appendix

Key Events in the Same-Sex Marriage Debate

November 18, 2003 – Massachusetts Supreme Judicial Court decides *Goodridge v. Department of Public Health*, 798 N.E.2d 941 (Mass. 2003), which rules that the exclusion of “qualified same-sex couples from access to civil marriage violates Massachusetts law” (Massachusetts Supreme Court website).

February 4, 2004 – Massachusetts Supreme Judicial Court clarifies its order to the legislature to allow same-sex marriages, contending that civil unions will not suffice (Cohen 2004).

February 12, 2004 – Gavin Newsom, newly-elected mayor of San Francisco, issues a directive to the city-county clerk to issue marriage certificates to same-sex couples. Marriage certificates are distributed until March 11, 2004 and are eventually nullified by the California Supreme Court (LexisNexis).

February 24, 2004 – President Bush announces his support for an amendment to the Constitution that would ban same-sex marriage (CNN.com).

May 17, 2004 – The first-ever legal same-sex marriage takes place in Massachusetts.

Table 1. Descriptive Statistics for Independent Variables (N=16,003)

Gender	N	Percent
Female	8,821	55.1%
Male	7,182	44.9%
Race		
White	13,865	86.6%
Black	1,251	7.8%
Other	887	5.5%
Education		
HS graduate or less	5,164	32.3%
Some college	4,584	28.6%
Bachelor's degree	3,935	24.6%
Graduate or professional degree	2,320	14.5%
Region		
Northeast	3,018	18.9%
Midwest	4,019	25.1%
South	5,639	35.2%
West	3,327	20.8%
Born-again Christian		
No	9,772	61.1%
Yes	6,231	38.9%
Frequency of Service Attendance		
Never	2,879	18.0%
Infrequent	6,253	39.1%
Weekly or more	6,871	42.9%
Religious Affiliation		
Protestant	9,594	60.0%
Catholic	4,195	26.2%
Mormon	275	1.7%
Jewish	369	2.3%
No affiliation	1,570	9.8%
Political Ideology		
Conservative	6,420	40.1%
Moderate	5,884	36.7%
Liberal	3,699	23.1%
Party Affiliation		
Republican	5,440	34.0%
Democrat	5,283	33.0%
Independent	4,393	27.5%
Other	887	5.5%
Question Wording		
Abstract	6,643	41.5%
Concrete	9,360	58.5%

Table 2. Crosstabulation of Opinion of Same-Sex Marriage by Question Wording

	Abstract Wording	Concrete Wording	Total
Strongly Favor	1,265 (19.0)	1,746 (18.7)	3,011 (18.8)
Somewhat Favor	1,164 (17.5)	1,402 (15.0)	2,566 (16.0)
Somewhat Oppose	741 (11.2)	960 (10.3)	1,701 (10.6)
Strongly Oppose	3,473 (52.3)	5,252 (56.1)	8,725 (54.5)
Total	6,643 (100.0)	9,360 (100.0)	16,003 (100.0)

$\chi^2 = 29.39, p < .001$

Column percentages in parentheses.

Table 3. Multivariate OLR Model of Opposition to Same-Sex Marriage, Reported as Odds Ratios (N=16,003)

Female	0.582***
Age	1.024***
Race^a	
Black	1.699***
Other	1.492***
Education^b	
Some college	0.626***
Bachelor's degree	0.436***
Graduate or professional degree	0.351***
Region^c	
Midwest	1.157**
South	1.286***
West	0.948
Born-again Christian	2.345***
Frequency of Service Attendance^d	
Infrequent	1.179**
Weekly or more	2.224***
Religious Affiliation^e	
Catholic	0.937
Mormon	2.357***
Jewish	0.497***
No affiliation	0.694***
Political Ideology^f	
Moderate	0.460***
Liberal	0.218***
Party Affiliation^g	
Democrat	0.450***
Independent	0.578***
Other	0.623***
Concrete Wording	1.148***
August or after	1.090
Model χ^2	6638.87***

*** p<.001; ** p<.01; * p<.05

a Reference category is white.

b Reference category is HS graduate or less.

c Reference category is Northeast.

d Reference category is never.

e Reference category is Protestant.

f Reference category is conservative.

g Reference category is Republican.

Table 4. Predicted Probabilities of Strong Opposition to Same-Sex Marriage by Question Wording

	Abstract Wording	Concrete Wording	Difference
Gender			
Female	0.481	0.533	0.052*
Male	0.590	0.640	0.049*
Education			
HS graduate or less	0.670	0.746	0.076*
Graduate or professional degree	0.339	0.374	0.035
Region			
Northeast	0.418	0.439	0.022
Midwest	0.529	0.612	0.082*
South	0.637	0.693	0.057*
West	0.446	0.469	0.024
Born-again Christian			
No	0.360	0.399	0.040*
Yes	0.771	0.816	0.045*
Frequency of Service Attendance			
Never	0.270	0.273	0.003
Weekly or more	0.738	0.777	0.039*
Religious Affiliation			
No affiliation	0.203	0.191	-0.012
Catholic	0.443	0.497	0.054*
Protestant	0.636	0.692	0.056*
Political Ideology			
Liberal	0.200	0.220	0.020
Conservative	0.783	0.818	0.035*
Party Affiliation			
Democrat	0.369	0.398	0.029
Republican	0.738	0.796	0.058*

* indicates that 95% confidence intervals do not overlap.

Table 5. Effect of Question Wording for Selected Subsamples, Reported as Odds Ratios

Gender	
Female	1.116*
Male	1.191***
Education	
HS graduate or less	1.350***
Graduate or professional degree	ns
Region	
Northeast	ns
Midwest	1.306***
South	1.181**
West	ns
Born-again Christian	
No	1.133**
Yes	1.191**
Frequency of Service Attendance	
Never	ns
Weekly or more	1.183**
Religious Affiliation	
No Affiliation	ns
Catholic	ns
Protestant	1.228***
Political Ideology	
Liberal	ns
Conservative	1.168*
Party Affiliation	
Democrat	ns
Republican	1.259***

*** p<.001; ** p<.01; * p<.05; ns non-significant

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