



Etiology and Attitudes: Beliefs About the Origins of Homosexuality and Their Implications for Public Policy

L. Marvin Overby PhD

To cite this article: L. Marvin Overby PhD (2014) Etiology and Attitudes: Beliefs About the Origins of Homosexuality and Their Implications for Public Policy, Journal of Homosexuality, 61:4, 568-587, DOI: [10.1080/00918369.2013.806175](https://doi.org/10.1080/00918369.2013.806175)

To link to this article: <http://dx.doi.org/10.1080/00918369.2013.806175>



Accepted author version posted online: 10 Dec 2013.
Published online: 10 Dec 2013.



[Submit your article to this journal](#)



Article views: 1326



[View related articles](#)



[View Crossmark data](#)



Citing articles: 3 [View citing articles](#)

Etiology and Attitudes: Beliefs About the Origins of Homosexuality and Their Implications for Public Policy

L. MARVIN OVERBY, PhD

Department of Political Science, University of Missouri, Columbia, Missouri, USA

Using survey data from the 2008 election cycle, this article updates and extends analysis of public attitudes regarding various aspects of homosexuality. Continued expansion of public belief in a biological root to homosexuality is found, and variations in such opinions are explored. Public attitudes toward the emerging issue of gay adoption is also examined, finding both similarities with and important differences from attitudes toward same-sex civil unions, although both are profoundly influenced by underlying attitudes regarding the causes of homosexuality.

KEYWORDS *adoption, heritability, marriage*

Research suggests that sexual identities (including gender identity, gender-role behavior, and sexual orientation) develop in much the same ways among children of lesbian mothers as they do among children of heterosexual parent. (American Psychological Association, 2004, para. 3)

The research shows clearly that children do best when raised by a married mother and father and that the homosexual lifestyle is unstable. Research specifically on homosexual parents has been fraught with methodological problems, but such research as there is nevertheless does show differences in the children of homosexuals that should raise concern. (Sprigg & Dailey, 2004, p. vii)

The emergence of adoption by gay individuals and couples as a contentious matter of public policy in the United States raises fundamental questions regarding the root causes of homosexuality. For those who view

Address correspondence to L. Marvin Overby, Department of Political Science, University of Missouri, Columbia, MO 65211–6030, USA. E-mail: overby@missouri.edu

homosexuality as a form of learned behavior, same-sex adoptions are likely to be problematic, especially among those with negative attitudes regarding homosexuality. Conversely, for those who see homosexuality as principally a matter of biology, same-sex adoptions are likely to be more acceptable—even among those who might disapprove of homosexuality—because there is little chance sexual orientation could be “transmitted” by adoptive parents. In this article, I update and expand our understanding of these two related issues. Using data collected during the 2008 presidential campaign season, I update the evolving American understanding of the causes of homosexuality, as well as exploring the correlates of variation in this opinion. Then, using opinion regarding the etiology of homosexuality as an independent variable in multivariate models demonstrate its profound impact on public attitudes regarding adoption by gays and lesbians, as well as attitudes toward gay civil unions¹ and vote choice in the 2008 presidential election, as points of comparison. Even after controlling for a host of other powerful predictors of public opinion, attitudes regarding the heritability of homosexuality emerge as the single best predictor of attitudes toward gay adoption. Together, the findings presented here (a) provide a valuable updated snap-shot of developing American attitudes toward homosexuality, (b) reaffirm the significant gulf between those who attribute homosexuality to (largely immutable) biological or genetic factors and those who view it (largely) as a voluntary lifestyle choice, and (c) reiterate how this attributional distinction fundamentally conditions a variety of other relevant political attitudes. In the course of these explorations, I also extend previous research with evidence that fundamental character traits have only marginal associations with attitudes toward homosexual etiology and positions on gay rights policy matters, and that American public attitudes toward gay adoption are neither as polarized as are those regarding gay marriage, nor as monotonically driven by religious attitudes, which suggest the possibility of compromise and movement on this issue (Schwartz, 2010).

PREVIOUS RESEARCH

In recent years, issues related to the situation of homosexuals in America and their rights within American society have been the foci of considerable public debate and academic enquiry. One strand of that enquiry has centered on public perceptions of the cause or causes of homosexuality. As researchers in the medical, genetics, and psychological fields have searched for evidence of a biological predisposition toward same-sex attraction, researchers in political science have explored the ways in which causal attribution influences public attitudes. Although conclusive evidence of a “gay gene” remains elusive (Mustanski et al., 2005), research has uncovered much circumstantial evidence of a biological root to homosexuality through examination of

such disparate attributes as hair whorls (Klar, 2004), digit lengths (Williams et al., 2000), handedness (Lippa, 2003), hypothalamus reactions (LeVay, 1993), twin behavior (Långström, Rahman, Carlström, & Lichtenstein, 2008), and reaction to pheromones (Savic, Berglund, & Lindström, 2005), in fruit flies (Grosjean, Grillet, Augustin, Ferveur, & Featherstone, 2008) and sheep (Roselli & Stormshak, 2009), as well as humans. As this scientific evidence has become disseminated in the public, studies of mass opinion have noted a significant shift in perceptions regarding the causes of homosexuality, with the percentage attributing it to underlying biological factors more than tripling over the past three decades (Markel & Joslyn, 2008, p. 302).

Such a shift is important because students of American politics have also noted that those who perceive homosexuality to be based on genetics tend to display a warmer affect toward gays and lesbians and to be more supportive of expanding homosexual rights, as attribution theory would suggest (Heider, 1944, 1958; Weiner 1979, 1985).² Individuals who are perceived as having physical or achievement stigmas that are outside of their control are generally evaluated more positively than those who are seen as either choosing or contributing to their stigma. Using National Election Study data from the early 1990s, Wilcox and Wolpert (2000) demonstrated that attitudes about the causes of homosexuality significantly impacted general public attitudes toward gays and lesbians as measured by feeling thermometers, as well support for anti-discrimination policies in employment and homosexual service in the military (but not toward legalizing adoption by gay and lesbian couples). As expected, those who believe homosexuality to be a chosen, acquired, or learned behavior were far less supportive than those who regard homosexuality as rooted in biological factors. Similarly, using data from the 1996 election cycle, Overby and Barth (2002) found that beliefs regarding the etiology of homosexuality were the single strongest predictor of feeling thermometer assessments of gays and lesbians, even after controlling for a battery of other political, social, and demographic characteristics, including contact with homosexuals. For similar results see Tygart (2000) on support for gay civil unions; and Wood and Bartkowski (2004), who used data from in-person surveys to demonstrate the impact of causal attributes on gay stereotyping and a scale of gay rights issues.

Recently, Haider-Markel, and Joslyn (2008) employed data from a variety of Pew and Gallup® surveys to examine not just the impacts of attributional differences but also the factors associated with generating those differences. Their study is unusual in that it is the first to flip the models, examining the causes of public attitudes toward gay etiology. They find that those who are better educated, women, older, and have gay friends were robustly (and Whites were marginally) more likely to view homosexuality as having genetics roots; whereas more religious respondents, those who were Protestants, those who are born again, and conservatives were robustly (and those with

children marginally) more likely to view homosexuality as a lifestyle choice. When using attributions as a right-hand side, independent variable, they found them to be “by far the strongest predictors” of both affect toward homosexuals and support for same-sex marriage.

In this study, I extend previous research in two important ways. First, I examine the emerging issue of gay adoption. Because adoption is often a private process, and because state regulations of adoption are a true hodge-podge of differing and often conflicting policies, the national debate over adoption by gays and lesbians has been more muted than that over gay marriage. But, it is certainly a rising issue on which there is considerable difference of opinion and one with potentially important implications not just for many thousands of children but also for public perceptions of gays and lesbians (Ruggeri, 2008). Indeed, over the past decade or so, a number of gay rights groups have emphasized families as the “face” gay America (Barth & Parry, 2009).³ Although this strategy has prompted criticism from various quarters within the gay rights movement (see, among others, Goldstein 2002; Harris 1997), greater numbers of openly gay parents—including adoptive parents—would presumably further the goal of “normalizing” the public view of homosexuals and homosexuality.

Although currently only one state, Florida, explicitly prohibits gay adoption,⁴ numerous other states do so indirectly by limiting adoptions to married couples. In addition, there are on-going efforts in a number of state legislatures to limit or prohibit gay adoptions (Ruggeri, 2008). On the other hand, there are also some countervailing pressures, including *de facto* recognition in a number of places,⁵ and a decentralized judicial system that permits gay prospective parent to target sympathetic judges (Mucciaroni, 2008). Romero, Baumle, Gadgett, and Gates (2007) estimated that some 270,000 children reside in homes headed by same-sex couples, that 20% of same-sex couples are currently raising children, and that > 65,000 children have been adopted by a gay or lesbian parent or parents. With a national foster care population of > 500,000, advocates of gay rights argue that adoption by gays and lesbians would be in the best interest of the children, especially because groups such as the American Academy of Pediatrics (2002) and the American Psychological Association (2004) concluded that children are neither harmed nor disadvantaged by being reared by homosexual parents.

To date there has been little plumbing of public attitudes toward gay adoption (but, see Wilcox & Wolpert, 2000; Schwartz, 2010). I examine it in some detail here, focusing both on how well it maps onto attitudes toward same-sex marriage and how it is affected, if at all, by attitudes toward the etiology of homosexuality.⁶ My initial expectation is that there will be considerable similarity between opinions regarding adoption and civil unions, but that the former may be less polarized because considerations about the welfare of children up for adoption may counterbalance some of the

usual public antipathy toward gay civil rights.⁷ Similarly, because belief in a biological basis to homosexuality should temper concerns that adoptive children could be “seduced” into a gay sexual orientation, I expect that an attributional variable should emerge as a significant predictor of attitudes toward gay adoption in multivariate analysis, probably even stronger than its relation with same-sex marriage.

Second, I extend limited analysis of the effects of personality traits on political attitudes. Although the Five Factor Model (also known by the acronym OCEAN [openness, conscientiousness, extraversion, agreeableness, and neuroticism]) has been used by psychologists to predict a broad range of attitudes (e.g., musical preferences) and behaviors (e.g., smile frequency), it has only recently been employed to help account for political attitudes such as ideology (e.g., see Jost, Federico, & Napier, 2009; Jost, Glaser, Kruglanski, & Sulloway, 2003; see also Carney, Jost, Gosling, & Potter, 2008) and political behaviors such as vote choice (Gerber, Huber, Raso, & Ha, n.d.; Mondak, 2010; Mondak & Halperin, 2008; Mondak, Hibbing, Canache, Seligson, & Anderson, 2010). Although analysis of trait effects on specific policy attitudes is quite new, I anticipate that when it comes to deeply held convictions related to fundamental concerns such as the nature of sexual identity and the public policy issues that flow from them core personality traits—especially openness and conscientiousness—may exert measureable influences even after controlling for a variety of other canonical factors such as a partisan predisposition, ideology, and religiosity. As Mondak and Halperin noted, previous research has shown that personality traits have “mattered for every aspect of citizen politics” (p. 361) that has been examined, so it seems reasonable to expect they should exert an influence on attitudes regarding gay rights as well.

DATA AND METHOD

Data for this study come from the 2007 to 2008 Cooperative Campaign Analysis Project (CCAP). The CCAP utilizes an Internet-based, opt-in, panel survey of registered voters administered by YouGov/Polimetrix[®] to create a matched sample of individuals interviewed at least once during December 2007 and January, March, September, October, and November 2008. Although Internet-based surveys of this sort remain rather novel, they are gaining in use and acceptance as homes with Internet access approach equity with homes that have telephone land lines and response rates for traditional telephone surveys decline (due to factors such as increased cell phone usage, caller identification, and voice mail). Recent years have seen a growth in publications using data from such Internet-based surveys to explore a wide variety of areas including the effects of gender, race, and age in the 2008 Democratic primaries (Jackman & Vavreck, 2010), public

attitudes toward trade policy (Guisinger, 2009), citizen attitudes toward direct democracy (Tolbert, Bowen, & Donovan, 2009), environmental policy attitudes (Konisky, Milyo, & Richardson, 2008), beliefs regarding voter fraud (Ansolabehere & Persily, 2008), and the impact of casualties on public support for war (Gartner, 2008).

The principal investigators for the 2008 CCAP have provided a full description of the study's sampling technique in Jackman and Vavreck (2010), a version of which may be found at web.me.com/vavreck/Lynn_Vavreck/Publications_files/JackmanVavreck2009.pdf. In addition, Douglas Rivers, one of the developers of this sampling strategy provides a more detailed but still accessible rationale at the YouGov/Polimetrix Web site: polimetrix.com/documents/YGPolimetrixSampleMatching.pdf. Other pages on the YouGov/Polimetrix site provide information regarding the large number of corporations and political organizations moving to Internet-based surveys.

In all, the CCAP involved some 20,000 respondents, although as a cooperative study involving a number of research teams, not all questions were asked in all waves or of all respondents. In this study, I take advantage of a number of demographic profile questions asked of all respondents, but the dependent variables and personality trait questions used here (as well as several specific independent variables) were asked only of certain participants in the early fall waves (~1,800), which significantly reduces sample size. Dependent variables in the analyses presented later include belief about the cause of homosexuality, and attitudes regarding gay adoption and civil unions for same-sex couples. The attribution question was worded as follows: "Consider the following statement: 'Homosexuality is primarily determined by a person's biological make-up and is not a lifestyle choice'. In general, do you strongly agree, agree, disagree, or strongly disagree with this statement."⁸ Responses were coded along a 5-point scale, with higher values representing greater belief that homosexuality is a lifestyle choice. Those who volunteered that they did not know were coded in a middle category.⁹ The adoption question was worded: "In general do you strongly favor, favor, oppose, or strongly oppose allowing gays and lesbians to adopt children?"¹⁰ Once again, responses were coded along a 5-point scale, with those volunteering that they did not know coded in the middle category; higher values indicate opposition to gay adoption. The civil unions question was worded ("Do you favor allowing civil unions for gay and lesbian couples? These would give them many of the same rights as married couples.") and coded similarly. Because these variables are coded on an ordered scale, my analysis relies primarily on ordered logistic regression estimators. However, the principal findings reported later are stable, and variables of interest behave in substantively similar manners when the equations are estimated using ordinary least squares.

Independent variables used in the analyses that follow include a variety of familiar demographic, social, and political measures, including race (coded 0 for Caucasians and 1 for all others), gender (coded 0 for men and 1 for women), age, marital status (coded 0 for those who described themselves as married, separated, divorced, or widowed and as 1 for those single or in a “domestic partnership”), education, family income, affiliation with a Protestant denomination, self-identification as a born-again Christian, self-reported importance of religion (coded 0 for those reporting it is not important to them and 1 for those indicating it is important), partisan identification (coded on the traditional 7-point scale running from 1 [*strong Democrat*] to 7 [*strong Republican*]), personal ideology (coded on the usual 5-point scale from 1 [*very liberal*] to 5 [*very conservative*]), and interest in politics (coded along a 3-point scale from 1 [*not much interested*] to 3 [*very much interested*]). I also include a measure of homosexual contact, which has long been found to ameliorate attitudes toward gays and lesbians (Barth, Overby, & Huffman, 2009). This measure is based on whether respondents self-reported often seeing or interacting with people they know to be gay or lesbian, with those answering in the negative coded 0, and those answering in the affirmative coded 1.¹¹ Because large majorities of homosexual men and lesbians believe they have “no choice at all” in sexual orientation (Herek, Gillis, & Cogan, 2009), it seems quite likely that knowing someone who is gay should increase the likelihood of believing homosexuality to be biologically based.

To measure underlying, OCEAN personality traits, I use the Ten Item Personality Index (TIPI). The TIPI asks participants to respond to 10 questions, identifying whether they see themselves as characterized by a series of trait pairs, which are scaled along 7-point scales ordered from 1 (*strongly disagree*) to 7 (*strongly agree*). There are two pairs of traits for each dimension of personality, with the second set of traits in each instance reversed coded to limit acquiescence bias. Openness is measured by reactions to “open to new experiences” and “complex,” as well as to “conventional” and “uncreative.” Conscientiousness uses “dependable” and “self-disciplined,” as well as “disorganized” and “careless.” Extraversion is measured using “extraverted” and “enthusiastic,” in addition to “reserved” and “quiet.” Agreeableness utilizes responses to “sympathetic” and “warm,” paired against “critical” and “quarrelsome.” Finally, neuroticism (which is sometimes also identified by its obverse, emotional stability) asks for responses to “calm” and “emotionally stable” versus “anxious” and “easily upset.” Although the battery is brief (making it ideal for survey versus clinical applications), Gosling, Rentfrow, and Swann (2003) found it compares favorably with much longer instruments.¹² To the best of my knowledge, this is the first study to include such a powerful index of underlying personality traits in an analysis of public attitudes toward matters of gay civil rights.

FINDINGS

Etiology of Homosexuality

Public beliefs regarding the origin of homosexuality are summarized in Table 1. Collapsing the strongly agree and agree categories and the strongly disagree and disagree categories demonstrates that roughly 52% of respondents think of homosexuality as being based primarily in “biological make-up” compared to 32% who see sexual orientation as more of a lifestyle choice. Support for a biological basis is considerably higher here than reported by Haider-Markel and Joslyn (2008, p. 295), who found these percentages essentially flipped with only 32% of respondents to a 2003 Pew survey indicating a belief that homosexuality is something people are “born with” (for somewhat more recent figures, see Whitehead, 2010). These numbers extend a trend line, visible in Gallup survey results, which have demonstrated public increases in biological attribution rising from 13% in 1977 to 41% in 2006 (Haider-Markel & Joslyn, 2008, p. 302).

Although there has been significant aggregate movement in public opinion on this issue, individual respondents report considerable stability in their personal attitudes. When asked if their beliefs about the cause of homosexuality had changed “over the past few years,” a large majority—84%—indicate that they had not, as shown in the bottom half of Table 1. In contrast, only roughly 1 respondent in 10 (i.e., 11%) noted that they had changed attitudes in this regard. Among those who did report changing their opinions, however, the trend is definitely toward a more biological

TABLE 1 Etiology of Homosexuality

Variable	%
Homosexuality is primarily determined by a person’s biological make-up and is not a lifestyle choice.	
Strongly agree	28
Agree	24
Don’t know	16
Disagree	15
Strongly disagree	17
Over the past few years, have your beliefs about the cause of homosexuality stayed the same or changed?	
Stayed the same	84
Don’t know	5
Changed	11
If it has changed, have you come to believe that homosexuality is determined more by biological make-up or to believe that homosexuality is more of a lifestyle choice?	
More biological	55
Don’t know	14
More lifestyle choice	31

understanding of the etiology of homosexuality (55%) than toward seeing it as a lifestyle choice (31%).

What factors account for variation in public attitudes about the causal attributions of homosexuality? As Haider-Markel and Joslyn (2008) noted, few previous studies have addressed this question. I extend their attempt to do so, using a more developed battery of demographic, social, and political independent variables. In addition to the variables they include on the right hand side of their equation,¹³ I add controls for partisanship, income, political interest, and the OCEAN personality traits.

In the resulting equations, which are summarized in Table 2, the variables of interest perform much as anticipated. In the full model (Model 1 in Table 2), which includes measures for gay contact and political interest, race, gender, born-again status, religiosity, age, marital status, and knowing gays or lesbians are all associated with attitudes toward the etiology of homosexuality. It is a bit ironic, perhaps, that women report higher levels of belief in a genetic basis to homosexuality because, at present at least, there is considerably more evidence that male sexual orientation is heritable, whereas the situation with “female sexual orientation is particularly

TABLE 2 Etiology of Homosexuality Multivariate Analysis

Variable	Model 1	Model 2
Demographic and social variables		
Race	0.500** (.240)	0.290* (.180)
Gender	-0.670*** (.210)	-0.380*** (.140)
Education	-0.110 (.070)	-0.070 (.050)
Income	-0.040 (.030)	-0.060*** (.020)
Denomination	-0.260 (.200)	0.010 (.140)
Born again	0.760*** (.210)	1.020*** (.150)
Importance of religion	0.650*** (.250)	0.440*** (.170)
Age	-0.020*** (.007)	-0.020*** (.005)
Marital status	-0.700** (.280)	-0.660*** (.190)
Gay contact	-1.070*** (.200)	—
Political variables		
Partisanship	0.100* (.050)	0.140*** (.040)
Ideology	0.930*** (.120)	0.780*** (.090)
Political interest	0.520*** (.170)	—
Personality traits		
Openness	0.003 (.050)	-0.060* (.030)
Conscientiousness	-0.030 (.040)	-0.030 (.030)
Extraversion	0.050 (.030)	0.003 (.020)
Agreeableness	-0.060 (.050)	-0.030 (.030)
Neuroticism	0.020 (.040)	0.050* (.030)
Pseudo- R^2	.21	.17
<i>n</i>	452	862

Note. Entries are coefficients from ordered logistical regression equations, with associated standard errors in parentheses.

* $p \leq .10$. ** $p \leq .05$. *** $p \leq .01$ (two-tailed).

foggy” (Swidey, 2005, para. 21). Similarly, the racial difference reverses the historical trend because, in the 1980s, “African Americans were more likely than comparable whites to believe that homosexuality was innate” (Lewis, 2009, p. 688). As with Haider-Markel and Joslyn (2008; see also Horn, 2006), I find that younger respondents are significantly more likely to see homosexuality as a lifestyle choice, which—like them—I attribute to youthful experimentation with sexual identities they are likely to have witnessed. Among the political variables, partisanship is only marginally significant in the full model, but ideology and political interest are robustly so. Not surprisingly, conservatives tend to believe more in homosexuality being a choice than do liberals. Political interest also displays a statistically significant association, with the more politically engaged tending to believe more in a biological basis to homosexuality. The personality trait variables do not fare well, with none displaying even marginally significant effects.

In the model that excludes gay contact and political interest (Model 2 in Table 2), most variables retain their directional signs and levels of significance. However, partisanship now emerges as robustly significant, with Republicans reporting significantly higher levels of support for the proposition that homosexuality is a lifestyle choice.¹⁴ Together, these results suggest contact can have an ameliorative effect in defusing partisan reactions to homosexual etiology. As in Model 1, the personality trait variables have little effect, with only openness and neuroticism displaying even marginal impacts.

Models attempting to account for variation in changes in attitudes regarding the cause of homosexuality perform less well. For purposes of brevity, I merely summarize them here. The model accounting for whether respondents had recently changed their opinions regarding homosexuality generates a pseudo- R^2 of only .09. In that model, non-Caucasians, men, those with lower incomes, Protestants, those who have never been married, those who are more extraverted, and those who are less agreeable display a tendency toward having altered their opinions. The model accounting for direction of the change generates a similarly weak pseudo- R^2 (.08) and only the neuroticism measure emerges (barely) as a significant predictor, with those characterized as having more anxiety more likely to have altered their opinions in the direction of greater choice.

Gay Adoption

Public attitudes regarding gay adoption are summarized in Table 3, which compares them to public feelings regarding same-sex civil unions. Overall, there is considerable overlap. Whereas 52% of respondents favor or strongly favor “allowing gays and lesbians to adopt children,” 53% favor or strongly favor “allowing civil unions for gay and lesbian couples.” Similarly, 40% oppose or strongly oppose gay adoption and 42% oppose or strongly oppose

TABLE 3 Public Attitudes Regarding Gay Adoption and Same-Sex Civil Unions

Variable	Adoption	Civil Unions
Strongly favor	22%	34%
Favor	30%	19%
Don't know	8%	5%
Oppose	16%	10%
Strongly oppose	24%	32%

gay civil unions. But the intensity of opinion is much stronger on the civil union question, with roughly one-third of respondents strongly favoring them and one-third strongly opposing them. In contrast, attitudes on the adoption issue are more muted, with the polar categories each attracting less than one-fourth support from respondents. Overall, 39% of respondents are consistent, providing the same ranking on the 5-point scale for gay adoption and gay civil unions. However, 47% are more supportive of adoptions, whereas only 14% are more supportive of same-sex civil unions.

Table 4 summarizes results of efforts to account for public attitudes on gay adoption using multivariate models. Again, as a point of comparison, I use the same models to estimate support for civil unions for same-sex couples, and also include equations for vote intentions in the 2008 presidential general election. In the case of the two gay rights dependent variables, the coding is such that higher values represent greater disapproval of gay adoptions and civil unions. In the case of vote choice, higher values indicate support for Republican candidate John McCain as of September 2008. As noted earlier, I include two models for each item: one (labeled 1 in each case) that includes measures for gay contact and political interest (which lowers the sample size) and another (labeled 2 in each case) without such variables. Overall, the variables of primary interest behave similarly across these models.

Comparing the two gay rights equations, there are both important similarities and differences to note. In terms of similarities, beliefs about the etiology of homosexuality have profound influences on both of these attitudes. Indeed, the “nature or nurture” variable emerges in each model as the single best predictor of these attitudes. Setting all other variables at their means and letting the etiology measure move across the range of its values indicates its profound impact. In the adoption model, the marginal effect of attitudes toward the etiology variable is 9.4%, representing an average movement of .29 across the various values of the dependent variable. The figures for the marginal effects in the civil unions model is 8.2%, which is an average movement of .27 across the various values of the dependent variable. In each case, the marginal effects of the etiology variable is significantly more pronounced than the next most important variable, ideology, which demonstrates a marginal effect of 6.0% for adoptions and 5.8% for

TABLE 4 Etiology of Homosexuality and Its Effects on Political Attitudes Multivariate Analysis

Variable	Opposition to Gay Adoption		Opposition to Same-Sex Civil Unions		Vote Choice	
	1	2	1	2	1	2
Demographic and social variables						
Race	0.670** (.260)	0.38** (.190)	0.510* (.280)	0.620*** (.210)	-1.10*** (.54)	-0.880** (.36)
Gender	-0.260 (.220)	-0.33*** (.150)	-0.080 (.240)	0.0700 (.160)	-0.13 (.43)	-0.050 (.29)
Education	-0.060 (.070)	-0.07 (.050)	-0.030 (.080)	-0.1200** (.060)	0.02 (.14)	0.020 (.10)
Income	-0.040 (.030)	-0.03 (.020)	-0.050 (.030)	-0.0100 (.020)	-0.10* (.06)	-0.010 (.04)
Denomination	0.190 (.210)	0.20 (.150)	0.020 (.220)	0.1300 (.160)	0.25 (.39)	0.030 (.27)
Born again	0.640*** (.230)	0.41** (.160)	0.640*** (.240)	0.6600*** (.170)	-0.41 (.44)	-0.490 (.31)
Importance of religion	0.200 (.250)	0.37** (.180)	0.760*** (.270)	0.6700** (.190)	1.09** (.49)	0.890*** (.33)
Age	0.014* (.007)	0.01* (.006)	0.005 (.008)	0.0080 (.006)	0.01 (.02)	0.001 (.01)
Marital status	-0.460 (.280)	-0.46* (.200)	-0.440 (.310)	-0.4300** (.220)	-0.26 (.53)	-0.140 (.36)
Gay contact	0.990*** (.220)	—	0.920*** (.230)	—	-0.02 (.40)	—
Political variables						
Partisanship	0.180*** (.060)	0.15*** (.040)	0.240*** (.060)	0.1700*** (.050)	0.86*** (.11)	0.88*** (.08)
Ideology	0.450*** (.130)	0.60*** (.100)	0.490*** (.140)	0.5800*** (.100)	0.62*** (.23)	0.590*** (.16)
Political interest	-0.070 (.180)	—	0.200 (.190)	—	0.14 (.37)	—
Etiology of homosexuality	0.800*** (.090)	0.94*** (.070)	0.680*** (.090)	0.8200*** (.070)	0.57*** (.15)	0.520*** (.10)
Personality traits						
Openness	-0.090* (.050)	-0.15*** (.040)	-0.030 (.050)	-0.0900** (.040)	0.07 (.10)	-0.050 (.07)
Conscientiousness	0.080* (.050)	0.09*** (.030)	0.090* (.050)	0.0900*** (.040)	0.01 (.09)	0.060 (.07)
Extraversion	-0.007 (.035)	-0.03 (.030)	0.020 (.040)	-0.0400 (.030)	-0.01 (.07)	-0.060 (.05)
Agreeableness	-0.040 (.050)	-0.01 (.040)	-0.040 (.050)	0.0008 (.040)	0.02 (.09)	-0.020 (.07)
Neuroticism	0.007 (.040)	-0.05 (.030)	-0.030 (.040)	-0.0500 (.030)	0.01 (.08)	-0.010 (.06)
Pseudo-R ²	.30	.31	.30	.30	.62	.62
n	451	858	451	861	405	788

Note. Entries are coefficients from ordered logistical regression equations, with associated standard errors in parentheses. * $p \leq .10$. ** $p \leq .05$. *** $p \leq .01$ (two-tailed).

civil unions. Very much comporting with the earlier findings of Overby and Barth (2002) and Haider-Markel and Joslyn (2008), these results speak to the profound importance of Americans' beliefs regarding the underlying cause of homosexuality in conditioning their attitudes toward gay rights policy. Those who see homosexual behavior as biologically based are far more likely to endorse greater rights for homosexual couples and parents than are otherwise similarly situated individuals who attribute being gay to personal choice. The fact that the effect is larger in the adoption model is also as predicted because concerns about whether sexual orientation is learned or genetically determined should exercise more influence on attitudes explicitly related to child rearing.

There are interesting differences, too, revealed by comparing the adoption and civil unions models. First, age displays a modest, but statistically significant, association with opposition to adoption, but not to civil unions. Older respondents tend to oppose gay adoption, but not gay civil unions, suggesting there is something about aging that makes respondents more skeptical about homosexuals as parents than about their rights to protected civil unions. One plausible interpretation of this—which unfortunately, as noted earlier, I do not have the data to examine directly—is that those who are themselves parents are dubious about the wisdom of gay adoption. Or perhaps older adults are more prone to see the benefits of having a significant other in their lives as they age to assist with benefits, health care, and the like.

Equally intriguing is the religiosity measure, which, although a robust predictor of opposition to legalized civil unions in both models, is unrelated to attitudes on gay adoption, at least in the full model that includes all independent variables.¹⁵ Because both models include a “born-again” variable to capture conservative religious beliefs, this suggests that Americans who are religious and more liberal in their theology are willing to countenance gay adoption (presumably for the good of adoptive children) while they remain leery of sanctioning gay marriage. Although we often tend to think of religious Americans as speaking with a conservative monotone on cultural matters such as gay rights, this finding serves as a reminder that there are significant differences within the community of believers and that on issues where a countervailing public good can be offered as a rationale support may increase.¹⁶

The vote choice models, included in the far right column of Table 4, permit us to examine the effect of causal attributions of homosexuality on another politically relevant attitude. Even after controlling for a host of other factors that tend to be associated with voting preferences, beliefs about the causes of homosexuality emerge as a significant predictor of respondents' candidate inclinations. Those who believe that homosexuality is a lifestyle choice were, *ceteris paribus*, likely to prefer John McCain to Barack Obama, whereas the opposite is true for those who feel there is a biological

foundation to being gay.¹⁷ Although, not surprisingly, this variable does not rival partisanship (with a marginal effect of 22%) for the honor of best predictor, with a marginal impact of 13%, it does approach that of ideology (which has a marginal effect of 15%). Holding all other variables at their mean value, shifting from seeing homosexuality as biologically determined toward believing it to be a lifestyle choice increases the likelihood of preferring McCain from .31 to .78. Conversely, shifting from seeing homosexuality as a choice to holding it to be biologically determined increased the likelihood of preferring Obama from .22 to .69. Although others (e.g., Hillygus & Shields, 2005) have suggested that attitudes toward gay rights have a relatively modest impact on national elections, these results reflect not only the profound cultural divide represented by attitudes toward the nature of homosexuality, but—as public opinion continues to shift on-balance toward a more biologically founded understanding—suggest that Republican candidates have paid and will likely continue to pay an electoral price for being on the trailing side of this debate.

Finally, there is some evidence in Table 4 that underlying personality traits do matter when it comes to attitudes regarding gay civil rights, although not for presidential vote choice. Openness and conscientiousness both generally achieve at least modest thresholds of statistical significance across the four equations modeling attitudes toward adoption and civil unions. As would be expected, those whose personalities are more “open to new experiences” and “complex” tend to be more supportive of both gay adoption and civil unions, whereas those who score as “conventional” and “uncreative” are significantly more likely to oppose same-sex adoptions and civil unions. On the conscientiousness dimension, those who are “dependable” and “self-disciplined” tend to be more skeptical of gay adoptions and civil unions, whereas those who are more “disorganized” and “careless” are more supportive. Overall, this makes intuitive sense, with those who value order and convention, those who are more comfortable with neat, well organized categories, less likely to support expanded homosexual rights than are those whose personalities are more adept at embracing new experiences and less rigid about classifications. Although the marginal effects of these variables are rather muted (ranging from 1% to 2%), the fact that they emerge as significant at all in models containing such a host of other powerful predictors points to the wisdom of further research into the manner in which personality influences public policy attitudes.

DISCUSSION AND CONCLUSION

In this article, I have updated and extended analysis of American public opinion regarding the etiology of homosexuality and its implications for attitudes

related to gay rights, especially the emerging issue of gay adoption. As public opinion on homosexuality is so dynamic—and because issues related to gay rights remain at the forefront of American political and cultural debates—it is important to track these evolutions in attitudes. Using data from the 2008 campaign season, I demonstrate the continued and significant growth in public willingness to attribute homosexuality to biological causes. Indeed, for the first time, it appears as though a majority of the American voting public believes that homosexuality is based more on nature than nurture or choice.

I have also extended our understanding of the factors related to this causal attribution. Using a more complete battery of controls (including partisanship, income, political interest, and underlying personality traits), I have verified recent work by Haider-Markel and Joslyn (2008) that ideological and religious predispositions frame Americans' understanding of homosexuality, but that partisanship also plays a significant conditioning role. Although I had anticipated that personality traits would have more impact on both views of the etiology of homosexuality and particular gay rights issues, these character measures display only inconsistent and marginal direct effects, doing little to improve model fit or provide additional insights into public attitudes.

It is clear—as others, such as Haider-Markel and Joslyn (2008) and Overby and Barth (2002), have argued—that source attributions for homosexuality represent a true fault line in the culture wars. Americans' beliefs about the causes of homosexuality represent a powerful predictor not only of positions related to particular gay rights issues, but also of more general predispositions such as presidential vote choice. *Ceteris paribus*, those who view homosexuality as ingrained in human biology tend to favor extending greater rights to gays and lesbians (especially in the area of adoption) and to favor more liberal, Democratic candidates; conversely, those who view being gay largely as a matter of individual choice tend to oppose such rights and to favor more conservative, Republican candidates. Viewed in the context of significant, sustained growth of public belief in a biological basis to homosexuality, this bodes well—at least in the intermediate- to long-term—for the continued expansion of gay civil liberties while auguring badly for the competitiveness of a Republican party that has made opposition to gay rights a central tenet of its recent platforms.

Finally, in terms of adoptions by gays and lesbians, I have provided some of the first and among the most extensive multivariate analysis of how the public views this budding issue. Although there is much similarity in public attitudes to the more hotly debated issue of gay marriage, public attitudes on adoption are not as negative, nor as polarized. This is especially obvious in the multivariate models, which show that religiosity is more strongly related to (negative) attitudes regarding civil unions than it is to adoption. In the case of adoption there appear to be significant parts of the citizenry

willing to countenance greater rights for homosexuals because there is both a countervailing public good at stake (the welfare of children in the foster care system) and growing evidence of and belief in the sort of biological basis to homosexuality that erodes concerns that gay parents might alter children's sexual orientation.

Taking the broader historical perspective, it is perhaps ironic that in the current era, belief in biological determinism is associated with greater tolerance toward homosexuals and support for homosexual civil liberties. Certainly, over the course of American history protection was afforded first to matters of choice (*e.g.*, religious belief, partisan affiliation) and only later to inborn traits such as gender and race. Indeed, appeals to biology as the source of differences among people have usually been voiced by illiberal elements taking intolerant positions. Whether the current debate over the causes of homosexuality will eventually double back on itself to echo these earlier themes remains to be seen. In the current political climate, however, public belief in a biological basis for homosexuality continues to grow, continues to fuel increasing tolerance of gays and lesbians, and continues to condition a variety of politically relevant issue positions and attitudes.

NOTES

1. As noted later, the survey question on which this analysis is based equates *civil unions* with *same-sex marriage*, and throughout the article, I use the terms interchangeably. Although some will object to this equivalence, as the Human Rights Campaign has noted, the two are, in fact, legally comparable because civil unions give "same-sex couples access to the state-level rights and responsibilities of marriage" (see http://www.harc.org/issues/pages/civil_unions.asp).

2. The lines of causality in this relation have been questioned, including recently by Lewis (2009), whose meta-analysis of American public opinion surveys between 1977 and 2005 concluded that "people may choose their attributions to validate their value judgments" (p. 670). This issue has been debated in the psychology literature (*e.g.*, for competing arguments and evidence, see Haslam & Levy, 2006; Hegerty & Golden, 2008), although both sides of the dispute acknowledge the limitations of the data accumulated so far and the necessity for considerably more research before drawing definitive conclusions. As it bears more on the utility of stressing biological traits "as a policy tool for shifting opinion on LGB [lesbian, gay, and bisexual] rights" (Lewis, 2009, p. 690) than it does on my analysis, I do not focus on the dispute here.

3. As the American Civil Liberties Union's (ACLU) Lesbian and Gay Rights Project put it: "In the end, we cannot force America to accept marriage for same-sex couples with lawsuits. But we can persuade America to do that. We already know that we can win over a majority of Americans if we show them that same-sex couples have committed relationships and suffer tragically when society treats them as strangers. . . . To change the thinking of America, national organizations like the ACLU, HRC [Human Rights Campaign], NGLTF [National Gay and Lesbian Task Force], GLAAD [Gay and Lesbian Alliance Against Defamation], and others have to find stories of committed couples, show how society mistreats them as strangers, and get those stories out" (aclu.org/lgbt/relationships/12423res20041201.html, para. 26–27).

4. The Florida law was struck by a state court in 2008, but the state is currently appealing and continues to enforce the prohibition. Florida does, however, permit gays and lesbians to serve as foster parents, which is evidence of the inconsistencies of the law in this area.

5. Indeed, recently surveying the situation, Rayside (2008) was struck by the far greater ease of gay adoptions in the United States than in Europe, concluding that the "spread of parenting rights [in the

United States] is remarkable, especially in the face of mounting conservative pressure to bar such rights” (p. 292).

6. In doing so, I present far more complete multivariate models than found in the existing literature—most notably, Schwartz (2010). Due to data limitations, Schwartz’s analysis excludes a number of potentially interesting independent variables including race, partisanship, marital status, income, and personal contact with gays and lesbians, in addition to the etiology and personality indicator variables.

7. Mucciaroni (2008) made a similar argument regarding the impact that concerns for child welfare among social workers and family court judges have had on the expansion of gay adoptions.

8. Respondents were also asked if “over the past few years” their “beliefs about the cause of homosexuality stayed the same or changed.” Those who indicated change were queried as to whether they had “come to believe that homosexuality is determined more by biological make-up or to believe that homosexuality is more of a lifestyle choice?”

9. The survey did not offer respondents a third option—that homosexuality is “because of the way people are brought up” (see Haider-Markel & Joslyn, 2008). Because Haider-Markel and Joslyn (2008, p. 295) collapsed the upbringing and personal choice responses to form a single non-biological basis category, the analysis here is very compatible.

10. In actuality, gay adoption is a far more complicated issue than the relatively simple question wording used here can capture. There are at least three different categories recognized in the law: adoption by a gay individual, joint adoption by a same-sex couple, and adoption of a partner’s biological child by a same-sex partner. I assume, but cannot verify, that most respondents envisioned the context of adoption by same-sex couples when answering this question.

11. The exact wording of the question was, “And what about the kinds of people you tend to see, talk to, or interact with on a typical day? Do you often see or interact with people you know to be gay or lesbian?” The likely endogeneity of answers to this question relative to attitudes toward gays and lesbians is well known (see Overby & Barth, 2002) because there is evidence of considerable selective disclosure, with gays and lesbians more likely to “out” themselves to those they suspect have warmer preexisting attitudes toward homosexuals (see Wells & Kline, 1987). Because I use it only as a control variable and have little immediate interest in its causal importance, endogeneity is of little concern. Also, because this question was asked of only a relatively small number of respondents who were queried about same-sex adoption, along with a question regarding political interest, it is a principal culprit in lowering sample sizes in the analyses reported later. Where appropriate, therefore, I present results of models both including and excluding these variables, and note that other studies have also utilized relatively small samples (e.g., see Becker & Scheufele, 2009; Wood & Bartkowski, 2004).

12. The Ten Item Personality Index (TIPI) has been used in a number of academic studies, some of which are listed on Gosling, Rentfrow, and Swann’s (2003) Web site: [http://homepage.psy.utexas.edu/homepage/faculty/gosling/scales_we.htm](http://homepage.psy.utexas.edu/homepage/faculty/gosling/scales/we.htm). For further discussion of the use of TIPI in political science research, see Gerber, Huber, Raso, and Ha (n.d.).

13. These are age, gender, gay contact, religiosity (which they measure using self-reported church attendance and I measure with the importance of religion question), Protestantism, status as a born-again Christian, ideology, race, and marital status. They also included a variable for having children (which was marginally significant in the attribution model), which I exclude because it was not asked in the Cooperative Campaign Analysis Project survey.

14. Income also emerges as a significant predictor in this model, although—*contra* Haider-Markel and Joslyn (2008)—I continue to find no effect for education. It is possible that what they took to be an educational effect is actually an upshot of income because perhaps it is not formal education *per se* that contributes to belief in biological attribution, but the broader range of experiences and opportunities that are associated with elevated economic status.

15. In bivariate analysis, religious importance and attitudes toward gay adoption correlate at 0.28, whereas the correlation between religion and civil unions is 0.37. Similarly, testing the marginal effect of religious importance across all four equations for the adoption and civil unions models show significantly larger impacts for civil unions (.06 and .07, respectively) than for adoption (.04 and .02, respectively).

16. Similarly, Becker and Scheufele (2009, p. 206; Schwartz, 2010) recently suggested “from a strategic perspective” the wisdom of gay rights advocates “highlighting the various religious groups that have come to accept gay clergy and embrace gay congregants.”

17. This strong relation is visible in bivariate analysis, too. Among those who believe that homosexuality is rooted in biology, 69% supported Obama, compared to 16% for McCain. Among those

who believe that homosexuality represents a choice, the opposite is true: 70% favored McCain, whereas < 18% preferred Obama.

REFERENCES

- American Academy of Pediatrics. (2002). Coparent or second-parent adoption by same-sex parents. *Pediatrics*, *109*, 339–340.
- American Psychological Association. (2004). *Sexual orientation, parents, & children*. Washington, DC: Author. Retrieved from www.apa.org/pi/lgbcc/policy/parents.html
- Ansolabehere, S., & Persily, N. (2008). Vote fraud in the eye of the beholder: The role of public opinion in the challenge to voter identification requirements. *Harvard Law Review*, *121*, 1737–1774.
- Barth, J., & Parry, J. (2009). 2 > 1 + 1?: The impact of contact with gay and lesbian couples on attitudes about gays/lesbians and gay-related policies. *Politics and Policy*, *37*, 31–50.
- Becker, A. B., & Scheufele, D. A. (2009). Moral politicking: Public attitudes toward gay marriage in an election context. *International Journal of Press/Politics*, *14*, 186–211.
- Carney, D. R., Jost, J. T., Gosling, S. D., & Potter, J. (2008). The secret lives of liberals and conservatives: Personality profiles, interaction styles, and the things they leave behind. *Political Psychology*, *29*, 807–840.
- Gartner, S. S. (2008). The multiple effects of casualties on public support for war: An experimental approach. *American Political Science Review*, *102*, 95–106.
- Gerber, A., Huber, G. A., Raso, C., & Ha, S. (n.d.). *Personality and political behavior*. New Haven, CT: Yale University Press. Retrieved from papers.ssrn.com/SOL3/papers.cfm?abstract_id=1412829
- Goldstein, R. (2002). *The attack queers: Liberal society and the gay right*. New York, NY: Verso.
- Gosling, S. D., Rentfrow, P. J., & Swann, W. B., Jr. (2003). A very brief measure of the Big Five personality domains. *Journal of Research in Personality*, *37*, 504–528.
- Grosjean, Y., Grillet, M., Augustin, H., Ferveur, J.-F., & Featherstone, D. E. (2008). A glial amino-acid transporter controls synapse strength and courtship in drosophila. *Nature Neuroscience*, *11*, 54–61.
- Guisinger, A. (2009). Determining trade policy: Do voters hold politicians accountable? *International Organization*, *63*, 533–557
- Haider-Markel, D. P., & Joslyn, M. R. (2008). Beliefs about the origins of homosexuality and support for gay rights: An empirical test of attribution theory. *Public Opinion Quarterly*, *72*, 291–310.
- Harris, D. (1997). *The rise and fall of gay culture*. New York, NY: Ballentine.
- Haslam, N., & Levy, S. R. (2006). Essentialist beliefs about homosexuality: Structure and implications for prejudice. *Personality and Social Psychology Bulletin*, *32*, 471–485.
- Hegarty, P. (2002). “It’s not a choice, it’s the way we’re built”: Symbolic beliefs about sexual orientation in the U.S. and Britain. *Journal of Community and Applied Social Psychology*, *12*, 153–166.

- Hegarty, P., & Golden, A. M. (2008). Attributional beliefs about the controllability of stigmatized traits: Antecedents or justifications of prejudice? *Journal of Applied Social Psychology, 38*, 1023–1044.
- Heider, F. (1944). Social perception and phenomenal causality. *Psychological Review, 51*, 358–374.
- Heider, F. (1958). *The psychology of interpersonal relations*. New York, NY: Riley.
- Herek, G. M., Gillis, J. R., & Cogan, J. C. (2009). Internalized stigma among sexual minority adults: Insights from a social psychological perspective. *Journal of Counseling Psychology, 56*, 32–43.
- Hillygus, D. S., & Shields, T. G. (2005). Moral issues and voter decision making in the 2004 presidential election. *PS: Political Science and Politics, 38*, 201–209.
- Horn, S. S. (2006). Heterosexual adolescents' and young adults' beliefs and attitudes about homosexuality and gay and lesbian peers. *Cognitive Development, 21*, 420–440.
- Jackman, S., & Vavreck, L. (2010). Primary politics: The importance of gender, age, and race in the 2008 Democratic Primary. *Journal of Elections, Parties, and Public Opinion, 20*, 153–186
- Jost, J. T., Federico, C. M., & Napier, J. L. (2009). Political ideology: Its structure, functions, and elective affinities. *Annual Review of Psychology, 60*, 339–367.
- Jost, J. T., Glaser, J., Kruglanski, A. W., & Sulloway, F. J. (2003). Political conservatism as motivated social cognition. *Psychological Bulletin, 129*, 339–375.
- Klar, A. (2004). Excess of counterclockwise scalp hair-whorl rotation in homosexual men. *Journal of Genetics, 83*, 251–255.
- Konisky, D. M., Milyo, J., & Richardson, L. E. (2008). Environmental policy attitudes: Issues, geographical scale, and political trust. *Social Science Quarterly, 89*, 1066–1085.
- Långström, N., Rahman, Q., Carlström, E., & Lichtenstein, P. (2008). Genetic and environmental effects on same-sex sexual behavior: A population study of twins in Sweden. *Archives of Sexual Behavior, 39*, 75–80. doi:10.1007/s10508-008-9386-1
- LeVay, S. (1993). *The sexual brain*. Cambridge, England: MIT Press.
- Lewis, G. B. (2009). Does believing homosexuality is innate increase support for gay rights? *Policy Studies Journal, 37*, 669–693.
- Lippa, R. A. (2003). Handedness, sexual orientation, and gender-related personality traits in men and women. *Archives of Sexual Behavior, 32*, 103–114.
- Mondak, J. J. (2010). *Personality and the foundations of political behavior*. New York, NY: Cambridge University Press.
- Mondak, J. J., & Halperin, K. D. (2008). A framework for the study of personality and political behavior. *British Journal of Political Science, 38*, 335–362.
- Mondak, J. J., Hibbing, M. V., Canache, D., Seligson, M. A., & Anderson, M. R. (2010). Personality and civic engagement: An integrative framework for the study of trait effects on political behavior. *American Political Science Review, 104*, 85–110.
- Mucciaroni, G. (2008). *Same-sex, different politics: Success and failure in struggles over gay rights*. Chicago, IL: University of Chicago Press.
- Mustanski, B. S., DuPree, M. G., Nievergelt, C. M., Bocklandt, S., Schork, N. J., & Hamer, D. H. (2005). A genomewide scan of male sexual orientation. *Human Genetics, 116*, 272–278.

- Overby, L. M., & Barth, J. (2002). Contact, community context, and public attitudes toward gay men and lesbians. *Polity*, *34*, 433–456.
- Piskur, J., & Degelman, D. (1992). Effect of reading a summary of research about biological bases of homosexual orientation on attitudes toward homosexuals. *Psychological Reports*, *71*, 1219–1225.
- Rayside, D. (2008). *Queer inclusions, continental divisions*. Toronto, Canada: University of Toronto Press.
- Romero, A. P., Baumle, A. K., Badgett, M. V. L., & Gates, G. J. (2007). *Census snapshot*. Los Angeles, CA: Williams Institute. Retrieved from <http://escholarship.org/uc/item/6nx232r4>
- Roselli, C. E., & Stormshak, F. (2009). The neurobiology of sexual preferences in rams. *Hormones and Behavior*, *55*, 611–620.
- Ruggeri, A. (2008, October 31). Emerging gay adoption fight shares battle lines of same-sex marriage debate. *U.S.News.com*. Retrieved from <http://www.usnews.com/articles/news/national/2008/10/31/emerging-gay-adoption-fight-shares-battle-lines-of-same-sex-marriage-debate.html>
- Savic, I., Berglund, H., & Lindström, P. (2005). Brain response to putative pheromones in homosexual men. *Proceedings of the National Academy of Sciences*, *102*, 7356–7361.
- Schwartz, J. (2010). Investigating differences in public support for gay rights issues. *Journal of Homosexuality*, *57*(6), 748–759.
- Sprigg, P., & Dailey, T. (2004). *Getting it straight: What the research shows about homosexuality*. Washington, DC: Family Research Council.
- Swidey, N. (2005, April 14). What makes people gay? *Boston.com*. Retrieved from www.boston.com/news/globe/magazine/articles/2005/08/14/what_makes_people_gay/
- Tolbert, C. J., Bowen, D. C., & Donovan, T. (2009). Initiative campaigns: Direct democracy and voter mobilization. *American Politics Research*, *37*, 155–192.
- Tygart, C. E. (2000). Genetic causation attribution and public support of gay rights. *International Journal of Public Opinion Research*, *12*, 259–275.
- Weiner, B. (1979). A theory of motivation for some classroom experience. *Journal of Educational Psychology*, *71*, 3–25.
- Weiner, B. (1985). An attribution theory of achievement, motivation, and emotion. *Psychological Review*, *92*, 548–573.
- Wells, J. W., & Kline, W. B. (1987). Self-disclosure of homosexual orientation. *Journal of Social Psychology*, *127*, 191–197.
- Whitehead, A. L. (2010). Sacred rites and civil rights: Religion's effect on attitudes toward same-sex unions and perceived causes of homosexuality. *Social Science Quarterly*, *91*, 63–79.
- Wilcox, C., & Wolpert, R. (2000). Gay rights in the public sphere: Public opinion on gay and lesbian equality. In C. A. Rimmerman, K. D. Wald, & C. Wilcox (Eds.), *The politics of gay rights* (pp. 409–432). Chicago, IL: University of Chicago Press.
- Williams, T. J., Pepitone, M. E., Christensen, S. E., Cooke, B. M., Huberman, A. D., Breedlove, N. J., . . . Breedlove, S. M. (2000). Finger-length ratios and sexual orientation. *Nature*, *404*, 455–456.
- Wood, P. B., & Bartkowski, J. P. (2004). Attribution style and public policy attitudes toward gay rights. *Social Science Quarterly*, *85*, 58–74.