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TAILORING GENERAL POPULATION SURVEYS TO ADDRESS PARTICIPATION
AND MEASUREMENT CHALLENGES OF SURVEYING LESBIAN, GAY, AND
BISEXUAL PEOPLE

by

Mathew Stange

A DISSERTATION

Presented to the Faculty of
The Graduate College at the University of Nebraska

In Partial Fulfillment of Requirements

For the Degree of Doctor of Philosophy

Major: Survey Research & Methodology

Under the Supervision of Professor Jolene D. Smyth

Lincoln, Nebraska

November, 2014

TAILORING GENERAL POPULATION SURVEYS TO ADDRESS PARTICIPATION
AND MEASUREMENT CHALLENGES OF SURVEYING LESBIAN, GAY, AND
BISEXUAL PEOPLE

Mathew Stange, Ph.D.

University of Nebraska, 2014

Adviser: Jolene D. Smyth

Being rare and stigmatized, lesbian, gay, and bisexual (LGB) people are hard-to-survey. Gaining their participation, reducing concealment of LGB identity, and accurately measuring their marital status are challenging. In this dissertation, I examine the effects that LGB-inclusive tailoring—inclusive cover image design and “same-sex” and “opposite-sex” marital status categories—has on addressing these challenges; particularly, the effect on who responds to a survey and the answers that they provide, among LGB and non-LGB people. The experiments were embedded in the 2013 Nebraska Annual Social Indicators Survey (NASIS), a general population mail survey of Nebraskans (n=1,608). I test how the LGB-inclusive cover design and marital status categories influenced the percent of LGB respondents; the percent of respondents who are in same-sex relationships; unit and item nonresponse; the demographic, political, and religious composition of respondents; reports to attitudinal questions about LGB issues; and how non-LGB respondents report their marital status. In the final part of this

dissertation, I examine whether the red-blue state and urban-rural narratives reflect Nebraskans' opinions about LGB issues.

Analyses showed that the inclusive cover design increased the percent of LGB respondents without a significant backlash from others in the population and little effect on answers to LGB issue questions. The LGB-inclusive marital status categories, however, did not address the challenges of measuring same-sex couple identity. Instead, the inclusive wording led to higher item nonresponse and to more heterosexual respondents misreporting their marital status. Additionally, I observed that Nebraska does not fit a red state narrative, with equal favorability and opposition to same-sex marriage and majority support for other LGB rights; although, I found that rural respondents reported significantly more conservative opinions than urban respondents, consistent with that frame. Overall, this dissertation suggests that inclusive cover designs might be useful for encouraging hard-to-survey populations' participation, that more research is necessary to accurately measure marital status, and that Nebraskans' opinions about LGB issues are more complex than people often assume.

DEDICATION

I dedicate my dissertation to the memory of two important people:

First, to Janet A. Harkness. As my first adviser in my graduate career, she taught me a lot about research methodology, among numerous other topics. She was the person who encouraged me to work toward my PhD and she provided me with wonderful opportunities for my education and professional development. I hope that I live up to the potential that she saw in me.

Second, to my nephew Jordan Sudbeck. In his two short years of life, he taught me more about life than any PhD could ever do.

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project. I thank the entire BOSR staff who helped with NASIS. Specifically, I want to recognize Amanda Richardson, the assistant director of BOSR, Lindsey Witt-Swanson, who answered questions that I had about weighting, and Patrick Habecker, who led the questionnaire design of NASIS and data collection.

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CHAPTER 1: INTRODUCTION

Lesbian, gay, and bisexual (LGB) individuals and same-sex couples are significantly affecting the social, political, economic, and health systems of the United States because of increasing numbers, visibility, and advocacy. Policymakers and researchers require quality survey data about the LGB population to estimate the size of the LGB population and the number of same-sex couples as well as to understand the social, political, economic, and health outcomes of them and their families (Baumle 2013b; Meezan & Martin 2009; Meyer & Northridge 2007; Gates & Sell 2007).¹

Quality survey data about LGB individuals and same-sex couples is difficult to collect in general population surveys, however, because of participation and measurement challenges (Durso & Gates 2013; Badgett & Goldberg 2009). For example, LGB individuals are unlikely to participate in surveys if they are unmotivated to respond due to finding the survey unappealing because the survey does not recognize them as a social group. Others may not respond because they do not want to reveal their sexual orientation. Even when they do participate, some LGB individuals may conceal their sexual orientation because of social stigma (Herek 2011; Gates 2011, 2010; Sylva, et al. 2009; Ragins, Singh, & Cornwell 2007; Schope 2002; Catania, et al. 1990). Furthermore, individuals in same-sex relationships may misreport their relationship status if response

¹ Examples of studies of LGB people include about enumerating same-sex couples and LGB people (Durso & Gates 2013; Carpenter 2013; Lofquist 2012; Gates 2012, 2009, 2007); demography, migration, and living patterns (Baumle 2013b; Gates 2013; Festy 2007; Manalansan 2006; Gates & Ost 2004); the experiences of LGB people in rural and urban areas (Kazyak 2011) and in the military (De Angelis, et al. 2013); the coming out process (Groves, et al. 2006); economics and advertising (Baumle 2013a; Oakenfull 2013; Badgett 2003); mental and physical health and sexual behaviors (Gates 2014; Meyer, Teylan, & Schwartz 2014; Chandra, Copen, & Mosher 2013; Cochran & Mays Wright, et al. 2012; Wolitski & Fenton 2011; King & Bartlett 2006); experiences of discrimination (Mallory & Sears 2014); legal complexities for same-sex couples (Oswald & Kuvalaka 2008; Cahill & Tobias 2007; Herek 2006); same-sex couple family formation and adoption (Davis 2013; Firth et al. 2012; Biblarz & Savci 2010); relationship functioning of same-sex couples and family life (Goldberg, Gartrell, & Gates 2014; Mohr, Selterman, & Fassinger 2013; Compton 2013); comparing same-sex and opposite-sex couples (Lau 2012; Kurdek 2006); experiences of children of same-sex couples (Perrin, Cohen, & Caren 2013), among others.

options for marital status questions are not inclusive of same-sex relationships. These challenges can contribute to inaccurate prevalence estimates and hinder the ability to identify LGB people and same-sex couples in research (Lofquist & Lewis 2014; Walther 2013; DeMaio, Bates, & O'Connell 2013; Bates, et al. 2012; Ridolfo, Perez, & Miller 2011; Gates 2009; Black, et al. 2007).

In this dissertation, I empirically examine tailoring a general population mail survey to be inclusive of homosexuality to address participation and measurement challenges of surveying LGB people. I do this through methodological experiments in a mail survey of Nebraska residents in which I examine the effects that an LGB-inclusive cover image design and explicit same-sex marital status categories have on who responds to the survey and the answers that they provide to questions. Tailoring surveys to address the challenges of surveying LGB people, though, may affect the quality of data collected from non-LGB respondents, especially if they view the tailoring unfavorably, find it offensive or biased, or do not understand the LGB-inclusive marital status question wording. Therefore, in this dissertation, I also empirically examine how this LGB-inclusive tailoring affects the participation and measurement of non-LGB people. In the final part of this dissertation, I examine the extent to which Nebraskans' opinions fit the red vs. blue state and urban-rural narratives of public opinion about LGB issues. I compare Nebraskans' opinions about LGB issues to national public opinion and examine differences in opinions between urban and rural respondents.

1.1 Background and Significance

1.1.1 Social Identity, Stigma, Concealment, Survey Participation, and Inclusive Tailoring

The world is complex for LGB individuals: current marriage and legal rights for them are in flux (e.g., Badgett & Herman 2013; Buckwalter-Poza 2012; Croyle 2011); visibility and acceptance are increasing (e.g., Pew Research 2013a, 2013b, 2013c; Baunach 2012; Keleher & Smith 2012); but stigma, prejudice, and discrimination persist (Duncan & Hatzenbuehler 2014; Pew Research 2013a; Stotzer 2012; Parnell, Lease, & Green 2012; Ng, Schweitzer, & Lyons 2012; Herek 2011). This complexity complicates gaining their participation in surveys and accurately measuring their marital status (Lofquist & Lewis 2014; Michaels 2013; Durso & Gates 2013; Walther 2013; Badgett & Goldberg 2009).

Some LGB individuals may not respond to a survey request because they are unmotivated. They might not find the survey topic interesting or might be unmotivated because the survey does not recognize LGB identity as part of the general population. Other LGB people may not participate in a survey because they do not want to reveal their sexual orientation or they may participate, but conceal their LGB identity. In fact, research shows that survey methods that influence the amount of privacy respondents have when answering survey questions and how researchers measure sexual orientation²

² Researchers can measure sexual orientation by a person's self-identity, their sexual behavior, or their sexual attraction (Michaels 2013; Durso & Gates 2013; Gates 2011; Badgett & Goldberg 2009; Saewyc, et al. 2004). An individual, for example, may identify as heterosexual/straight but report that they engage in same-sex sexual behaviors (Pathela, et al. 2006; Ross, et al. 2003; Rock Wohl, et al. 2002). Measuring only self-identity, only sexual attraction, or only sexual behavior could lead to different assessments of that individual's sexual orientation (Sell, Wells, & Wypij 1995). Researchers can also measure sexual orientation by individual survey questions (Badgett & Goldberg 2009) or using various multidimensional scales (e.g., Kinsey Scale, Shively and DeCecco Scale, Sell Sexual Orientation Scale; Sell 1997, 1996; Berkey, Perelman-Hall, & Kurdek 1990).

leads to variation in estimates of the percent of the US population who identify as LGB (e.g., ranging from 1.7% to 5.6%—Gates 2011). For example, recent data from the National Health Interview Survey estimates that 1.6% of Americans identify as gay or lesbian and 0.7% identify as bisexual, a lower estimate than past surveys (e.g., 3.5%—Gates and Newport 2013), possibly stemming from question wording and mode differences (Ward, et al. 2014; Hoffman 2014).

Measurement challenges also exist when asking marital status questions (Lofquist & Lewis 2014; Durso & Gates 2013; Walther 2013). Some LGB individuals may conceal their relationship status due to social stigma when reporting their relationship status reveals their sexual orientation.³ For example, Gates (2010) estimates that as many as one in ten same-sex couples are reluctant to report their relationship status on the US Census—often misreporting their relationship to their same-sex partner as “roommate” or “other non-relative.”

Response options that do not represent same-sex relationships present measurement challenges for LGB individuals who do disclose their sexual orientation, as well. These individuals may identify their relationship as “married” when not legally married or report as “single” even when in a significant relationship when response options do not reflect same-sex relationships (Walther 2013; Gates 2011, 2009; Lofquist 2012). This potential measurement error leads to the possibility of erroneously estimating the prevalence of same-sex couples and not identifying them for research.

³ A person in a same-sex relationship does not reveal their sexual orientation when they can simply respond as “married” to a marital status question. However, a survey that collects information about the sex of their partner, such as through a household roster, will reveal a person’s sexual orientation, but the ability to distinguish same-sex and opposite-sex couples necessitate these data.

Combined, this evidence indicates researchers interested in surveying LGB individuals and same-sex couples require methods to encourage their participation in surveys, reduce the desire to conceal their sexual orientation and relationship identity, and improve the ability to measure same-sex couple status. To do so, researchers must develop methods that recognize LGB group identity and remain sensitive to the social stigma attached to it.

Social Identity and Stigma. LGB people share a stigmatized social group identity. Social identity theory explains that a person bases his or her sense of self-identity on their group membership(s). That is, an individual's identity develops from a sense of belonging to the social statuses that they hold (Angelini & Bradley 2010; Cox & Gallois 1996; Tajfel & Turner 1985, 1979). Thus, LGB people might categorize themselves into "us," the LGB community, and "them" the non-LGB community based on their sexual orientation. Non-LGB individuals similarly categorize themselves. Social identity is significant because individuals tend to choose activities associated with salient aspects of their identities and tend to support institutions that embody these activities (Ashforth & Mael 1989). As such, LGB individuals may be more likely to participate in a survey that draws upon their group identity and more likely to report their self-identity of an LGB sexual orientation because they view the inclusivity favorably (Oakenfull & Greenlee 2005). Conversely, non-LGB individuals may be less likely to participate in a survey that draws upon an LGB group identity.

LGB group identity, however, comes with social stigma. Stigmatized individuals possess a negatively valued condition, status, or attribute that can lead to being discredited, facing negative social identities, and being targeted for discrimination (Herek

2011; Ragins, Singh, & Cornwell 2007; Crocker, et al. 1998; Goffman 1963).

Stigmatization is a process shaped by the interactions between both those who possess the negatively valued trait or status and those who perceive it negatively (Goffman 1963).

Possessing a stigmatized trait influences an individual's identity, behaviors, thinking, and emotions (Ragins, Singh, & Cornwell 2007; Deaux & Ethier 2007; Levin & van Laar

2006; Miller & Major 2000). Sexual stigma specifically refers to stigma associated with an individual having a non-heterosexual identity, having same-sex attractions, and engaging in non-heterosexual behavior and relationships (Herek 2011, 2009, 2007).

Sexual stigma can be structural—laws, religion, and social institutions—and individual—internalized discredit and self-concept. In experiencing sexual stigma, LGB individuals often look out for cues of others' prejudices and the level of acceptance of a given context, which sometimes leads them to conceal their LGB identity (Sylva, et al. 2009).

As an invisible stigma that is not obvious to others, some LGB individuals may learn or decide to conceal their sexual orientation and relationship identities to avoid harassment, prejudice, and discrimination that is sometimes associated with non-heterosexuality (Sylva, et al. 2009; Ragins, Singh, & Cornwell 2007; Schope 2002). In surveys, LGB people may be more likely to reveal their sexual orientation and relationship identity when they perceive the context as accepting of homosexuality (Bates, et al. 2012).

Participation, Concealment, and Disclosure. Self-disclosure theory indicates that, in general, people honestly disclose more information to individuals with whom they trust and feel emotionally comfortable (Catania, et al. 1996; Jourard 1971). Even when an LGB person is “out” about their sexuality, they may not be “out” to everyone; instead, an LGB person's experiences and the (perceived) context of a situation may influence

disclosure (Sylva, et al. 2009). For example, experiences of past discrimination (Ragins, Singh, & Cornwell 2007); living in conservative areas (Drumheller & McQuay 2010); internalized homophobia (Durso & Meyer 2012); and perceived acceptance, formality, and legality of a context (Bates, et al. 2012; Ragins, Singh, & Cornwell 2007)—even anti-gay policies and advocacy (Herek 2011)—influence to whom LGB individuals disclose their sexual orientation and how those in same-sex relationships describe their marital status. In surveying LGB people, researchers face a challenge of calling attention to a stigmatized group identity within the context of a survey. On the one hand, surveys that explicitly recognize LGB people as a social group (e.g., through question content, wording, and cover images) may draw attention to them as a stigmatized minority group. On the other hand, surveys that do not recognize LGB identity may perpetuate the sense of stigma associated with homosexuality because it denies the existence of LGB people as part of the general population. Framing and context of a survey are important because LGB individuals are more likely to report their sexual orientation (and sexual behaviors) when they are convinced there is a legitimate reason for these data and when the survey does not signal stigmatization of homosexuality (Michaels 2013; Durso & Gates 2013).

Survey Participation. The leverage-salience (Groves, Singer, & Corning 2000) and social exchange (Dillman, Smyth, & Christian 2014) theories of survey participation both explain participation in terms of multiple ways to appeal to respondents. Researchers can use these theories to decide how to encourage LGB participation in surveys. Leverage-salience theory contends that different aspects of survey requests (e.g., topic, incentive, appeal to community involvement) and the amount of emphasis researchers place on those aspects influence whether individual sample members respond

to surveys. The way different aspects influence participation will vary by sample members because individuals will vary in what aspects they value. The survey features that researchers promote will then have different influence on sample members. What one sample member positively values about a survey request and increases their likelihood of responding may be something that another sample member does not positively value and does not increase their likelihood of participating. For example, one sample member may value community involvement while another sample member values a survey's incentive. If the researcher emphasizes the incentive in the survey request, but does not mention community involvement, then the second sample member is more likely to respond to the survey than the first sample member is. Applying leverage-salience theory to LGB survey participation would suggest that if LGB group identity is important to a LGB sample member, they view LGB identity positively, and researchers make it salient in the survey request, then the sample member would respond to the survey.

Similarly, social exchange theory explains survey participation through benefits, costs, and trust. Under the theory, sample members respond to survey requests when their perceived benefits of responding outweigh their expected costs, and when sample members trust that they will receive the benefits. Social exchange theory posits that researchers can use multiple aspects of survey requests to increase the perceived benefits of participation, reduce expected costs, and establish a sense of trust. For example, researchers increase benefits of participation by providing incentives and establish a sense of trust by providing incentives in advance. Incentives provide tangible benefits and providing incentives in advance establishes trust. Advance incentives encourage

participation by drawing upon a sense of reciprocal obligation to help someone (the researcher) who provided benefits. Application of social exchange theory to surveying LGB people suggests that appealing to a sense of LGB group identity may encourage LGB participation because it establishes trust through providing an accepting, non-stigmatizing context that does not deny the existence of LGB identity and increases benefits by providing LGB people an opportunity to tell their stories and have their voices heard. The accepting context also decreases perceived costs of outing oneself in a survey.

Survey Methods to Address LGB Concealment. In interviewer-administered surveys, researchers can encourage disclosure of LGB and same-sex couple identities by constructing private and accepting contexts that LGB people view favorably. For example, they can use mixed-mode designs to ask sensitive questions: The enhanced privacy of self-administered survey modes leads respondents to report more socially undesirable and stigmatized behaviors (Tourangeau & Yan 2007; Tourangeau & Smith 1996), including stigmatized LGB identity (Badgett & Goldberg 2009; MacCartney, Badgett, & Gates 2007). Research also suggests that veiled reporting that offers additional privacy beyond self-administered modes alone increases the percent of LGB respondents than self-administered modes alone (Coffman, Coffman, & Marzilli Ericson 2013).⁴

⁴ Veiled reporting, also known as the unmatched count or list response technique, is a method for reducing social desirability in surveys. The method consists of randomly assigning respondents to one of two groups. Respondents in one group are asked to report how many of a certain number of non-sensitive items are true for themselves. Respondents in the other group are asked the same question, but an additional sensitive item is included in the list (e.g., “I am not heterosexual”). Researchers can determine for what percent of the population the sensitive item is true by examining the difference in true reports between the two groups (Coffman, Coffman, & Ericson 2013; Droitcour, et al. 1991).

When researchers do not ask about sexual orientation in mixed-mode designs, interviewers must ask the questions to respondents directly. Interviewers may be uncomfortable asking questions about homosexuality because of social norms about stigmatized behaviors and may be doubly uncomfortable about asking these questions of certain types of respondents because interviewers are aware that social stigma follows homosexuality. Anecdotal evidence, for instance, suggests that some interviewers feel it is inappropriate to ask older people about their sexual orientation and sexual behaviors (Durso & Gates 2013). Training interviewers about why sexual orientation questions are important for surveys and on relevant privacy protections can help reduce interviewers intentionally skipping items and decrease refusal, confusion, and social desirability by respondents. For example, interviewer training can help with the potential reluctance that interviewers may have about asking certain individuals their sexual orientation (e.g., older people) and enable interviewers to handle negative feedback and respondent confusion about the sexual orientation question(s) (Badgett & Goldberg 2009; MacCartney, Badgett, & Gates 2007).

Methods to address the challenges of surveying LGB people in interviewer-administered surveys are important, but with increased use of a self-administered surveys—particularly mail surveys (Iannachionne 2011)—researchers require methods to address the participation and measurement challenges of surveying LGB people in these modes as well. Mail surveys have the advantage of providing increased privacy of reporting (Badgett & Goldberg 2009; MacCartney, Badgett, & Gates 2007), but little methodological research has examined other methods that researchers can use in mail surveys to address the challenges of surveying LGB people. One approach is that

questionnaire designers may be able to tailor mail surveys to be inclusive of LGB individuals to address these challenges.

1.1.2 LGB-Inclusive Cover Images

One way to tailor mail surveys to be LGB-inclusive is through cover image designs. Questionnaire designers sometimes use cover images to brand surveys, make them appealing, or to motivate or entertain respondents to encourage their participation (Dillman, Smyth, & Christian 2014; Couper 2008; Couper, Tourangeau, & Kenyon 2004; Dillman 1991; Nederhof 1988). Although the actual effect on response rates is mixed (e.g., no effect—McFarlane Geisen et al. 2010; Sonnenfeld et al. 2009; Gendall 1996; Dillman and Dillman 1995; Frey 1991; minimal increase—de Rada 2005; Gendall 2005; Nederhof 1988), the choice of cover image designs is important because the images can influence who responds and how respondents answer survey questions (Dillman, Smyth, & Christian 2014; Couper, Tourangeau, & Kenyon 2004; Grembowski 1988). Thus, *my first objective is to examine how an LGB-inclusive cover design in a general population mail survey influences who responds to the survey and the answers that they provide.*

In this dissertation, I empirically test whether an inclusive cover design (a mix of images of same-sex and opposite-sex couples and LGB and heterosexual individuals) in a general population mail survey of Nebraskans increases the participation of LGB people compared to a default cover design (a mix of images of only opposite-sex couples and heterosexual individuals) and a cover design without images. I expect that the inclusive cover design will motivate participation of LGB individuals and reduce their desire to conceal their sexual orientation and relationship identity. From a social exchange theory of survey participation (Dillman, Smyth, & Christian 2014), an LGB-inclusive cover

design may encourage LGB participation because it establishes trust through providing an accepting, non-stigmatizing context that does not deny the existence of LGB identity and increases the benefits of participating by providing LGB people an opportunity to tell their stories and have their voices heard. Because individuals tend to choose activities associated with salient aspects of their identities and tend to support institutions that embody these activities (Ashforth & Mael 1989), cover images that brand the survey as LGB-inclusive may encourage LGB participation by drawing on a sense of LGB group identity. Specifically, I hypothesize that an LGB-inclusive cover image design will increase the percent of LGB respondents because it brands the survey as inclusive of homosexuality and appeals to a sense of LGB group identity (Puntoni, Vanhamme, & Visscher 2011; Borgerson, et al. 2006; Oakenfull & Greenlee 2005; Tuten 2005; Bhat, Leigh, & Wardlow 1996). Likewise, I hypothesize that an LGB-inclusive cover design will increase the percent of respondents identifying as being in a same-sex relationship.

LGB-inclusive cover images in surveys may work akin to LGB-tailored advertisements. Once used predominantly in advertisements in LGB outlets, companies are increasingly using LGB-inclusive tailoring in advertisements directed toward mass audiences in print, television, and other media (Italie 2013; Borgerson, et al. 2006; Oakenfull & Greenlee 2005). Companies including IKEA, Calvin Klein, Banana Republic, American Airlines, Amazon-Kindle, Crate & Barrel, Coca Cola, Chevrolet, and Honey Maid, among others, feature LGB individuals and same-sex couples and their families in advertisements (Merevick 2014; *Huffington Post* 2014; Solomon 2014; Italie 2013; Oakenfull & Greenlee 2005; Bhat, Leigh, & Wardlow 1996). Other companies employ LGB spokespeople for their products, such as Cover Girl's, JC Penney's, and

Beats Music's use of lesbian glitterati, Ellen DeGeneres (Judkis 2014; *Huffington Post* 2014; Sieczkowski 2012). LGB people, advocates, and supporters have largely celebrated the inclusivity of these advertisements, and evidence suggests that the advertisements may be effective at garnering the business of LGB individuals and their supporters and creating positive brand perceptions among these groups (Tuten 2005; Peñaloza 1996).

Other individuals and groups, however, have responded negatively to LGB-tailored advertisements with online comments, Tweets, emails, and statements, such as by the group One Million Moms, denouncing homosexuality and LGB-inclusivity, and calling for boycotts of companies that embrace LGB-inclusivity (Solomon 2014; *Huffington Post* 2014; Sieczkowski 2012). In fact, some research suggests that LGB-tailored advertisements may lead to a backlash from non-LGB people in the form of negative brand perception and reducing purchase intentions (Hooten, Noeva, & Hammonds 2009). In surveys, this backlash may be in the form of negative perceptions of the research and reduced motivation to participate. Thus, while LGB-inclusive tailoring of general population survey cover designs may help address the participation and measurement challenges associated with surveying LGB individuals and same-sex couples, the methods may negatively affect the participation and measurement of non-LGB people if they view the LGB tailoring unfavorably or as biased and coming from a researcher supportive of homosexuality.

Research about LGB-tailoring in advertisements suggests that tolerance of homosexuality, implicit vs. explicit imagery⁵, and gay vs. lesbian imagery all influence non-LGB people's reactions. In general, people who are less tolerant of homosexually

⁵ Implicit imagery is LGB iconography and symbolism such as a rainbow flag or pink triangle. An example of explicit LGB imagery is a picture of a gay couple (Um 2012; Oakenfull & Greenlee 2005).

react unfavorably to LGB-tailored advertisements (Puntoni, Vanhamme, & Visscher 2011; Oakenfull & Greenlee 2005; Bhat, Leigh, & Wardlow 1996). However, research shows non-LGB people view advertisements that use solely images of lesbians more favorably compared to only images of gay men (Hooten, Noeva, & Hammonds 2009; Oakenfull & Greenlee 2005) and that non-LGB people react more favorably to implicit LGB-imagery than explicit LGB-imagery (Oakenfull & Greenlee 2005). Explicit LGB-inclusive tailoring of surveys (including both gay men and lesbians), thus, may turn off those who are intolerant of homosexuality in ways that make them not respond to the surveys.

Drawing on the social exchange theory of survey participation (Dillman, Smyth, & Christian 2014), an LGB-inclusive cover design may reduce trust of some non-LGB respondents if they view the inclusive cover images as offensive or perceive the research as biased in favor of homosexuality. Similarly, the costs of responding may increase for some non-LGB respondents if they perceive participation as helping a researcher with views and an agenda opposite to theirs on homosexuality. I hypothesize that an LGB-inclusive cover design will decrease participation of people less tolerant of homosexuality (e.g., males, older individuals, people with lower education levels, political conservatives, and more religious individuals—Pew Research 2013b, 2013c; Baunach 2012) because they view the inclusive design unfavorably or as biased. Thus, the inclusive cover design may reduce overall response rates and change the demographic makeup of the completed sample. Conversely, LGB-inclusive tailoring of survey cover images may also serve to encourage the participation of non-LGB respondents who know

an LGB person (e.g., family and friends of LGB people) or who are supportive of LGB rights and equality (e.g., political liberals).

1.1.3 Visual Context Effects

Another potential effect of LGB-inclusive tailoring of survey cover image designs is that the images may influence *how* respondents answer survey questions through context effects. Visual context effects occur when images in a questionnaire act as cues for what questions mean or what information respondents should retrieve or judge to be relevant for responses (Shropshire, Hawdon, & Witte 2009; Couper, Conrad, & Tourangeau 2007; Couper, Tourangeau, & Kenyon 2004; Witte, et al. 2004).

Gricean principles of cooperative communication suggests that speakers tend to provide useful and relevant information (Grice 1978, 1975), and in surveys these principles translate into respondents often perceiving that all information, even images, that researchers provide to them is relevant to their survey tasks (Schwarz 1996). For example, in web surveys, Couper and his colleagues (2004) found that respondents reported more instances of shopping when an image of people grocery shopping accompanied the question than an image of people shopping for clothes. In another study, support for protecting threatened and endangered species significantly increased when an image of the animal accompanied the questions than when no image appeared next to the questions (Witte, et al. 2004). In a mail survey with an LGB-inclusive cover image design, visual context effects could occur if the cover images aimed at motivating participation of LGB individuals prompts retrieval of specific information that respondents then incorporate into their reports. This leads to the possibility that the images used to encourage participation may affect measurement and that differences in

the content of those images (i.e., images of same-sex couple families vs. only heterosexual families) may lead to differences in the way that the images affect measurement. For example, images of same-sex couples and same-sex couples with children may change how respondents construct their meaning of homosexuality (Ringer 1994). Because people tend to view some depictions of homosexuality more favorably than others (Hooten, Noeva, and Hammonds 2009; Oakenfull and Greenlee 2005), the images that researchers choose to represent homosexuality can conjure up a specific version of homosexuality for respondents that may influence how they understand LGB issue questions and what information they use to formulate their answers. Respondents may retrieve a positive portrayal of homosexuality from cover images of same-sex couples with children when responding to questions about LGB issues⁶, such as about same-sex marriage, and formulate their attitude based upon this definition of homosexuality.

Additionally, given the politically charged nature of LGB issues (e.g., Andersson, et al. 2013; Suhay & Epstein Jayaratne 2013; Lax & Phillips 2009; Barth, Overby, & Huffmon 2009), the images will likely affect reports to LGB rights questions differently, depending on the respondent's political affiliation or views of homosexuality (Oakenfull & Greenlee 2005; Tuten 2005; Bhat, Leigh, & Wardlow 1996). US political party affiliation is one proxy measure for these groups. Republicans who tend to be less tolerant of homosexuality (Pew Research 2013) may interpret a survey as liberally biased in favor of homosexuality when it includes LGB-inclusive cover images. Furthermore, they may view a cover design that features images of same-sex couple families with

⁶Attitudes on gay marriage/civil unions, the Defense of Marriage Act (DOMA), rights for gay and lesbian couples to adoption children, protections for gay men and lesbians from housing and job discrimination, and their general feeling toward gay men and lesbians.

children as a legitimate family equal to traditional heterosexual couple families as offensive. The perception of research as biased against one's views or finding the images as offensive may influence how they respond to issue questions, motivating them to take a stand by giving reports opposing LGB rights. In comparison, those with moderate views on homosexuality may be influenced to give more liberal reports. I hypothesize that Democrat and Independent respondents to a survey with an LGB-inclusive cover design will report more liberal attitudes to questions about LGB issues whereas Republican respondents to a survey with an LGB-inclusive cover design will report more conservative attitudes to questions about LGB issues.

1.1.4 LGB-Inclusive Marital Status Question Wording

A second challenge to successfully identifying and surveying LGB individuals is obtaining accurate reports of their relationship status. The legal status of same-sex relationships in the United States is in flux with some states recognizing same-sex marriages and others banning them and changes to laws occurring on what often seems like a daily basis. Massachusetts first recognized same-sex marriages in 2003. Since then, the number of states recognizing same-sex marriages continues to increase, with some other states recognizing civil unions or domestic partnerships. Currently, 33 states and Washington, DC legally recognize and perform same-sex marriages, but other states ban same-sex marriage (freedomtomarry.org). Additionally, with the 2013 decision in *United States v. Windsor*, the United States Supreme Court struck down a section of the federal government's Defense of Marriage Act (DOMA), thus extending legally married same-sex couples the same federal rights as legally married opposite-sex couples regarding social security, tax, immigration, federal employment, and veteran and military benefits

(freedomtomarry.org). Recent rulings by United States District Courts declaring some state bans on same-sex marriages unconstitutional (Disis 2014) add to the complexity and limbo of the recognition of same-sex marriages and may potentially lead to more states legally recognizing same-sex marriages.

The dynamic state of legal recognition of same-sex relationships and the variation in regional and contextual stigma regarding same-sex relationships (e.g., rural Mississippi vs. Castro District of San Francisco, conservative workplace vs. evening out with friends, health insurance forms vs. social survey) add complexity to measuring the relationship and marital status of all respondents in general population surveys. Some same-sex couples are not legally married, but in similarly committed partnerships and live in states that do not legally recognize same-sex marriages (e.g., Nebraska). Others may be legally married in one state, but live in a state that does not recognize their union (e.g., get married in Iowa, but live in neighboring Nebraska), while other same-sex couples are legally married and live in states that recognize their marriages (e.g., Iowa). Traditionally worded marital status survey questions may not accurately capture the relationship status of same-sex couples given the variation and complexity that current laws produce.

A relationship/marital status survey question in its most common form assumes heterosexual relationships (i.e., married, separated, divorced, single). Cognitive interview and focus group testing of marital status questions shows that this wording often does not represent the experiences of LGB individuals (Walther 2013; DeMaio & Bates 2012; Ridolfo, Perez, & Miller 2011). Because the wording does not represent the experiences of LGB people, they may have difficulty completing the survey response process of comprehending the question, recalling relevant information, judging what is an

appropriate response, and then mapping their answer to the provided categories (Tourangeau, Rips, & Rasinski 2000). LGB respondents may have particular difficulty understanding whether the question is asking about legal marital status, judging what an appropriate response is, and then mapping their response to categories that do not explicitly recognize same-sex relationships. With these questions, LGB individuals may be forced to deny the significance of their relationship by reporting “single/never married” or may misreport as “married” to signify their partnership even if not legally married (e.g., DeMaio, Bates, & O’Connell 2013; Gates 2009). For example, Lofquist (2012) showed in the American Community Survey (ACS) that neither being legally married nor the relevant state marriage laws are the primary factors leading same-sex couples to classify their relationship as “now married.” Rather, other factors, such as having children and demographic characteristics (e.g., older couples are more likely to report being “married”), more strongly influenced marital status reports.

In additional work, Bates and her colleagues (2012) found that the relationship/marital status terms used by members of same-sex couples depended on: 1) context: degree of acceptance, 2) situation: formal versus informal setting, and 3) forms: perceived legality. This research suggests that the level of acceptance, formality, and legality communicated in the question wording may influence how LGB individuals answer the relationship/marital status question. *My second objective is to investigate the effect that LGB-inclusive marital status categories have on estimates for the prevalence of same-sex couples, unit and item nonresponse, and how non-LGB respondents report their marital status.*

I compare the percent of respondents identifying as in a same-sex relationship between a marital status question that includes explicit response categories that are inclusive of same-sex couples and differentiates them from categories for opposite-sex relationships (e.g., same-sex married, same-sex unmarried partner, opposite-sex married, opposite-sex unmarried partner) to a marital status question that includes typical response categories (e.g., married, never married). I hypothesize that more respondents will identify as being in a same-sex relationship in the marital status question wording that includes LGB-inclusive categories because the wording communicates an accepting context and provides respondents in same-sex relationships categories that reflect their relationships.

While adding LGB-inclusive response categories may enhance the quality of data for a minority of respondents, it may also influence participation and how non-LGB respondents report their marital status. For example, cognitive interview testing of adding “same-sex” and “opposite-sex” categories for marital status questions revealed that some socially conservative participants felt such changes would be offensive and pointlessly politically correct (Ridolfo, Perez, & Miller 2011). These participants further described that they would likely still respond to a survey that included these response options, but this may have been a socially desirable response during the cognitive interview. LGB-inclusive wording may turn off others in ways that make them not respond to surveys.

Other respondents may respond to the survey but skip the offending questions, leading to item nonresponse. Item nonresponse may also occur because respondents are unfamiliar with terminology in questions and then are unable to judge which response option to select (Beatty & Herrmann 2001), such as being unfamiliar with the LGB-

inclusive wording. In this dissertation, I examine how LGB-inclusive marital status question wording affects unit and item nonresponse in comparison to a traditionally worded marital status question. I hypothesize that respondents less tolerant of homosexuality will be less likely to respond to a survey (unit nonresponse) with an LGB-inclusive marital status question because they find the LGB-inclusivity offensive or see the research as biased. Additionally, I hypothesize that item nonresponse will be higher for an LGB-inclusively worded marital status question compared to a traditionally worded marital status question because some respondents (particularly among those less tolerant of homosexuality) may skip it because they find it offensive and others may find the additional response options confusing and be unable to select a response because they are unfamiliar with sexuality terms (Powell, et al. 2010; Haseldon & Joloza 2009).

Misreports of marital status by non-LGB respondents is another possible effect of LGB-inclusive marital status question wording. Non-LGB respondents may incorrectly comprehend the wording or may mistakenly mark their relationship status as a “same-sex” option, leading to an over count of same-sex couples. Older individuals and those who do not speak and understand English well may be more likely to mistakenly select a “same-sex” couple relationship option because of difficulty reading response options on a mail survey (Black, et al. 2007) or because they are unfamiliar with terms such as “same-sex married” and “opposite-sex married” (similar to findings about people not understanding terms related to sexual orientation—Powell, et al. 2010; Haseldon & Joloza 2009). Discordant reports between sexual orientation and marital status questions (i.e., identifying as heterosexual/straight but selecting a “same-sex” relationship category) signify these misreports. I examine the rate of discordant sexual orientation and marital

status reports among heterosexual respondents to the LGB-inclusive question wording and examine whether certain respondent demographic characteristics (e.g., age, education level) are associated with discordant reports to these questions. I hypothesize that older individuals and those with lower education levels will be more likely to report discordant relationship and sexual orientation statuses because of difficulty understanding the question or marking a response on a mail survey (Black, et al. 2007).

1.1.5 Interaction of Cover Design and Question Wording

This experiment investigates whether the effects of LGB-inclusive marital status question wording depends on the cover image design on the survey. It examines tailoring both a survey's cover image and marital status question wording. I reason that both elements draw on a sense of LGB group identity and communicate an accepting context that encourages LGB participation and disclosure of their sexual orientation and relationship identity, and that for example, an LGB-inclusive cover design makes the LGB-inclusive marital status question seem more accepting and important to LGB people. However, LGB-inclusive tailoring may adversely affect participation and measurement from non-LGB individuals, whereby the LGB-inclusive cover design increases the likelihood that people will not respond to a survey with an LGB-inclusive marital status question. Thus, I examine the effects of the interaction of the cover designs and question wordings on response rates, and the percent of respondents who identify as LGB and report being in a same-sex relationship.

I hypothesize that the LGB-inclusive question wording will decrease response rates more in the inclusive cover design treatment than the default cover design treatment, and that the inclusive question wording will increase the percent of LGB respondents more in

the inclusive cover design treatment than in the default cover design treatment.

Additionally, I expect that the inclusive question wording will increase the percent of respondents who report being in a same-sex relationship more in the inclusive cover design than in the default cover design treatment.

1.1.6 Public Opinion of LGB Issues

In this dissertation, I also answer the question: Is Nebraska as conservative on LGB issues as people often assume it is? National surveys indicate that US public opinion of LGB issues is quickly changing with increasing support of LGB rights, such as same-sex marriage (Pew Research 2013). Popular discourse regarding public opinion about social issues, such as LGB issues, has generally fallen under two (somewhat interrelated) frames: a red vs. blue states culture war (Pew Research 2014; Rasmussen 2006; Fiorina 2006; Adam 2003; Laumann 2004; Hunter 1991) and opinion differences between urban vs. rural citizens (Kayzak 2012; Salka & Burnett 2011; Eldridge, Mack, & Swank 2006; Snively, et al. 2004). Scholarly debate exists, however, about the validity of these frames reflecting public opinion about social issues like LGB rights (cf. Levendusky & Pope 2011; Abramowitz & Saunder 2008; Fiorina, Abrams, & Pope 2008, 2006; Burnett & Salka 2009). Thus, *my third objective is to compare Nebraskans' opinions of LGB issues to national public opinion and examine differences in opinions about LGB issues between urban and rural Nebraskans.*

Seeing how some people can depict Nebraska as being conservative, “red” state on LGB issues is easy. Nebraska voters supported a ban on same-sex marriage in 2000 (Adam 2003). Some candidates for elected office in Nebraska tout “traditional family values” in their campaigns and some churches and people display yard signs advocating

for the protection of “religious liberty” and traditional marriage. Nebraska’s current Republican governor even asks potential appointees their stance on LGB issues, saying that “most Nebraskans want a conservative government” and a majority believe marriage is between a man and a woman (Deijka 2014).

However, LGB rights in Nebraska are increasing. The University of Nebraska (Reed 2012), 246 Nebraska school districts (Dejka 2013), and various hospitals (Glissmann 2013), businesses, and city and county governments (Funk 2013) have extended insurance benefits to same-sex couples. The state’s two largest cities have also enacted ordinances that protect LGB people from discrimination in employment and housing (Hicks 2013; Reuters 2012), and people and elected officials continue to advocate for LGB rights in the Nebraska Legislature, Nebraska Supreme Court, and elsewhere (*Associated Press* 2014; Stoddard 2014; Martin 2014). Examining Nebraskans’ opinions on LGB issues will identify if Nebraska is truly as conservative as people often assume or if public opinion of Nebraskans is similar to national opinions regarding LGB issues. Based on recent expansions of LGB rights in Nebraska, I hypothesize that public opinion of Nebraskans is more supportive of LGB rights than is often assumed and mirrors public opinion nationally.

Nebraska also contains a significant urban-rural population split. With roughly 1.8 million people in 2013, Nebraska’s population is split between the urban centers of Omaha and Lincoln and the rural remainder of the state. Therefore, following the urban-rural frame of LGB issues, one would expect to see public opinion differences between people from urban and rural areas of Nebraska. I hypothesize that the residents in Omaha and Lincoln will hold more liberal opinions about LGB issues than the rest of the state,

thus reflecting the urban-rural frame of public opinion of LGB issues. In fact, political coverage in Nebraska already employs this framing, with articles that report polls showing more support for Democratic candidates in Omaha and Lincoln and more support for Republican candidates in the rest of the state (Walton 2014). In terms of substantive LGB policies, differences emerge between urban and rural Nebraska. Both Omaha and Lincoln have city ordinances that protect LGB people from discrimination in employment and housing (Hicks 2013; Reuters 2012), while other parts of the state have been less proactive with these types of ordinances.

In this dissertation, I report levels of support for same-sex marriage, adoption of children by gay and lesbian couples, and policies to protect gays and lesbians from housing and employment discrimination. In my analyses, I compare Nebraskans' opinions about LGB issues to national public opinion data from the 2012 American National Election Studies (ANES). I examine support for same-sex marriage, rights of gay and lesbian couples to adopt children, and protections for gays and lesbians from housing and job discrimination, and their general feeling towards gay men and lesbians. I also compare the opinions about these issues between respondents from Omaha and Lincoln and those from the rest of the state.

1.2 Research Design

1.2.1 2013 Nebraska Annual Social Indicators Survey (NASIS)

In this dissertation, I analyze data from the 2013 Nebraska Annual Social Indicators Survey (NASIS), which included LGB-inclusive cover design and question wording experiments. NASIS is an annual, statewide, omnibus mail survey that the University of Nebraska–Lincoln's (UNL) Bureau of Sociological Research (BOSR)

administers to a probability sample of Nebraska adults age 19 years and older. Survey Sampling International (SSI) provides the sample for NASIS, using address-based sampling (ABS) to randomly select household addresses from across Nebraska from the USPS's delivery sequence file (DSF). SSI supplied a sample of n=6,000 addresses for NASIS 2013. On June 24, 2013, BOSR mailed sampled households an initial survey packet that included a cover letter, NASIS questionnaire, and a postage-paid returned envelope. The cover letter included information about NASIS and within-household selection instructions to select as the respondent the adult member of the household who was age 19 or older and who would have the next birthday after July 1, 2013. A postcard with a separate postage-paid return envelope was also included in the initial survey package, asking respondents if they were willing to participate in additional BOSR research and to give their contact information if interested. NASIS 2013 was a booklet style questionnaire with 175 items. The questionnaires were printed in black and white. As an omnibus survey, NASIS included questions on several topics, including about roads, wind energy, recycling, invasive plant species, political and social issues, and demographics (NASIS 2012-2013 Methodology Report). The NASIS questionnaire and recruitment materials are included in Appendix A.

BOSR sent three additional follow-up mailings for NASIS 2013: a reminder postcard sent to all nonrespondents on June 28, 2013 and two replacement survey packets sent to nonrespondents on July 22, 2013 and August 16, 2013. By the end of data collection on September 16, 2013, a total of n=1,608 households responded to NASIS for a response rate of 27.3% (AAPOR RR1). Data on the number of survey returns by mailing date appear in Appendix A.

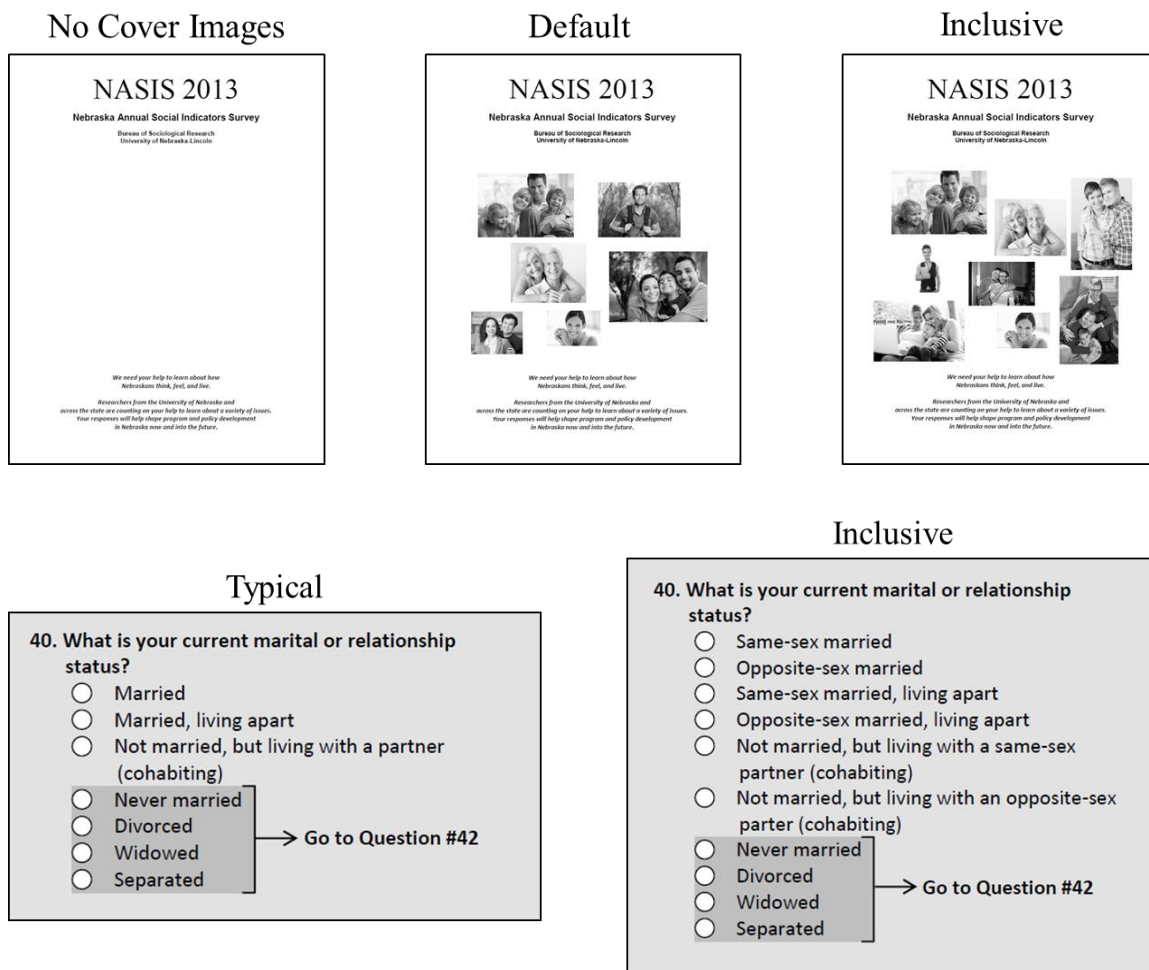


Figure 1.1: Cover treatments: No Cover Images, Default, and Inclusive. Question Wording Treatments: Typical and Inclusive.

1.2.2 Experimental Treatments

Cover Designs. Sampled addresses for NASIS 2013 were randomly assigned to one of three cover image designs (no cover image, default, and inclusive) and one of two marital status question wordings (typical and inclusive), making it a fully crossed 3x2 experimental design with the ability to examine interaction effects (Figure 1.1). Only the survey name, tag line, and sponsorship appeared on the cover without images. A mix of images of opposite-sex couple families and individuals displaying themselves in typical gender ways were included in the default cover design treatment. The inclusive cover

design featured a mix of images of same-sex and opposite-sex couple families and individuals.

Question Wordings. The typical question wording consisted of the marital status question wording used on previous waves of NASIS, and its response options were adapted to provide both “same-sex” and “opposite-sex” categories for the acceptance question wording. Even though Nebraska currently bans same-sex marriages, the same-sex married response category was included in the acceptance question wording because some same-sex couples in Nebraska may be legally married in other states (such as in neighboring Iowa), and thus may identify as “married” even though they live in Nebraska.

Larger versions of the three cover designs appear in Appendix A. Table 1.1 displays the initial sample sizes, completed sample sizes, and response rates for the six experimental treatments.

Table 1.1. Experimental treatment assigned group size, completed sample size, and response rates.

	Assigned Group Size (n)	Completed Sample Size (n)	Response Rate (%)
Cover Design + Question Wording			
No Cover Image + Typical	1,000	299	29.9
No Cover Image + Inclusive	1,000	276	27.6
Default + Typical	1,000	245	24.5
Default + Inclusive	1,000	248	24.8
Inclusive + Typical	1,000	271	27.1
Inclusive + Inclusive	1,000	269	26.9
Total	6,000	1,608	26.8

LGB Issue Questions. NASIS 2013 included six questions about general feelings toward gay men and lesbians, same-sex marriage, the Defense of Marriage Act (DOMA), adoption by gay and lesbian couples, and protections for gay men and lesbians from

housing and job discrimination. The wording of all NASIS 2013 questions appears in Appendix A.

1.3 Outline of Dissertation

The next three chapters are three stand-alone articles that report the findings from each of my three research objectives. In chapter 2, I report the results of my examination of how an LGB-inclusive cover design in a general population survey influences who responds to the survey and the answers that they provide. My hypotheses are:

- H 2-1: *Response rates will be lower for a survey with an LGB-inclusive cover design because fewer people who are less tolerant of homosexuality (e.g., males, older individuals, people with lower education levels, political conservatives, more religious people) will respond because they view the inclusivity unfavorable, as offensive, or as biased. Increasing LGB participation among supporters of LGB rights may also affect response rates to the LGB-inclusive cover design. However, because of the small size of the LGB population, the net effect on response rates will likely be no difference or lower response rates from fewer non-LGB people responding.*
- H 2-2: *More respondents will identify as LGB in a survey with an LGB-inclusive cover image design because it brands the survey as inclusive of homosexuality and appeals to a sense of LGB group identity.*
- H 2-3: *More respondents will report being in a same-sex relationship in a survey with an LGB-inclusive cover design because it brands the survey as inclusive of homosexuality and appeals to a sense of LGB group identity.*
- H 2-4: *The characteristics of respondents to a survey with an LGB-inclusive cover design will be demographically, politically, and religiously different from a survey with a default cover design or one without cover images because people less tolerant of homosexuality (i.e., males, older individuals, people with lower education levels, political conservatives, and more religious individuals) may not respond because they view the inclusivity unfavorably, as offensive, or as biased.*
- H 2-5: *Respondents to a survey with an LGB-inclusive cover design will report more liberal attitudes to LGB issue questions because pictures of same-sex couple families may set a positive image of homosexuality that respondents draw upon when formulating their reports to LGB issue questions.*
- H 2-6: *Democrat and Independent respondents to a survey with an LGB-inclusive cover design will report more liberal attitudes to questions about LGB issues*

whereas Republican respondents to a survey with an LGB-inclusive cover design will report more conservative attitudes to questions about LGB issues.

In chapter 3, I report the results of my investigation of the effect that LGB-inclusive marital status question wording has on estimates for the prevalence of same-sex couples and responses from non-LGB respondents. My hypotheses are:

- *H 3-1: Response rates will be lower for a survey with an LGB-inclusive marital status question because people less tolerant of homosexuality may not respond because they find LGB-inclusivity offensive. Increasing LGB participation may also affect response rates to the LGB-inclusive wording treatment. However, because of the small size of the LGB population, the net effect will likely be a reduction in response rates.*
- *H 3-2: More respondents will identify as being in a same-sex relationship in the marital status question wording treatment that includes LGB-inclusive response options because the question wording communicates an accepting context and provides respondents in same-sex relationships appropriate categories that reflect their relationships.*
- *H 3-3: The characteristics of respondents to a survey with an LGB-inclusive marital status question will be demographically, politically, and religiously different because people less tolerant of homosexuality (i.e., males, older individuals, people with lower education levels, political conservatives, and more religious individuals) may not respond because they view the inclusivity unfavorably or offensive.*
- *H 3-4: Item nonresponse will be higher for an LGB-inclusively worded marital status question compared to a traditionally worded marital status question because some respondents (particularly those less tolerant of homosexuality) may skip it because they find it offensive and others may find the additional response options confusing and be unable to select a response.*
- *H 3-5: The rate of discordant reports of sexual orientation and marital status will be higher for older individuals and those with lower education levels in the inclusive question wording treatment because of difficulty understanding the question or marking a response on a mail survey.*

In chapter 3, I also examine the interaction of the three cover designs and two marital status question wordings for response rates and the prevalence of same-sex couples. My specific hypotheses are:

- H 3-6: *The LGB-inclusive question wording will decrease response rates more in the inclusive cover design treatment than the default cover design treatment.*
- H 3-7: *The inclusive question wording will increase the percent of LGB respondents more in the inclusive cover design treatment than in the default cover design treatment.*
- H 3-8: *The inclusive question wording will increase the percent of respondents who report being in a same-sex relationship more in the inclusive cover design treatment than in the default cover design treatment.*

In chapter 4, I examine if Nebraska is as conservative on LGB issues as people often assume by comparing public opinion of Nebraskans on LGB issues to national opinion. My hypothesis is:

- H 4-1: *Nebraskans' public opinion about LGB issues will mirror national public opinion.*
- H 4-2: *Residents in Omaha and Lincoln will hold more liberal opinions about LGB issues than the rest of the state, thus reflecting the urban-rural frame of public opinion of LGB issues.*

In the final chapter, chapter 5, I summarize the findings from chapters 2, 3, and 4; describe their significance and implications; identify the limitations of my research; and outline directions for future research.

**CHAPTER 2: THE EFFECTS OF COVER IMAGES ON PARTICIPATION AND
REPORTS IN A GENERAL POPULATION MAIL SURVEY:
EXAMINING LGB-INCLUSIVE TAILORING**

Researchers are often interested in creating prevalence estimates of subgroups and understanding their attitudes, behaviors, and experiences, but sometimes these are hard-to-survey populations (Tourangeau 2014; Mulry 2014; Berry & Gunn 2014). Gaining their participation in general population surveys can be challenging (Stoop 2014; Olson, Vargas, & Williams 2014; Becker, et al. 2014; Hillygus, et al. 2010). Some may not find the survey interesting, while others may not want to disclose their subgroup identity. Survey researchers, therefore, require methods to encourage subgroup participation.

One method is to tailor/frame survey requests in ways to encourage subgroup participation (Haan & Onega 2014). In mail surveys, questionnaire designers sometimes choose cover image designs that relate to research goals and survey topics as a way to brand surveys and encourage participation (Dillman, Smyth, & Christian 2014). The choice of cover images is important because they can influence response rates, who responds to the survey, and reports to questions (Dillman, Smyth, & Christian 2014; Gendall 2005; Couper, Tourangeau, & Kenyon 2004; Dillman 1991; Grembowski 1988; Nederhof 1988). Little methodological research exists, however, about how tailoring survey cover designs to be inclusive of hard-to-survey subgroups affects who responds to surveys and the answers that they provide.

In this chapter, I examine the use of cover images to encourage lesbian, gay, and bisexual (LGB) people to participate and to disclose their sexual orientation in a general population survey. Researchers across many fields need survey data from LGB people to

estimate the LGB population's size and to understand LGB people's attitudes, behaviors, and experiences (Baumle 2013; Badgett & Goldberg 2009; Meezan & Martin 2009; Meyer & Northridge 2007; Gates & Sell 2007). LGB people, however, are a hard-to-survey population (Berry & Gunn 2014). Some may not respond to a survey because they find it unappealing, while others may not participate or decide to conceal their sexual orientation because of the social stigma attached to homosexuality (Herek 2011; Gates 2011; Herek 2009; Sylva, et al. 2009; Ragins, Singh, & Cornwell 2007; Schope 2002; Catania, et al. 1990). Inclusively tailoring survey cover designs to draw upon a sense of LGB identity and communicate an accepting context—akin to the aims of LGB-tailored advertisements—may be one method to address these challenges (Puntoni, Vanhamme, & Visscher 2011; Borgerson, et al. 2006; Oakenfull & Greenlee 2005; Tuten 2005; Bhat, Leigh, & Wardlow 1996).

LGB-inclusive cover images, however, may also affect reports to survey questions and the participation of some sample members if they view the LGB-inclusivity unfavorably, as offensive, or see the research as biased. Here, I report about a methodological experiment embedded in a general population mail survey of Nebraska residents to examine how an LGB-inclusive cover design influenced who responded to the survey and the answers that they provided to questions about LGB issues.

2.1 LGB-Inclusive Cover Image Designs

2.1.1 Cover Images

The leverage-salience (Groves, Singer, & Corning 2000) and social exchange (Dillman, Smyth, & Christian 2014) theories of survey participation both explain how aspects of survey requests influence participation. Leverage-salience theory contends that

different features (e.g., topic and incentive) and the amount of emphasis researchers place on those features influence whether sample members respond. How different features influence participation will vary by sample members because individuals will vary in what components they value and the amount of value they place on them. The survey features that researchers promote will then have different influence on sample members' participation. Similarly, social exchange theory explains survey participation through benefits, costs, and trust. The theory posits that sample members respond when their perceived benefits of participating outweigh their expected costs, and when they trust that they will receive the benefits. Researchers, thus, can use multiple design features (e.g., cover letter appeals and incentives) to increase the benefits of participation, reduce expected costs, and establish trust.

Both the leverage-salience and social exchange theories suggest that cover images may be instrumental in encouraging survey participation. Researchers can design covers for mail questionnaires to convey the survey's importance and to make the survey salient, interesting, attractive, and memorable (Dillman, Smyth, & Christian 2014; Dillman 1991; Nederhof 1988). Generally, guidelines advise questionnaire designers to select a design that identifies the survey's sponsor and topic and appeals to as much of the target population as possible, such as using photos that sample members will recognize (Dillman, Smyth, & Christian 2014).

Findings about the effects of cover designs on response rates, though, are mixed. Some research shows that colored questionnaires (Edwards, et al. 2002; Fox, Crask, & Kim 1988) and cover images (de Rada 2005; Gendall 2004; Nederhof 1988) increase response rates to mail surveys. Other research, however, finds no significant differences

in response rates between mail questionnaires with or without cover images (e.g., McFarlane Geisen et al. 2010; Sonnenfeld et al. 2009; Gendall 1996; Dillman and Dillman 1995; Frey 1991).

The actual effect of including a cover image on response rates may be mixed because the choice of which images to place on a questionnaire's cover page may influence response rates. Grembowski (1988), for example, found that response rates were significantly higher for a cover design that portrayed a theme of water fluoridation compared to a cover design that portrayed a theme of dental care costs for the same survey.

The choice of a cover design might also influence *who* responds to surveys. For subgroups in a general population survey, choosing a cover design that draws upon group identities may be important for creating a sense that the survey pertains to them, recognizes their value as respondents, and communicates acceptance of their identity. Such a design, however, may discourage non-subgroup members' participation, if they view the design unfavorably, as offensive, or as biased.

2.1.2 Encouraging LGB Participation and Disclosure

LGB people are a hard-to-survey subgroup because some may be unmotivated to participate because they find the survey uninteresting or unaccepting of their identity, while others who do participate may be reluctant to identify their sexual orientation and same-sex relationship identities (Michaels 2013; Durso & Gates 2013; Gates 2011, 2010, 2009; Badgett & Goldberg 2009). Survey methods are important because different methods, such as interviewer-administered or self-administered modes, can affect LGB participation and disclosure and lead different estimates of the LGB population's size

(1.7% to 5.6%—Gates 2011). For example, recent data from the National Health Interview Survey estimates that 1.6% of Americans identify as gay or lesbian and 0.7% identify as bisexual, a lower estimate than past surveys (e.g., 3.5%—Gates & Newport 2013), possibly stemming from question wording and mode differences (Ward, et al. 2014; Hoffman 2014).

In addition to methods, concealment also affects these estimates. Gates (2010), for instance, estimates that around 10% of same-sex couples identified their relationships with terms such as “roommate” or “other non-relative” instead of identifying their same-sex relationship and consequently their sexual orientation in the Census.

These errors are significant because as a rare population, even small amounts of error can affect estimates of the LGB population’s size and the ability to identify them and their families for research (Savin-Williams & Joyner 2014; Lofquist & Lewis 2014; Carpenter & Gates 2008; Cheng & Powell 2005). Survey nonresponse and concealment from LGB people may result in undercounts of the LGB population. It may also limit generalizing findings to the entirety of the LGB population when those who do not participate or who do not identify as LGB systematically differ on variables of interest. When certain segments of the LGB population do not participate in a survey or conceal their identity, conclusions made about LGB people may be misleading or wrong (Schumm 2012). Researchers, therefore, should use methods to address participation concerns associated with LGB identity and social stigma.

Social Identity and Stigma. According to social identity theory, LGB people share a common sense of identity forged by shared non-heterosexual statuses (Angelini & Bradley 2010; Cox & Gallois 1996; Tajfel & Turner 1979). Social stigma, however,

follows LGB identity (Herek 2011; Ragins, Singh, & Cornwell 2007; Crocker, et al. 1998, Goffman 1963). Both social identity and stigma are important because they influence peoples' behaviors, thoughts, and emotions (Ragins, Singh, & Cornwell 2007; Deaux, & Ethier 2007; Levin & van Laar 2006; Miller & Major 2000). For example, as a stigmatized identity that is invisible, LGB people may learn or decide to conceal their LGB identity, including in surveys, to avoid possible negative outcomes of outing oneself, such as harassment, prejudice, and discrimination (Sylva, et al. 2009; Ragins, Singh, & Cornwell 2007; Schope 2002). However, people are more likely to be involved with activities and groups that embody their group identity (Ashforth and Mael 1989); thus, LGB people may be more likely to participate in a survey that draws upon their group identity through inclusive tailoring.

Disclosure. Disclosure theory suggests that LGB people may be more likely to disclose their stigmatized identity to people with whom they feel emotionally comfortable (Catania, et al 1996; Jourard 1971). When LGB individuals perceive an accepting context, they are more likely to disclose their sexual orientation (Bates, et al. 2012; Sylva, et al. 2009; Schope 2002). A survey's framing and context, therefore, are significant because LGB individuals are more likely to report their sexual orientation when there is a legitimate reason for collecting it and when the survey does not stigmatize homosexuality (Michaels 2013; Durso & Gates 2013). Calling attention to LGB identity in a survey may serve to call attention to a stigmatized status, but not recognizing LGB identity may also extend the sense of stigma because it denies LGB people's existence as part of the general population. Employing survey methods that

recognize LGB identity and remain sensitive to the stigma attached to it may encourage LGB participation and reduce concealment of LGB identity.

A cover design that draws on a sense of LGB group identity and communicates acceptance of that identity is one way to recognize LGB identity and thereby encourage their participation. The effects may be similar to the effects of LGB-tailored advertisements (Puntoni, Vanhamme, & Visscher 2011; Italic 2013; Borgerson, et al. 2006; Oakenfull & Greenlee 2005). LGB people, advocates, and their supporters have celebrated the inclusivity, and evidence suggests that the advertisements may be effective at garnering the business of LGB individuals and their supporters and positively influence their brand perceptions (Tuten 2005; Peñaloza 1996).

From both the social exchange and leverage-salience theories of survey participation (Dillman, Smyth, & Christian 2014; Groves, Singer, & Corning 2000), an LGB-inclusive cover design may encourage LGB participation because it establishes trust by communicating an accepting, non-stigmatizing context that recognizes the existence of LGB identity and increases the benefits of participating by providing LGB people an opportunity to tell their stories and have their voices heard. The accepting context may also lower perceived costs of outing oneself as LGB on a survey. Specifically, I hypothesize that an LGB-inclusive cover image design will increase the percent of LGB respondents and the percent who report being in a same-sex relationship because it brands the survey as inclusive and accepting of homosexuality and appeals to a sense of LGB identity (Puntoni, Vanhamme, & Visscher 2011; Borgerson, et al. 2006; Oakenfull & Greenlee 2005; Tuten 2005; Bhat, Leigh, & Wardlow 1996). Likewise, I hypothesize

that an LGB-inclusive cover design will increase the percent of respondents identifying as being in a same-sex relationship.

LGB-inclusive tailoring of survey cover images may also serve to encourage the participation of sample members who know an LGB person (e.g., family and friends of LGB people) or those supportive of LGB rights (e.g., liberals) because they positively value LGB-inclusivity (Lewis, 2011; Tuten 2005). I hypothesize that an LGB-inclusive cover design will increase participation among people who know an LGB person and political liberals.

2.1.3 Backlash

LGB-inclusive cover designs in general population mail surveys, however, may decrease participation among people who are less tolerant of homosexuality. As seen in advertising, LGB-inclusivity can lead to backlash in the form of reducing purchase intentions, negative brand perception, and boycotts (Hooten, Noeva, & Hammonds 2009; Oakenfull & Greenlee 2005; Bhat, Leigh, & Wardlow 1996). For example, some individuals and groups have responded negatively to LGB-tailored advertisements with online comments, Tweets, emails, and statements, such as by the group One Million Moms, denouncing homosexuality and LGB-inclusivity, and calling for boycotts of companies that embrace it (Solomon 2014; *Huffington Post* 2014; Sieczkowski 2012).

In surveys, this backlash might be negative perceptions of the research and reduced motivation to participate. Drawing on the social exchange and leverage-salience theories (Dillman, Smyth, & Christian 2014; Groves, Singer, & Corning 2000), an LGB-inclusive cover design may reduce trust of some sample members if they view the inclusive cover design unfavorably, as offensive, or perceive the research as biased in

favor of a gay rights agenda. Similarly, the costs of responding may increase if they perceive their participation as helping a researcher with LGB-favorable views and a conflicting agenda. I hypothesize that an LGB-inclusive cover design will decrease participation of people who have been shown to be less tolerant of homosexuality (e.g., males, older individuals, people with lower education levels, political conservatives, and more religious individuals—Pew Research 2013; Baunach 2012). Thus, I hypothesize that the inclusive cover design may reduce overall response rates and change the completed sample's demographic, political, and religious composition.

2.1.3 Visual Context Effects

In addition to influencing participation, images can also influence how respondents answer survey questions. Visual context effects occur when images in a questionnaire establish a context that influences how respondents comprehend questions, what information they recall or judge to be relevant for a response, and what they report (Shropshire, Hawdon, & Witte 2009; Couper, Conrad, & Tourangeau 2007; Couper, Tourangeau, & Kenyon 2004; Witte, et al. 2004). For example, an image of either people shopping for groceries or shopping for clothes can influence how respondents understand the vague concept of “shopping” in a question about shopping frequency (Couper, Tourangeau, & Kenyon 2004). Images can also influence judgments. For instance, respondents tend to judge their health as better when they see an image of a sick woman in a hospital bed than an image of a woman jogging (Couper, Conrad, & Tourangeau 2007). Respondents may judge their behavior against the standard set by the image. Research shows that images can influence answers to attitudinal questions, as well,

finding more support for protecting endangered species when pictures of the animals appeared next to the questions (Witte, et al. 2004).

Visual context effects occur because survey respondents often adhere to the Gricean principles of communication (Schwarz 1996; Grice 1978, 1975). As such, respondents tend to view all information presented to them in a questionnaire as relevant to their response task. They likely draw upon the large amount of information that images and other visual elements convey to help determine how to answer (Couper, Tourangeau, & Kenyon 2004; Schwarz 1996). Images can influence how respondents interpret a question and what information they retrieve and judge as relevant for their answer. For example, when asking someone to report his or her typical shopping behavior, the concept of “shopping” is vague: Does this mean all shopping? Only grocery shopping? Only clothes shopping? To resolve this vagueness in a self-administered survey where no interviewer is present to help, respondents will likely look to the questionnaire for more information. Previous questions can provide context for question meaning (Couper, Tourangeau, & Kenyon 2004), but images can provide clarification as well (Tourangeau, et al. 2014). Continuing the shopping behavior example, an image of a specific type of shopping behavior can help respondents further clarify the concept of “shopping.” Because the content of the images was related to the frequency of the behavior in question (i.e., grocery shopping occurs more frequently than clothing shopping), people’s reports of their own shopping frequency were affected by the images (Couper, Tourangeau, and Kenyon 2004).

Images can also influence respondents’ judgments. For instance, Couper, Conrad, and Tourangeau (2007) asked respondents to self-rate their health, but placed either an

image of a sick woman in a hospital bed or an image of a woman jogging next to the question. Respondents, who saw the sick woman, used that context as the standard by which to judge their own health and, on average, rated their health higher than the respondents who judged their health against the standard set by an image of a woman jogging.

An LGB-inclusive cover image design in a general population mail survey could cause visual context effects if the images aimed at motivating participation influence how respondents comprehend questions, and what information they retrieve and judge as relevant for their answer. For example, images of same-sex couples and same-sex couples with children may change how respondents construct their meaning of homosexuality (Ringer 1994). Because people tend to view some depictions of homosexuality more favorably than others (Hooten, Noeva, & Hammonds 2009; Oakenfull & Greenlee 2005), the images that researchers choose to represent homosexuality can conjure up a specific version of homosexuality for respondents that may influence how they understand LGB issue questions and what information they use to formulate their answers. Respondents may retrieve a positive portrayal of homosexuality from cover images of same-sex couples with children when responding to questions about LGB issues, such as about same-sex marriage, and formulate their attitude based upon this definition of homosexuality. Specifically, I hypothesize that respondents to a survey with an LGB-inclusive cover design will report more liberal attitudes to LGB issue questions because pictures of same-sex couple families may set a positive image of homosexuality that respondents draw upon when formulating their reports to LGB issue questions.

The politically charged nature of LGB issues (e.g., Andersson, et al. 2013; Suhay & Epstein Jayaratne 2013; Lax & Phillips 2009; Barth, et al. 2008), however, may mean the effect of images on reports to LGB issue questions will differ among who are intolerant of homosexuality and those who are supportive or hold neutral opinions. US political party affiliation is one proxy measure for these groups. Republicans who tend to be less tolerant of homosexuality (Pew Research 2013) may interpret a survey as liberally biased in favor of homosexuality when it includes LGB-inclusive cover images. Furthermore, they may view a cover design that features images of same-sex couple families with children as a legitimate family equal to traditional heterosexual couple families as offensive. The perception of research as biased against one's views or finding the images as offensive may influence how they respond to issue questions, motivating them to take a stand by giving reports opposing LGB rights. In comparison, those with moderate views on homosexuality may be influenced to give more liberal reports. I hypothesize that Democrat and Independent respondents to a survey with an LGB-inclusive cover design will report more liberal attitudes to questions about LGB issues whereas Republican respondents to a survey with an LGB-inclusive cover design will report more conservative attitudes to questions about LGB issues.

2.1.4 Hypotheses

In this chapter, I empirically examine how an LGB-inclusive cover design for a general population survey influences who responds to the survey and the answers that they provide compared to a cover design without images and a default design that only includes images of opposite-sex couple families and individuals presenting themselves in typically gendered ways. My hypotheses are:

- H 2-1: *Response rates will be lower for a survey with an LGB-inclusive cover design because fewer people who are less tolerant of homosexuality (e.g., males, older individuals, people with lower education levels, political conservatives, more religious people) will respond because they view the inclusivity unfavorable, as offensive, or as biased. Increasing LGB participation among supporters of LGB rights may also affect response rates to the LGB-inclusive cover design. However, because of the small size of the LGB population, the net effect on response rates will likely be no difference or lower response rates from fewer non-LGB people responding.*
- H 2-2: *More respondents will identify as LGB in a survey with an LGB-inclusive cover image design because it brands the survey as inclusive of homosexuality and appeals to a sense of LGB group identity.*
- H 2-3: *More respondents will report being in a same-sex relationship in a survey with an LGB-inclusive cover design because it brands the survey as inclusive of homosexuality and appeals to a sense of LGB group identity.*
- H 2-4: *The characteristics of respondents to a survey with an LGB-inclusive cover design will be demographically, politically, and religiously different from a survey with a default cover design or one without cover images because people less tolerant of homosexuality (i.e., males, older individuals, people with lower education levels, political conservatives, and more religious individuals) may not respond because they view the inclusivity unfavorably, as offensive, or as biased.*
- H 2-5: *Respondents to a survey with an LGB-inclusive cover design will report more liberal attitudes to LGB issue questions because pictures of same-sex couple families may set a positive image of homosexuality that respondents draw upon when formulating their reports to LGB issue questions.*
- H 2-6: *Democrat and Independent respondents to a survey with an LGB-inclusive cover design will report more liberal attitudes to questions about LGB issues whereas Republican respondents to a survey with an LGB-inclusive cover design will report more conservative attitudes to questions about LGB issues.*

2.2 Data and Methods

2.2.1 Cover Image Experiment

To examine how LGB-inclusive cover designs influence who responds to surveys and the answers that respondents provide, I embedded a cover design experiment in the 2013 Nebraska Annual Social Indicators Survey (NASIS). NASIS is an annual, omnibus mail survey sent to a randomly selected address-based sample (i.e., DSF). NASIS 2013

surveyed a simple random sample of n=6,000 Nebraska households provided by Survey Sampling International (SSI). The sample design included equal probabilities of selection (EPSEM), meaning adjustments for selection probabilities are unnecessary. A total of n=1,608 respondents completed NASIS for a 27.3% response rate (AAPOR RR1). Sampled addresses were randomly assigned to one of three cover treatments (Figure 2.1; see Appendix A for larger versions of the cover designs and the NASIS questionnaire):

- (1) A no image treatment—blank cover with only the survey title and sponsorship information,
- (2) A default treatment—pictures of opposite-sex couples and their families and individuals appearing in typically gendered ways,
- (3) An inclusive treatment—pictures of LGB and heterosexual individuals and opposite-sex and same-sex couples and their families.

The covers were printed in black and white because of budget restrictions.

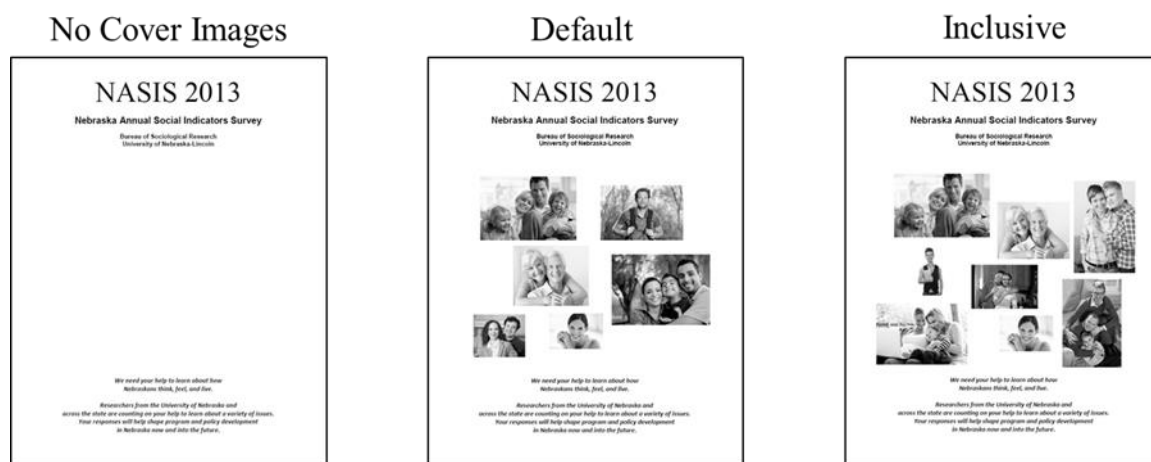


Figure 2.1: NASIS Cover Design Treatments: No Cover Images, Default, and Inclusive.

NASIS 2013 included six questions about LGB issues. The first question asked respondents their general feelings toward gay men and lesbians with a five-point scale (very favorable=1, favorable=2, neither favorable nor unfavorable=3, unfavorable=4,

very unfavorable=5). The second question asked respondents whether they favor legal marriages for gay and lesbian couples, favor civil unions only, or oppose same-sex marriages. The remaining questions asked respondents whether they favor or oppose the Defense of Marriage Act (DOMA), gay and lesbian couples' right to adopt children, and protections for gay men and lesbians from housing and job discrimination (see Appendix A for question wording).

2.2.2 Analysis Plan

Response Rates. To investigate whether the cover designs influenced who responded to NASIS, I use chi-square tests to examine if the treatments' response rates significantly differ.

Prevalence of LGB People and Same-Sex Couples. I next examine the percent of respondents who identified as LGB and reported being in a same-sex relationship. I identified each respondent's sexual orientation through the question:

Do you think of yourself as:

Heterosexual/straight, Homosexual/gay or lesbian, Bisexual, Something else, Not sure

I code respondents who identified their sexual orientation as "homosexual/gay or lesbian," "bisexual," or "something else" as LGB and those who identified as "heterosexual/straight" as non-LGB. I treat "not sure" responses as missing values.

I identify same-sex couples in two ways. In addition to the cover design experiment, I embedded a marital status question experiment in NASIS (see Appendix A for the question wording). Half of the NASIS sample randomly received a question with "same-sex" and "opposite-sex" categories (i.e., same-sex married, opposite-sex married,

same-sex unmarried partner, opposite-sex unmarried partner, and so on). I code respondents who reported a “same-sex” category as being in a same-sex relationship. I, however, excluded respondents who reported a “same-sex” category but reported their sexual orientation as heterosexual/straight. I assume these are erroneous reports (see Chapter 3). For the half of the sample who randomly received a traditionally-worded marital status question, I coded respondents as being in a same-sex relationship if they reported being married or cohabiting and identified as LGB.

To test the hypothesis that more respondents will identify as LGB and report being in a same-sex relationship in the LGB-inclusive treatment, I use chi-square tests and t-tests to examine if the percent of LGB respondents and the percent who report being in a same-sex relationship significantly differ among the cover design treatments. I then use t-tests and Census benchmark data (Gates & Cooke 2010) to test if the percent of respondents who report being in a same-sex relationship in each treatment significantly differed from benchmarks for Nebraska. No official benchmark for size of Nebraska’s LGB population exists; therefore, I compare the percent of respondents who identified as LGB to Gallup’s estimate of the size of Nebraska’s LGB population using t-tests (Gates & Newport 2013). For both analyses, I compare the unweighted and weighted estimates to Census and Gallup estimates. Because the NASIS was a simple random sample, I only applied nonresponse adjustment weights. The NASIS data were weighted by age, sex, and region of Nebraska using 2010 Census data (Bureau of Sociological Research 2013). I applied the weights using the *svy* commands in Stata 12.

Completed Sample Characteristics. In the next analyses, I test the hypothesis that the LGB-inclusive treatment’s completed sample will be demographically, politically,

and religiously different because people who tend to be less tolerant and accepting of homosexuality will be less likely to respond to a survey with an inclusive design. I use chi-square tests to examine if the demographic, political, and religious composition of respondents significantly differed across the treatments (sex, age, race, ethnicity, marital status, education level, households with children, and urban vs. rural, political ideology, political party identification, 2012 presidential vote, religion, born-again Christian identity, religious attendance and influence, and whether the respondent knows an LGB person). Using t-tests and benchmarks from the 2012 American Community Survey (ACS), I additionally test if each treatment produced a completed sample pool that reflected the demographic composition of Nebraska's population in terms of sex, age, race, ethnicity, marital status, education level, households with children, and urban vs. rural respondents.

Visual Context Effects. In the final analyses, I examine visual context effects from the cover images. I hypothesize that reports to LGB issue questions will be more liberal when respondents see LGB-inclusive cover images because the images will establish a positive portrayal of homosexuality that respondents then incorporate into their reports. To test this hypothesis, I use chi-square tests to examine if reports to questions about general feeling toward gay men and lesbians, same-sex marriage, adoption by gay and lesbian couples, and protections from housing and job discrimination for LGB people differed among the cover treatments.

Reports to LGB issue questions, though, may simply be more liberal because people with conservative views did not participate because they viewed the inclusive cover unfavorably, as offensive, or as biased. Therefore, in regression models predicting

reports to LGB issue questions, I use the cover treatment as the key independent variable with respondent demographic, political, and religious characteristics as additional variables to examine the effect of the treatments while controlling for who responded to NASIS. I employed ordinal and OLS regression to examine reports to the question about general feelings toward gay men and lesbians because the dependent variable is a five-point scale (very favorable=1, favorable=2, neither favorable nor unfavorable=3, unfavorable=4, very unfavorable=5). I used multinomial regression to examine reports to the question about support for gay and lesbian couples to legally marry because the dependent variable is three nominal categories (favor marriage=1, favor civil unions only=2, or oppose gay marriage=3). I used logistic regression to examine reports to questions about DOMA, rights of gay and lesbian couples to adopt children, and protections for LGB people from housing and job discrimination because the dependent variables are dichotomous (favor=1 or oppose=0). In these analyses, I included respondent demographic, political, and religious characteristics as controls to isolate how much of changes in reports to LGB issue questions across the three cover treatments were due to measurement versus differential nonresponse across the three cover designs. I then examined subgroup differences for respondents who identified as Republican and those who identified as Democrat, Independent, or some other political party. I grouped Democrats and Independents together to have sufficient sample size. In these analyses, I investigated differences in how the cover design treatment influenced reports among respondents of different political parties.

For the completed sample demographics and visual context effects, I report separate analyses for non-LGB and LGB respondents in Appendix B and Appendix C,

respectively. For all of the analyses, I report statistically significant and noteworthy non-significant pairwise comparisons, and display the results of all pairwise comparisons in Appendix E.

2.3 Results

2.3.1 Response Rates

H 2-1: Response rates will be lower for a survey with an LGB-inclusive cover design than for a survey with a default cover design or no cover images.

The response rates of the three cover design treatments significantly differed ($X^2(2)=8.63$, $p=0.01$; AAPOR RR1; Table 2.1). Contrary to the hypothesis, the cover treatment without images had the highest response rate at 28.8%, and the LGB-inclusive treatment had the next highest response rate at 27.0%. The default treatment received the lowest response rate at 24.7%, which was significantly lower than the no cover image treatment's response rate (24.7 vs. 28.8%; $X^2(1)=8.59$, $p=0.003$). The inclusive treatment's response rate did not significantly differ from the default (27.0% vs. 24.7%; $X^2(1)=2.88$, $p=0.09$) and no image (27.0% vs. 28.8%; $X^2(1)=1.52$, $p=0.22$) treatments' response rates. Thus, counter the hypothesis, the LGB-inclusive treatment did not significantly reduce response rates compared to the default and no cover image treatments.

Table 2.1: Response rates for NASIS by cover design treatment.

	Total Sample	Inclusive	Default	No Cover Image	X² (p-value)
Response Rate (AAPOR RR1)	27.30	27.00	24.65	28.75	8.63 (0.01)
n	6,000	2,000	2,000	2,000	

Summary. The default treatment drove the effect of significantly different response rates among the three cover design treatments of NASIS. The default

treatment's response rate was significantly lower than the no cover image treatment but did not significantly differ from the inclusive treatment's response rate. Contrary to the hypothesis, the inclusive cover design did not significantly suppress response rates. The default cover image design with only opposite-sex couple families, however, did lower response rates compared to not including cover images.

2.3.2 Prevalence of LGB People and Same-Sex Couples

H 2-2: More respondents will identify as LGB in a survey with an LGB-inclusive cover image design.

H 2-3: More respondents will report being in a same-sex relationship in a survey with an LGB-inclusive cover design.

Table 2.2 shows the percent of LGB respondents and the percent of respondents who reported being in a same-sex relationship (married or cohabiting) for each treatment (unweighted and weighted). The percent of LGB respondents significantly differed among the cover treatments ($F_{R-S, Pearson}(1.99, 3074.24)=5.77, p=0.003$). Among the weighted data, as hypothesized, significantly more respondents identified as LGB in the LGB-inclusive treatment (5.36%) than the default treatment (0.91%; $F_{R-S, Pearson}(1, 992)=8.72, p=0.003$) and no cover treatment (1.54%; $F_{R-S, Pearson}(1, 1072)=5.06, p=0.02$). The weighted estimates of the percent of LGB respondents did not significantly differ between the default and no image treatments. The percent of LGB respondents in the inclusive and no cover image treatments was not significantly different from Gallup's estimate of 2.7% of Nebraska's population identifying as LGB. The percent of LGB respondents in the default treatment, however, was significantly lower than Gallup's estimate ($t=-3.16, p=0.002$).

Additionally, the item nonresponse rate for the sexual orientation question did not significantly differ among the three cover treatments, and no pairwise comparisons was significant (Appendix E).

Table 2.2: Percent of NASIS respondents who reported being LGB or being in a same-sex relationship by cover design treatment.

	Total Sample	Inclusive	Default	No Cover Image	χ^2 (p-value)/ $F_{R-S, Pearson}$ (p-value)	Census Estimate ^a	Gallup Estimate ^b
% LGB People							
Unweighted	2.19	3.27	0.84**	2.34	6.93 (0.03)	–	2.7
Weighted	2.78	5.36 ⁺	0.91**	1.93	5.77 (0.003)		
% Same-Sex Couples							
Unweighted	1.33*	1.59 ⁺	1.31	1.12	0.44 (0.80)	0.6	–
Weighted	1.34*	1.86 ⁺	1.47	0.76	1.02 (0.36)		

Note. ⁺p<0.1, *p<0.05, **p<0.01, ***p<0.001 significantly differ from ACS estimate or Gallup estimate. ^aFrom Gates & Cooke (2010). ^bNot an official benchmark, from Gates & Newport (2013).

The percent of respondents who identified as being in a same-sex relationship did not significantly differ among the cover design treatments ($F_{R-S, Pearson}(1.87, 2799.82)=1.02, p=0.36$) and none of the pairwise comparisons was significant (see Appendix E). Moreover, the percent of respondents who reported being in a same-sex relationship in each cover treatment did not significantly differ from the Census estimate for Nebraska. In the total NASIS sample, however, the percent of respondents in a same-sex relationship was significantly higher than the Census estimate (1.34% vs. 0.6%; $t=2.13, p=0.03$).

Summary. Consistent with the hypothesis, more respondents identified as LGB in the NASIS with an LGB-inclusive cover image design than with a default cover design or

no cover image. The analyses, however, did not find any support for the hypothesis that the inclusive cover design would lead to more respondents who report being in a same-sex relationship. The percent of respondents who reported being in a same-sex relationship did not significantly differ among the cover design treatments.

2.3.3 Completed Sample Demographics

H 2-4: The characteristics of respondents to a survey with an LGB-inclusive cover design will be demographically, politically, and religiously different (i.e., fewer males, older individuals, people with lower education levels, political conservatives, and more religious individuals).

Demographic Characteristics. The completed sample demographics for NASIS respondents overall and by treatment are shown in Table 2.3. The demographic characteristics did not significantly differ across the cover designs by sex, race, ethnicity, married/cohabiting vs. single, age, education, and having kids in the household ($p > 0.05$); all three treatments garnered quite similar respondents. Additionally, with one exception, none of the pairwise comparisons (shown in Appendix E) were significant ($p > 0.05$). The exception is that the default treatment yielded more non-white respondents (6.36%) than the inclusive treatment (3.33%) ($X^2(1) = 4.95$, $p = 0.03$), but this is not significant with a Bonferroni correction to account for multiple comparison.

T-tests showed that the completed samples of each treatment similarly differed from ACS benchmarks for Nebraska for most characteristics. The total NASIS sample and completed samples of each treatment have more females, whites, non-Hispanics, older people, and those with higher education compared to ACS benchmarks. The samples also have fewer young people and fewer people with lower education levels than Nebraska's population according to the ACS.

Surprisingly, the inclusive treatment resulted in a sample that more closely resembled Nebraska's population in terms of households with children. The percent of respondents who live in a household with children, though, was significantly lower than the ACS benchmark for the total NASIS sample and for the default and no image treatments.

Across the six demographic variables, the average absolute difference from the ACS estimates is 8.78 percentage points for the inclusive treatment, compared to 8.77 percentage points for the no cover image treatment and 8.41 percentage points for the default treatment.

Table 2.3: Demographic characteristics of NASIS respondents by cover design treatment (unweighted percentages).^a

	Total	Inclusive	Default	No Cover Image	X² (p-value)	ACS Estimate
Sex						
Male	41.99***	40.00***	43.27**	42.73***	1.32	49.7
Female	58.01***	60.00***	56.73**	57.27***	(0.52)	50.3
Race						
White	95.17***	96.67***	93.64**	95.09***	4.91	90.1
Nonwhite	4.83***	3.33***	6.36**	4.91***	(0.09)	10.9
Ethnicity						
Hispanic	2.25***	2.87***	2.30***	1.62***	1.92	9.6
Not Hispanic	97.75***	97.13***	97.70***	98.38***	(0.38)	90.4
Age						
Mean	56.89	56.34	58.11	56.37		–
19-34	11.44***	12.78***	10.14***	11.30***		28.4
35-49	18.91***	20.00***	18.66***	18.09***	9.69	25.5
50-64	33.27***	31.11*	31.03*	37.22***	(0.14)	26.9
65+	36.38***	36.11***	40.16***	33.39***		19.1
Education						
HS or <	22.12***	21.48***	23.58***	21.43***	2.11	37.2
Some College	34.96	33.79	34.11	36.84	(0.72)	36.2
BA+	42.92***	44.73***	42.32***	41.73***		26.6
Kids in HH						
Yes	27.72***	28.88	27.43*	26.89**	0.54	31.9
No	72.28***	71.12	72.57*	73.11**	(0.76)	68.1

Note. ^aResults did not differ from weighted analyses (Appendix D). [†]p<0.1, *p<0.05, **p<0.01, ***p<0.001 denotes significant difference from ACS estimate.

Political Characteristics. Table 2.4 displays the political ideology, political party identification, and 2012 Presidential Election vote for the total NASIS sample and for respondents to each of the three cover designs. Political ideology of respondents significantly differed among the three cover treatments ($X^2(8)=20.34$, $p=0.01$). Pairwise comparisons showed that political ideology significantly differed between respondents to the default and the no image treatments ($X^2(4)=15.55$, $p=0.004$). Political ideology did not significantly differ between the inclusive and no cover image treatments ($X^2(4)=6.53$, $p=0.16$) nor between the default and inclusive treatments ($X^2(4)=7.07$, $p=0.13$). Thus, contrary to the hypothesis, the inclusive cover design did not significantly decrease participation of politically conservative people.

The default cover design treatment drove the significant findings for political ideology, with differences in whether respondents reported being very liberal or liberal. The default treatment had significantly fewer very liberal respondents (2.22% vs. 5.06%; $z=2.33$, $p=0.02$) and more liberal respondents (20.22% vs. 12.36%; $z=-3.36$, $p<0.001$) than the no cover image treatment. The default treatment also had significantly more liberal respondents than the inclusive treatment (20.22% vs. 14.76%; $z=2.23$, $p=0.03$), but did not significantly differ for very liberal respondents. The differences for moderate, conservative, and very conservative political ideology across the cover design treatments were not statistically significant (Appendix E).

Contrary to the hypothesis, however, political party identification ($X^2(4)=5.18$, $p=0.24$) and 2012 Presidential Vote ($X^2(6)=0.70$, $p=1.00$) did not significantly differ among the three cover treatments nor for pairwise comparisons. For instance, around 42-44% of respondents identified as Republican across the three cover designs and around

48% of respondents to all three cover designs reported voting for Romney for President in 2012.

Table 2.4: Political characteristics of NASIS respondents by cover design treatment (unweighted percentages).^a

	Total	Inclusive	Default	No Cover Image	X ² (p-value)
Political Ideology					
Very Liberal	3.49	2.95	2.22	5.06	
Liberal	15.55	14.76	20.22	12.36	20.34 (0.01)
Moderate	36.53	35.04	35.56	38.76	
Conservative	34.79	35.83	33.56	34.83	
Very Conservative	9.65	11.42	8.44	8.99	
Political Party					
Democrat	28.04	26.25	31.02	27.21	5.52 (0.24)
Republican	42.74	43.44	43.38	41.54	
Independent/Other	29.22	30.31	25.60	31.25	
2012 Presidential Vote					
Obama	37.75	36.79	37.58	38.83	0.70 (1.00)
Romney	48.27	48.92	48.38	47.54	
Other	1.93	2.15	1.73	1.89	
Did Not Vote	12.05	12.13	12.31	11.74	

Note. ^aResults did not differ from weighted analyses (Appendix D).

Religious Characteristics. Table 2.5 displays the religious characteristics among respondents to all three of the cover design treatments and for the total NASIS sample. Contrary to the hypothesis, the religious characteristics did not significantly differ among respondents to the three cover design treatments. The sample compositions were similar in terms of religious affiliation, having a religion vs. not being religious, born-again Christian identity, religious attendance, and religious influence. For example, around 11-11.5% of respondents to each cover design reported not being religious. Additionally, no pairwise comparisons across treatments were significant for any of the religious characteristics (Appendix E).

Table 2.5: Religious characteristics of NASIS respondents by cover design treatment (unweighted percentages).^a

	Total	Inclusive	Default	No Cover Image	X ² (p-value)
Religion					
Protestant	55.82	56.53	57.20	53.92	
Catholic	28.01	27.46	26.48	29.85	2.79
Other	4.93	4.48	5.72	4.66	(0.84)
None	11.24	11.50	10.59	11.57	
Has a Religious Affiliation	88.76	88.50	89.41	88.43	0.29
None	11.24	11.50	10.59	11.57	(0.87)
Born-Again Christian					
Yes	27.55	29.61	25.27	27.59	2.25
No	72.45	70.39	74.73	72.41	(0.33)
Religious Attendance					
Several Times a Week	6.10	6.35	6.37	5.63	
Once a Week	30.93	32.31	29.94	30.49	
Once a Month to Nearly Every Week	19.91	21.35	20.59	17.97	8.03
About Once a Year to Several Times a Year	22.37	20.00	22.93	24.14	(0.63)
Less than Once a Year	8.95	8.65	7.43	10.53	
Never	11.74	11.35	12.74	11.25	
Religious Influence					
Very Much	36.14	37.45	37.55	33.69	
Quite a Bit	27.66	26.05	29.11	27.96	4.28
Some	19.96	19.96	18.35	21.33	(0.83)
A Little	7.32	7.22	6.75	7.89	
None/Not Religious	8.92	9.32	8.23	9.14	

Note. ^aResults did not differ from weighted analyses (Appendix D).

Other Respondent Characteristics. As table 2.6 shows, the respondents to the three cover designs also did not significantly differ by whether they have an LGB relative, friend, neighbor, or coworker ($X^2(2)=1.53$, $p=0.64$) or whether they live in an urban or rural area ($X^2(2)=0.52$, $p=0.77$). Additionally, no pairwise comparisons of the three cover image treatments were statistically significant for either characteristic (Appendix E).

Table 2.6: Other characteristics of NASIS respondents by cover design treatment (unweighted percentages).^a

	Total	Inclusive	Default	No Cover Image	X ² (p-value)
LGB Relative/Friend/Co-Worker					
Yes	43.08	44.38	40.79	43.85	1.53
No	56.92	55.62	59.21	56.15	(0.46)
Geography					
Rural	18.51	18.06	17.90	19.44	0.52
Urban	81.49	81.94	82.10	80.56	(0.77)

Note. ^aResults did not differ from weighted analyses (Appendix D).

Summary. Among the demographic, political, and religious characteristics examined, there were very few statistically significant differences across the three cover design treatments. Only political ideology significantly differed among the three cover design treatments, but pairwise comparisons revealed that differences between the no image and default treatments led to this effect. These findings indicate that, contrary to the hypothesis, the LGB-inclusive cover design did not appear to lead to a significant backlash from respondents who tend to be less tolerant of homosexuality.

Additionally, the completed samples for each of the cover designs and for the total NASIS sample underrepresented males, non-whites, Hispanics, younger age groups, and those with lower education levels. No cover design led to a sample that better resembled Nebraska's population based on ACS benchmarks. These differences from the benchmark values, nonetheless, are consistent with past waves of NASIS (Olson, Stange, Smyth 2014) and mail surveys with address-based samples in general (e.g., Link, et al. 2008).

I report the compositions for all respondent, and separate compositions for these same characteristics for only non-LGB respondents and only LGB-respondents in

Appendix B and Appendix C, respectively. The results did not differ between all respondents and only non-LGB respondents.

2.3.4 Visual Context Effects

H 2-5: Respondents to a survey with an LGB-inclusive cover design will report more liberal attitudes to LGB issue questions.

H 2-6: Democrat and Independent respondents to a survey with an LGB-inclusive cover design will report more liberal attitudes to questions about LGB issues whereas Republican respondents to a survey with an LGB-inclusive cover design will report more conservative attitudes to questions about LGB issues.

Table 2.7 displays the reports to LGB issue questions for the total NASIS sample and among respondents to each of the three cover design treatments. Chi-square analyses indicated that, contrary to the hypothesis, respondents' general feeling toward gay men and lesbians and their support for gay marriage, DOMA, rights for gay and lesbian couples to adopt children, and protections for gay men and lesbians from housing and job discrimination did not significantly differ among the treatments ($p > 0.05$). The only significant pairwise comparison occurred for the general feeling toward gays and lesbians, with the default and no cover image treatments' distributions differing ($X^2(4) = 11.73, p = 0.02$). However, contrary to the hypothesis, neither the no cover image nor the default treatments significantly differed from the LGB-inclusive cover design treatment for this question. Overall, contrary to the hypothesis, the LGB-inclusive cover design treatment did not lead to significantly different response distributions to the LGB issue questions.

Table 2.7: NASIS respondents' views of LGB issues by cover design treatment (unweighted percentages).

	Total	Inclusive	Default	No Cover Image	X ² (p-value)
Feelings toward Gay Men and Lesbians					
Very Favorable	10.04	11.57	8.18	10.20	
Favorable	22.39	20.87	25.37	21.29	
Neither Favorable nor Unfavorable	41.01	40.99	41.72	40.43	14.67 (0.07)
Unfavorable	12.92	12.52	9.85	15.92	
Very Unfavorable	13.63	14.04	14.88	12.16	
Gay Marriage					
Favor	35.78	37.76	33.47	35.89	
Favor Civil Unions Only	19.24	17.92	19.37	20.36	2.86 (0.58)
Oppose	44.98	44.32	47.16	43.75	
Defense of Marriage Act (DOMA)					
Favor	54.29	51.49	55.53	55.82	2.40 (0.30)
Oppose	45.71	48.51	44.47	44.18	
Adoption Rights					
Favor	50.72	51.45	48.92	51.55	0.86 (0.65)
Oppose	49.28	48.55	51.08	48.45	
Laws to Protect LGB from Housing Discrimination					
Favor	70.38	69.32	73.08	69.09	2.35 (0.31)
Oppose	29.62	30.68	26.92	30.91	
Laws to Protect LGB from Job Discrimination					
Favor	73.65	71.51	76.28	73.41	2.90 (0.23)
Oppose	26.35	28.49	23.72	26.59	

Models Controlling for Respondent Characteristics. Tables 2.8 and 2.9 display the regression coefficients of models that predict reports to LGB issue questions by the cover design treatment while controlling for respondent characteristics (i.e., sex, age, education, race, marital status, kids in the household, political party and ideology, religion, and knowing an LGB person), with the no cover image treatment as the reference category. Tables 2.10 and 2.11 display the regression coefficients of the models

with the default treatment as the reference category. These analyses compared the default and inclusive cover design treatments. Appendix F contains the standard errors and 95% confidence intervals for these models.

The results of these models indicated mixed results about the inclusive treatment's effects. Treatment on reports to LGB issue questions are mixed. As seen in table 2.8, compared to the no image treatment, neither the default nor inclusive treatments significantly predicted reports to the questions about respondents' general feeling toward gay men and lesbians or reports about support for gay marriage. Compared to the no image treatment, though, the inclusive treatment did significantly predict support for DOMA ($\beta=-0.4091$, $p=0.02$; table 2.9). This finding indicates that respondents to NASIS with the LGB-inclusive cover design were significantly less likely to support DOMA than respondents to the version of NASIS with no cover images when controlling for respondent demographics. Similar to the question about general feeling toward gay men and lesbians and support for gay marriage, the LGB-inclusive treatment did not significantly predict reports to questions about whether respondents favor allowing gay and lesbian couples to adopt children and whether they favor protections for gay men and lesbians from housing and job discrimination. Across all the models reported in tables 2.8 and 2.9, respondent characteristics significantly predicted reports to these questions in ways consistent with research on public opinion of LGB issues (Pew Research 2013; Baunach 2012; Lewis 2011; Becker & Scheufele 2011; Schwartz 2010).

Table 2.8: Coefficients of regression models predicting general feeling toward gay men and lesbians and support for gay marriage by cover design treatment and respondent characteristics, with the no cover image treatment as the reference category.

	General Feeling ^a	Gay Marriage ^b	
		Favor	Civil Unions
Cover Design			
No Cover Image (Reference)	–	–	–
Default	-0.0391	-0.2134	-0.1389
Inclusive	-0.0481	0.3002	-0.1269
Sex (Male=1, Female=0)	0.2899***	-0.4502*	-0.2890 ⁺
Age (Mean Centered)	0.0125***	-0.0439***	-0.0123 ⁺
Education			
HS or < (Reference)	–	–	–
Some College	-0.0728	0.3531	0.6313*
BA+	-0.3706***	0.6793**	1.1953***
Married (Yes=1, No=0)	0.1019 ⁺	-0.5498**	-0.5815**
Kids in Household (Yes=1, No=0)	0.0543	-0.3771 ⁺	-0.1495
Party			
Democrat (Reference)	–	–	–
Republican	0.2381**	-0.7959***	-0.5213*
Independent/Other	0.1572*	-0.4444 ⁺	-0.0872
Political Ideology			
Very Conservative	0.6382***	-2.5910***	-0.7284*
Conservative	0.2827***	-1.3656***	-0.0333
Moderate (Reference)	–	–	–
Liberal	-0.2215*	0.7255**	-0.4846
Very Liberal	-0.5271**	1.2538*	-0.0332
Religion (Yes=1, None=0)	0.0371	-1.2938***	-0.2910
Born Again Christian (Yes=1, No=0)	0.4470***	-1.6321***	-0.8395***
Know LGB Person (Yes=1, No=0)	-0.4461***	1.4325***	0.6928***
Intercept	2.7644***	1.7872***	-0.0868
R²/Pseudo R²	0.3494	0.2719	
n	1213	1201	

Note. ^aOLS regression; OLS and ordinal regression results were the same; Coded as Very Favorable=1, Favorable=2, Neither favorable nor unfavorable=3, Unfavorable=4, Very unfavorable=5. ^bMultinomial regression; “oppose” is base outcome. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table 2.9: Coefficients of logistic regression models predicting reports to questions about LGB issues by cover design treatment and respondent characteristics, with the no cover image treatment as the reference category.^a

	DOMA	Adoption	Housing Discrimination Protection	Job Discrimination Protection
Cover Design				
No Cover Image (Reference)	–	–	–	–
Default	-0.0816	-0.0703	0.3195 ⁺	0.2662
Inclusive	-0.4091*	0.2209	0.0736	-0.0755
Sex (Male=1, Female=0)	0.3133*	-0.4154**	-0.3123*	-0.3808*
Age (Mean Centered)	0.0176**	-0.0363***	-0.0164**	-0.0172**
Education				
HS or < (Reference)	–	–	–	–
Some College	-0.0556	0.4920*	0.2588	0.4040*
BA+	-0.0433	0.9328***	0.5741**	0.6209
Married (Yes=1)	0.0865	-0.3436*	-0.2988 ⁺	-0.3911
Kids in Household (Yes=1)	0.1324	-0.2728	-0.1402	-0.2658
Party				
Democrat (Reference)	–	–	–	–
Republican	0.6904**	-0.6263**	-0.5427*	-0.5198*
Independent/Other	0.5555**	-0.4624*	-0.3020	-0.3578
Political Ideology				
Very Conservative	1.5310***	-1.9656***	-1.0083***	-1.1032***
Conservative	1.1016***	-0.8144***	-0.2726	-0.2147
Moderate (Reference)	–	–	–	–
Liberal	-0.2836	0.4556 ⁺	0.0164	0.1339
Very Liberal	-1.8919**	1.4625*	0.9587	0.8066
Religion (None=0)	0.9390***	-0.5931*	-0.4345	-0.3642
Born Again Christian (Yes=1)	0.7230***	-1.2205***	-0.7200***	-0.6692***
LGB Friend (Yes=1)	-0.7092***	1.0212***	0.7454***	0.5823***
Intercept	-1.3696***	1.0955**	1.7200***	2.0127***
Pseudo R²	0.2388	0.3006	0.1380	0.1328
n	1177	1187	1196	1196

Note. ^aFor the questions about DOMA, adoption rights of gay and lesbian couples, and protections for gay men and lesbians from housing and job discrimination the responses are coded as Favor=1 and Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table 2.10: Coefficients of regression models predicting general feeling toward gay men and lesbians and support for gay marriage by cover design treatment and respondent characteristics, with the default treatment as the reference category.

	General Feeling ^a	Gay Marriage ^b	
		Favor	Civil Unions
Cover Design			
No Cover Image	0.0391	0.2134	0.1389
Default (Reference)	–	–	–
Inclusive	-0.0089	0.5135*	0.0120
Sex (Male=1, Female=0)	0.2899***	-0.4502**	-0.2890 ⁺
Age (Mean Centered)	0.0125***	-0.0439***	-0.0123 ⁺
Education			
HS or < (Reference)	–	–	–
Some College	-0.0728	0.3531	0.6313**
BA+	-0.3706***	0.6793**	1.1953***
Married/Cohabiting (Yes=1, No=0)	0.1019 ⁺	-0.5498**	-0.5815**
Kids in Household (Yes=1, No=0)	0.0543	-0.3771 ⁺	-0.1495
Party			
Democrat (Reference)	–	–	–
Republican	0.2381***	-0.7959***	-0.5213*
Independent/Other	0.1572*	-0.4444 ⁺	-0.0872
Political Ideology			
Very Conservative	0.6382***	-2.5990***	-0.7284*
Conservative	0.2827***	-1.3656***	-0.0333
Moderate (Reference)	–	–	–
Liberal	-0.2215**	0.7255**	-0.4846
Very Liberal	-0.5271***	0.6030*	-0.0332
Religion (Yes=1, None=0)	0.0371	-1.2938***	-0.2990
Born Again Christian (Yes=1, No=0)	0.4470***	-1.6321***	-0.8395***
Know LGB Person (Yes=1, No=0)	-0.4461***	1.4325***	0.6928***
Intercept	2.7271***	1.5739***	-0.2257
R²/Pseudo R²	0.3494	0.2719	
n	1213	1201	

Note. ^aOLS regression; OLS and ordinal regression results were the same; Coded as Very Favorable=1, Favorable=2, Neither favorable nor unfavorable=3, Unfavorable=4, Very unfavorable=5. ^bMultinomial regression; “oppose” is base outcome. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table 2.11: Coefficients of logistic regression models predicting reports to questions about LGB issues by cover design treatment and respondent characteristics, with the default treatment as the reference category.^a

	DOMA	Adoption	Housing Discrimination Protection	Job Discrimination Protection
Cover Design				
No Cover Image	0.0816	0.0703	-0.3195 ⁺	-0.2662
Default (Reference)	–	–	–	–
Inclusive	-0.3276 ⁺	0.2912	-0.2460	-0.3417 ⁺
Sex (Male=1, Female=0)	0.3133*	-0.4154**	-0.3123*	-0.3808*
Age (Mean Centered)	0.0176***	-0.0363***	-0.0164**	-0.0172**
Education				
HS or < (Reference)	–	–	–	–
Some College	-0.0556	0.4920*	0.2588	0.4040*
BA+	-0.0433	0.9328***	0.5741**	0.6209***
Married (Yes=1)	0.0865	-0.3436*	-0.2988 ⁺	-0.3911*
Kids in Household (Yes=1)	0.1324	-0.2728	-0.1402	-0.2658
Party				
Democrat (Reference)	–	–	–	–
Republican	0.6904***	-0.6263**	-0.5427**	-0.5198*
Independent/Other	0.5555**	-0.4624*	-0.3020	-0.3578
Political Ideology				
Very Conservative	1.5310***	-1.9656***	-1.0083***	-1.1032***
Conservative	1.1016***	-0.8144***	-0.2726	-0.2147
Moderate (Reference)	–	–	–	–
Liberal	-0.2836	0.4556 ⁺	0.0164	0.1339
Very Liberal	-1.8919**	1.4625*	0.9587	0.8066
Religion (None=0)	0.9390***	-0.5931*	-0.4345	-0.3642
Born Again Christian (Yes=1)	0.7230***	-1.2205***	-0.7200***	-0.6695***
LGB Friend (Yes=1)	-0.7092***	1.0212***	0.7454***	0.5823***
Intercept	-1.4511***	1.0252**	2.0395***	2.2789***
Pseudo R²	0.2388	0.3006	0.1380	0.1328
n	1177	1187	1196	1196

Note. ^aFor the questions about DOMA, adoption rights of gay and lesbian couples, and protections for gay men and lesbians from housing and job discrimination the responses are coded as 1= Favor and 0= Oppose. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

As seen in tables 2.10 and 2.11, the results of regression models that compared the LGB-inclusive treatment with the default treatment show that, while controlling for respondent characteristics, the inclusive cover design significantly predicted reports to questions about support for gay marriage. Consistent with the hypothesis, respondents to the inclusive cover design were more likely to favor gay marriage ($\beta=0.5135$, $p=0.02$). Again, respondent characteristics significantly predicted reports to all of the LGB issues in tables 2.10 and 2.11 in ways consistent with past research.

Visual Context Effects by Political Party. Models predicting reports to questions on LGB issues by political party affiliation (shown in Appendix G) revealed that, compared to the default treatment, the LGB-inclusive cover treatment significantly increased opposition for DOMA ($\beta=-0.5009$, $p=0.03$) and significantly decreased opposition to gay marriage ($\beta=-0.6394$, $p=0.03$) among Democrats and Independents. Unexpectedly, the LGB-inclusive treatment did not significantly influence reports to question about LGB issues among Republicans. The default treatment, though, was associated with significantly more favorable feelings toward gays and lesbians ($\beta=-0.4191$, $p=0.04$) and increased favor of protections for LGB people from housing discrimination ($\beta=0.5456$, $p=0.03$) compared to the no cover image treatment among Republicans.

Summary. The visual context effect analyses show weak evidence that the LGB-inclusive cover design influenced reports to questions about LGB issues. Chi-square tests showed that the distribution of responses to these questions did not significantly differ by the cover treatment. Additional regression models showed mixed findings, though, when controlling for respondent characteristics. Compared to the no cover image treatment,

respondents to the inclusive treatment were significantly more likely to oppose DOMA. Additionally, compared to the default treatment, respondents to the inclusive treatment were more likely to favor gay marriage. Both of these findings are in the hypothesized direction. Consistent with the hypothesis, the LGB-inclusive cover design significantly influenced Democrats' and Independents' reports to questions about DOMA and gay marriage. Contrary to the hypothesis, however, the LGB-inclusive cover design did not significantly influence reports to questions about LGB issues among Republicans.

2.4 Discussion

2.4.1 LGB Participation and Completed Sample Characteristics

That the LGB-inclusive cover image design led to more respondents identifying as LGB without significantly changing the demographic, political, and religious composition of the completed sample pool is important for researchers interested in surveying LGB people. This finding suggests that researchers can use cover designs to encourage LGB participation in general population surveys without significantly affecting who responds to the survey regarding other characteristics compared to the default and no cover image treatments. The completed sample demographics among all three designs, additionally, were all significantly different from ACS benchmarks in similar directions and in similar ways as other research on mail surveys and address-based samples (e.g., Link, et al. 2008).

Surprisingly, the default cover design featuring a mix of images of opposite-sex couple families and individuals displaying themselves in typically gendered ways led to the lowest response rate, which was significantly lower than the no cover image treatment's response rate. This effect may be due to the design being mundane and

uninteresting compared to the inclusive design and perhaps amateur looking compared to the cover without images. The cover without images may have garnered the highest participation because the clean design is professional and formal looking, and has less of a marketing/advertising look. The university sponsorship of NASIS may also have been more salient in the no cover image treatment because images may distract sample members from seeing it in the other treatments. Having the university sponsorship prevalent may have raised response rates. If one goal of a cover design is to make the questionnaire stand out and look less like marketing and junk mail, the default cover design may not have worked.

The default treatment also garnered significantly fewer LGB respondents than the LGB-inclusive treatment. The estimate of the size of Nebraska's LGB population was also significantly lower than Gallup's estimate. These findings suggest that if branding the survey with cover images, the default design with heteronormative branding may have perpetuated the sense of stigma attached to homosexuality, resulting in fewer LGB participating or leading them to conceal their sexual orientation. In contrast, the inclusive design conveyed an accepting, non-stigmatizing context. Thus, these findings suggest that when branding a survey with images related to definitions of family and sexual orientation, inclusivity helps stem potential reduced participation and concealment of LGB people.

Also unexpected is that political ideology significantly differed among the three cover treatments, but that this difference was because political ideology significantly differed between the default and no cover image designs. Pairwise comparisons indicated that, contrary to the hypothesis, respondents' political ideology did not significantly

differ between the LGB-inclusive cover design and both the no image and default treatments.

2.4.2 Visual Context Effects

Another important finding was mixed and weak support for the hypothesis that the inclusive design would lead to more politically liberal reports to questions about LGB issues. Chi-square tests showed no significant differences in the distributions of responses to six LGB issue questions. The regression models predicting reports to these questions by the cover treatment, while controlling for respondent characteristics, however, indicated that the inclusive treatment led to significantly increased favorability of same-sex marriage compared to the default treatment and significantly less support for DOMA compared to the no cover image treatment. The inclusive treatment, though, did not significantly predict results to the other questions about respondents' general feeling toward gay men and lesbians, adoption rights of gay and lesbian couples, and protections for gay men and lesbians from housing discrimination. Additional analyses indicated that the LGB-inclusive treatment influenced reports to questions about DOMA and gay marriage among Democrats and Independents but that the LGB-inclusive images did not significantly influence reports to questions about LGB issues among Republicans.

Common to all of the issues in which the inclusive treatment led to a significant effect on reports was that they were all highly salient at the time of the NASIS survey. For example, the US Supreme Court struck down DOMA during the middle of NASIS data collection. In addition, gay marriage is a constant topic of political debate at this time and Nebraska was debating housing and job discrimination policies at the local and

state levels. Thus, the cover images may have had different effects on these highly salient issues compared to less salient issues.

2.4.3 General Discussion

Overall, the LGB-tailoring did not influence the types of people who responded to NASIS nor reports to LGB issue questions. Combining the findings about participation and visual context effects presents researchers with a trade-off when considering LGB-inclusive cover designs. On the one hand, the LGB-inclusive design worked to encourage LGB participation without significantly changing the demographic, political, and religious composition of the completed sample. On the other hand, the minor evidence of visual context effects, suggests that the inclusive cover design may result in significantly different measurements compared to the default cover design for some questions. Thus, while it is uncertain which cover design led to more accurate reports of people's attitudes about LGB issues, there was a difference for two questions in regression models. Researchers, therefore, may find that they can use inclusive cover images to encourage LGB participation when the variables of interest are unrelated to people's opinions about LGB issues or related in other ways to views about homosexuality.

These findings from a state like Nebraska are noteworthy. Nebraska currently bans same-sex marriages (Adam 2003) and Republicans and religious people, who tend to be more opposed to gay rights, make up a majority in Nebraska (Newport 2014; Saad 2013). Nebraska's political and religious context would make one predict an alternative result of placing images of same-sex couples and their families on the cover of a survey than what occurred. This prediction, though, may be giving too much weight to a few loud, outspoken voices that are against homosexuality and LGB rights. These loud voices

were evident in NASIS across all of the cover design treatments with some surveys returned with harsh comments written on the back cover or next to the questions about LGB issues. These included comments from respondents expressing their views on LGB issues:

“Leave marriage alone!”

“A person should not be compelled by law to accept that each person has to decide how to live.”

Other statements reveal how some respondents might have viewed the research as biased, with one respondent stating:

“I fear what you will do with the results of this ‘study’.”⁷

One respondent even defaced the cover of their survey by marking out the image of same-sex couples with X’s (but not the opposite-sex couples) and writing disparaging remarks about LGB people.

Yet, other respondents sent favorable comments regarding homosexuality—even drawing the Human Rights Campaign’s equality symbol—with their completed NASIS questionnaires. Comments included:

“Gone!” placed next to the question about DOMA.

“Several!” placed next to the question about whether the respondent personally knows any lesbian, gay, or bisexual individuals.

⁷ This respondent, however, did not provide explicit reference whether this statement was in regards to the questions about LGB issues, the LGB-inclusivity, or any of the other social and policy questions in NASIS. Nevertheless, this statement shows that the respondent may not trust that the survey is unbiased or legitimate.

Thus, even though there were a few loud voices with negative and positive reactions to the LGB-inclusive cover images, the analyses indicate that, on average, there was not a large backlash against it.

Why was there no significant backlash? One possible explanation is that advertisements to mass audiences increasingly employ LGB-inclusivity (Frizell 2014; Italea 2013; Tuten 2005; Oakenfull & Greenlee 2005). People may more frequently see LGB-inclusivity in their everyday lives from advertising, television, movies, and increased visibility of LGB people generally, making them less sensitive to LGB-inclusivity in surveys. A second explanation is the rise in acceptance of homosexuality and LGB rights in society (Pew Research Center 2013) and others simply having a neutral reaction to it (Tuten 2005). Those who are less tolerant of homosexuality may simply be acting in ways consistent with findings from cognitive interviews of adding explicit same-sex couple categories to marital status survey questions: They view the LGB-inclusivity unfavorably and overly politically correct, but still respond to the survey nonetheless (Ridolfo, Perez, & Miller 2011).

One explanation that the LGB-inclusive images only weakly influenced reports to the LGB issue questions was because the LGB issue questions appeared toward the middle of the survey (page 7 of 12; items 32–37 of 175). When respondents get to these questions (if they complete the survey in order), they may no longer recall the cover images or the images may no longer be salient to them. Other respondents may not have processed the cover images deeply. Placing the LGB issue questions toward the beginning of the survey or placing LGB imagery next to the questions might lead to more visual context effects. Printing NASIS in only black and white may also have been a

factor in the cover images not influencing reports. Witte, et al. (2004) found that a poor quality image did not influence reports to questions whereas a high quality version did influence respondent reports. An LGB-inclusive cover design printed in color may lead to visual context effects and perhaps different effects on participation.

Perhaps the most surprising finding from this study was that the default cover design significantly lowered response rates compared to the no cover image treatment. This suggests that questionnaire designers must design covers in ways that make them stand out and not look like marketing advertisement or consider no cover images at all. Although the seemingly more “controversial” LGB-inclusive cover design neither increased nor decreased response rates, the findings showed that questionnaire designers might not need to worry about what may be controversial cover designs from inclusive tailoring. In fact, this type of cover that makes controversial topics salient may be more interesting for sample members and encourage their participation compared to a mundane, “safe” image like that of the default treatment. For example, Grembowski (1988) found that, in a survey about water fluoridation, a cover design featuring an image of a girl drinking from a water fountain with a title that embraced the fluoridation issue led to a higher response rate than a design featuring an image of a girl sitting in a dentist chair with a dental hygienist and a title that branded the survey as about dental care costs. The study suggests that the more controversial water fluoridation theme worked better to encourage participation than an image that branded the survey with a less controversial theme of dental costs. Sample members on both sides of the issue may be encouraged to express their views on the topic.

2.5 Limitations and Future Research

In addition to the location of the LGB issue questions and printing NASIS in black and white, this study has other limitations. The sample for NASIS is only Nebraska residents, which limits the generalizability of the findings because Nebraska contains fewer racial and ethnic minorities and fewer Democrats/liberals than other areas. These limit the ability to analyze the effects of LGB-inclusivity on these populations' participation and reports and limit the generalizability to other areas. Nebraska having more Republicans, conservatives, and religious people, however, provides a good context to examine backlash against LGB-inclusivity.

Another limitation is that Nebraska currently bans same-sex marriages, which may explain the finding that the LGB-inclusive tailoring did not influence the percent of respondents identifying being in a same-sex relationship. Moreover, a smaller percent of Nebraska's population tends to identify as LGB than other states (Gates & Newport 2013). This research needs replication in areas with larger LGB populations to examine the effectiveness of LGB-inclusive cover designs further.

Future research should attempt to replicate these findings and test other methods to encourage LGB participation in surveys. Researchers should conduct cognitive interviews to understand how different types of respondents view LGB-inclusivity in surveys and research should test how higher quality cover images (color) influence participation and reports. Additionally, studies should investigate whether LGB-inclusive imagery influences reports when the questions are located nearer the survey cover or if visual context effects occur when images appear directly next to the questions about LGB issues. Questionnaire designers should also examine LGB-inclusive tailoring of other

features (delivery envelope, cover letter, and sponsorship) and using only LGB-imagery to determine whether there is a limit to how much inclusive tailoring they can incorporate without significantly affecting participation and reports in general population surveys.

Expansion of research about inclusive tailoring for other groups would add to our knowledge about how much tailoring researchers can do to encourage hard-to-survey groups' participation without detrimentally affecting participation and measurement of others in general population surveys. Future testing should examine how to tailor cover designs and other survey components to encourage participation of groups such as racial and ethnic groups, linguistic minorities, religious groups, and other hard-to-survey populations. Studies should also investigate the interaction effects of multiple tailored features (e.g., cover images and sponsorship) to understand which features work together to address the challenges associated with hard-to-survey groups.

2.5 Conclusion

Researchers interested in collecting data from LGB people and other hard-to-survey subgroups should be encouraged by this study's results. The findings suggest that LGB-inclusivity might be valuable for gaining LGB participation in surveys. The weak evidence of the LGB-inclusive imagery influencing reports to questions about LGB issues, though, provides some caution. The overall takeaway is that inclusivity in surveys may be important for addressing the participation challenges of hard-to-survey subgroups without a large detrimental effect on non-subgroup members' participation and measurement. As the diversity of the US population continues to increase and data needs about subgroups grow, survey researchers must find methods to address the participation and other challenges of hard-to-survey populations.

**CHAPTER 3: TESTING “SAME-SEX” AND “OPPOSITE-SEX” RESPONSE
OPTIONS FOR MARITAL STATUS QUESTIONS IN A GENERAL
POPULATION MAIL SURVEY**

The diversity of family forms is increasing (Cherlin 2010), including growing numbers of same-sex couples and legal recognition of their relationships (Badgett & Herman 2013; Biblarz & Savci 2010). Traditionally worded marital status questions that assume heterosexuality (e.g., married, divorced, widowed, never married), however, are still ubiquitous in surveys for social science research and official statistics (e.g., Durso & Gates 2013; Festy 2007). The lack of response options for same-sex relationships means that marital status questions are no longer valid for *all* respondents in general population surveys and that the question wording may specifically hinder the ability to identify same-sex couples and their families accurately in surveys. LGB individuals may experience confusion with how to answer the question because of response options that do not reflect their relationships. Social stigma attached to homosexuality is another challenge of collecting this data; some individuals in same-sex relationships may conceal their relationship status when reporting it would reveal their sexual orientation (Gates 2011, 2010).

Updating marital status question wording to provide explicit response options inclusive of same-sex relationships and to communicate an accepting context may address these challenges, leading to better identification of same-sex couples. To the extent that it encourages the disclosure of same-sex relationships and leads to more accurate identification of same-sex couples, updated question wording would better meet the needs of policymakers and researchers who require an accurate count of same-sex

couples or information about their attitudes, behaviors, and experiences (Baumle 2013; Badgett & Goldberg 2009; Meezan & Martin 2009).

At the same time, however, from a data quality perspective, adapted marital status question wording should not detrimentally affect the participation of non-LGB individuals or the measurement of their marital status. Same-sex relationships are a contentious social and political issue (Pew Research 2013; Andersson, et al. 2013; Suhay & Epstein Jayaratne 2013; Powell, et al. 2010; Lax & Phillips 2009; Barth, Overby, & Huffmon 2009), and those who object to homosexuality and same-sex relationships may not respond to surveys or may skip a marital status question when it explicitly recognizes same-sex relationships as a legitimate status equal to opposite-sex relationships. Other non-LGB individuals may not notice the addition of LGB-inclusive relationship categories, leading them to select an inaccurate response, or they may find the categories confusing, causing them to select an inaccurate response or skip the question.

Confusion and concealment may affect the quality of data about marital status from both LGB and non-LGB respondents. Methods that address these challenges and lead to the collection of valid and reliable data from all respondents are necessary. In this chapter, I report the results of a question wording experiment that tests the inclusion of explicit “same-sex” and “opposite-sex” response options for a marital status question. I investigate the effect that this LGB-inclusive question wording has on estimates for the prevalence of same-sex couples, how the wording affects unit and item nonresponse, and how non-LGB respondents report their marital status.

3.1 Literature Review

3.1.1 Marital Status Question Wording for Same-Sex Couples: Concealment and Confusion

Same-sex couples are a family type that is growing in numbers (Badgett & Herman 2013; Biblarz & Savci 2010; Cherlin 2010). Some same-sex couples choose to live in unmarried partnerships, while others seek legal marriages. Legal recognition of same-sex marriages in the United States began when Massachusetts issued marriage licenses to same-sex couples in 2003. Currently, the United States has fragmented marriage laws with 33 states and Washington, DC legally recognizing same-sex marriages and the rest explicitly banning them (freedomtomarry.org) or cases about them pending in courts. The federal government now recognizes same-sex marriages performed in states where they are legal since the US Supreme Court ruled in 2013 that part of the Defense of Marriage Act (DOMA) was unconstitutional (*United States v. Windsor* 2013). Recent rulings from US District Courts (e.g., *Bishop v. Oklahoma* 2014; *Kitchen v. Herbert* 2013; *Griego v. Oliver* 2013) declaring some state marriage bans unconstitutional and continuing litigation in Federal and State Courts perpetuates the fluidity and limbo of same-sex marriage laws, with changes coming at what often seems like a daily basis.

Policymakers and researchers interested in estimating the prevalence of same-sex couples or identifying them for research require updated question wording that identifies people in same-sex relationships while not sacrificing the quality of data collected from non-LGB people in general population surveys.

The challenges of measuring marital status are similar to the challenges of measuring household composition in general (e.g., with a household roster) and having households complete other survey tasks related to household composition (e.g., within-household selection for selecting a respondent). All of these can be challenging because of confusion and concealment (Olson & Smyth 2014). Confusion occurs when respondents are uncertain about a survey process (e.g., the question wording or format is difficult to understand) or how to report their household composition (e.g., whether certain individuals count as “household members” because of tenuous ties to the household—Martin 2007, 1999; how same-sex parents identify relationships to children in censuses and surveys—Baumle & Compton 2014; whether a same-sex couple counts as “married”—Ridolfo, Perez, & Miller 2011). Concealment occurs when respondents do not want to report about a household member who is involved in certain activities (e.g., illegal activities, financial obligations—Tourangeau, et al. 1997) or when the household composition is somehow associated with a social stigma (e.g., undocumented immigrants—Tourangeau, et al. 1997, homosexuality—Durso & Gates 2013; Badgett & Goldberg 2009).

Focus groups and interviews of individuals in same-sex relationships as well as cognitive interview testing of traditionally worded marital status questions suggests that the wording may lead to confusion because it does not represent the experiences of LGB individuals (Walther 2013; DeMaio, Bates, & O’Connell 2013; DeMaio & Bates 2012; Ridolfo, Perez, & Miller 2011). Thus, when answering a traditionally worded marital status question, LGB individuals may experience difficulty comprehending the question, recalling relevant information to answer it, judging what an appropriate response is, and

mapping their relationship identity to the response options (Tourangeau, Rips, & Rasinski 2000). People in same-sex relationships may have difficulty understanding if the question refers to legal marital status. Some same-sex couples who live in a state that does not recognize same-sex marriage (e.g., Nebraska) but who are married in a state that does recognize their marriage (e.g., neighboring Iowa) may have difficulty judging which response is appropriate. The possibility of the federal government recognizing same-sex marriages while living in a state that does not recognize them adds more confusion.

Reporting a marital status may be even more confusing when an individual in a same-sex relationship must map their response to categories that do not explicitly refer to same-sex relationships. LGB individuals who are in committed relationships but who are not legally married, denied access to marriage, or choose not to marry may not find a response category that accurately reflects their relationships. These cases may force individuals in same-sex relationships to either deny the significance of their relationship by reporting as “never married” or misreport as “married” even if not legally married (Gates 2009). Additional research shows that other factors like demographic characteristics (e.g., being older), having children, and perceived context (acceptance, formality, legality) influence whether same-sex couples identified as “married,” even if not legally married (Lofquist 2012; Bates, et al. 2012). In similar research about how LGB parents report their parent-child relationships, Baumle and Compton (2014) explain that same-sex families often consider the intent and structure of surveys, the legal context, biological relationships, and emotional ties when responding to surveys and matching their identity in surveys.

In addition to lacking appropriate response categories, concealment of LGB and same-sex relationship statuses remains a challenge because of the social stigma attached to homosexuality (Herek 2011; Gates 2011; Sylva, et al. 2009; Ragins, Singh, & Cornwell 2007; Schope 2002; Catania, et al. 1990). Individuals in same-sex relationships may be reluctant to report their marital status when doing so reveals their sexual orientation. For example, Gates (2011) found that one in ten individuals in same-sex relationships were reluctant to identify their relationship on the US Census and that 14.4% of individuals in same-sex relationships reported their relationship status as “roommates” or “other non-relative.” In additional research, focus groups of individuals in same-sex relationships indicates that the perceived levels of LGB acceptance, formality, and legality influence the terms these individuals use to describe their relationships (Bates, et al. 2012). For example, individuals may be more likely to refer to their same-sex partner as their husband, wife, or spouse when out with friends, but may use vague terms like partner or friend when in a conservative workplace (e.g., different acceptance and formality contexts). Moreover, how one describes their relationship may differ between a social survey and what one reports on their tax and health insurance records (e.g., different legality contexts). These findings suggest that the perceived context communicated in the question wording is likely to affect the reporting of relationship status by members of same-sex couples. When marital status questions do not include response options inclusive of same-sex relationships, LGB individuals may judge that the researcher does not consider same-sex relationships as a viable relationship category. Additionally, leaving response options that represent same-sex relationship statuses out of question wording may perpetuate the sense of social stigma attached to

homosexuality by creating the impression that the researcher is denying the existence of LGB individuals and the significance of their relationships.

Qualitative research found that LGB individuals recommend breaking out marital status response options using “same-sex” and “opposite-sex” relationship categories (e.g., same-sex married, opposite-sex married, same-sex unmarried partner, opposite-sex unmarried partner; Ridolfo, Perez, & Miller 2011)—a method also advocated by researchers focused on LGB individuals and their families (Durso & Gates 2013; Badgett & Goldberg 2009; Gates & Sell 2007). Adding explicit “same-sex” and “opposite-sex” categories may help LGB individuals more accurately map their relationship identity to the response options provided with marital status questions and may communicate an accepting context that reduces the desire of some to conceal their relationship identity.

3.1.2 Effects of LGB-Inclusive Marital Status Question Wording on Participation from Non-LGB Respondents and how they Report their Marital Status

Explicit LGB-inclusive response categories may enhance the quality of data for a minority of respondents; however, the LGB-inclusive wording may influence the participation and reports from non-LGB individuals as well. For example, cognitive interview testing of using “same-sex” and “opposite-sex” response options revealed that some socially conservative participants felt that such changes to marital status survey questions would be offensive and pointlessly politically correct (Ridolfo, Perez, & Miller 2011). These participants further described that they likely would still respond to a survey that included these response options, but this may be a socially desirable response during the cognitive interviews. LGB-inclusive wording may turn off others in ways that make them not respond to a survey. People who do not think that same-sex couples constitute a

legitimate family form may find the explicit recognition of it offensive (Powell, et al. 2010). People who hold this view and who are generally less tolerant of homosexuality (e.g., males, older people, political conservatives, more religious—Pew Research Center 2013; Baunach 2012) may be less likely to respond to a survey that includes an LGB-inclusive marital status question. If certain groups of people are less likely to respond to the survey because of the LGB-inclusive question wording, response rates may decrease and the completed respondent pools may be different from the target population on key demographic, political, and religious characteristics.

Other non-LGB respondents may simply decide not to respond to the LGB-inclusive marital status question, but still respond to the survey (i.e., item nonresponse for marital status). Item nonresponse may occur when respondents do not understand the question wording or are unmotivated to answer the question (Beatty & Herrmann 2001). Confusion may play a role here. Respondents who are unfamiliar with the LGB-inclusive terms (e.g., older people) may be unable to judge which response option to select (Durso & Gates 2013; Powell, et al. 2010). Other respondents may skip the question if they view the inclusive wording as offensive or biased in favor of LGB rights. Therefore, those who tend to be less tolerant of homosexuality may be more likely to skip the LGB-inclusive marital status question.

LGB-inclusive question wording may also produce misreports of marital status by non-LGB individuals. Non-LGB respondents may misunderstand the question wording, be unable to judge what response option to select, or may mistakenly mark the wrong relationship status, which would lead to an over count of same-sex couples. As a rare population, even a small percent of respondents who misidentify as LGB or being in a

same-sex relationship can profoundly affect the accuracy of the count of same-sex couples (Savin-Williams & Joyner 2013). Older individuals may be more likely to mistakenly select a “same-sex” option because of difficulty reading response options on a mail survey (similar to findings about relationship and gender questions by Black, et al. 2000) or because they are unfamiliar with sexuality terms (Durso & Gates 2013; Powell, et al. 2010)—such as distinguishing between “same-sex married” and “opposite-sex married.”

3.1.3 Census Testing of “Same-Sex” and “Opposite-Sex” Response Options

In US Census testing, Lofquist and Lewis (2014) examined the effects of using “same-sex” and “opposite-sex” relationship categories in a household roster on both the count of same-sex couples and participation and reports from non-LGB people. On the positive side, they observed roughly equal unfavorable and favorable reactions from respondents and found that response rates and item nonresponse rates did not significantly differ from typical worded relationship categories. On the negative side, examining reports of sex in household rosters and matching to Social Security data revealed that, even with the explicit same-sex and opposite-sex categories, a proportion of same-sex couples were actually opposite-sex couples with erroneous responses, leading to a significant over count of same-sex couples.

This one US Census Bureau test is far from conclusive and has limitations. For one, the household roster format does not apply to all survey situations—using “same-sex” and “opposite-sex” categories in a single marital status question may elicit different findings than in a household roster. Furthermore, government surveys, such as from the US Census Bureau, may obtain different participation levels compared to academic and

other social surveys (de Leeuw & de Heer 2002). People less tolerant of homosexuality may feel compelled to respond to a US government survey, such as the Census, whereas these same people may not respond to surveys from other organizations when they employ LGB-inclusive question wording. Backlash may not occur in government surveys, but may occur in other surveys. In particular, equal favorable and unfavorable reaction may not replicate when researchers employ LGB-inclusive wording in a survey of a more conservative target population. Thus, LGB-inclusive marital status question wording requires additional empirical testing.

3.1.4 Hypotheses

In this chapter, I report the results of my investigation of the effect that LGB-inclusive marital status question wording has on estimates for the prevalence of same-sex couples, unit and item nonresponse, and how non-LGB respondents report their marital status. My hypotheses are:

- H 3-1: *Response rates will be lower for a survey with an LGB-inclusive marital status question because people less tolerant of homosexuality may not respond because they find LGB-inclusivity offensive. Increasing LGB participation may also affect response rates to the LGB-inclusive wording treatment. However, because of the small size of the LGB population, the net effect will likely be a reduction in response rates.*
- H 3-2: *More respondents will identify as being in a same-sex relationship in the marital status question wording treatment that includes LGB-inclusive response options because the question wording communicates an accepting context and provides respondents in same-sex relationships appropriate categories that reflect their relationships.*
- H 3-3: *The characteristics of respondents to a survey with an LGB-inclusive marital status question will be demographically, politically, and religiously different because people less tolerant of homosexuality (i.e., males, older individuals, people with lower education levels, political conservatives, and more religious individuals) may not respond because they view the inclusivity unfavorably or offensive.*

- H 3-4: *Item nonresponse will be higher for an LGB-inclusively worded marital status question compared to a traditionally worded marital status question because some respondents (particularly those less tolerant of homosexuality) may skip it because they find it offensive and others may find the additional response options confusing and be unable to select a response.*
- H 3-5: *The rate of discordant reports of sexual orientation and marital status will be higher for older individuals and those with lower education levels in the inclusive question wording treatment because of difficulty understanding the question or marking a response on a mail survey.*

3.1.5 Interaction of LGB-Inclusive Cover Design and Question Wording

In this chapter, I also examine the interaction of the three cover designs discussed in chapter 2 (1) no cover images, 2) default cover design with images of opposite-sex couple families and individuals, and 3) an LGB-inclusive cover design with a images of both same-sex and opposite-sex couple families and individuals) and the two marital status question wordings. This experiment investigates whether the effects of LGB-inclusive marital status question wording depends on the cover image design on the survey. It examines tailoring both a survey's cover image and marital status question wording. I reason that both elements draw on a sense of LGB group identity and communicate an accepting context that encourages LGB participation and disclosure of their sexual orientation and relationship identity, and that for example, an LGB-inclusive cover design makes the LGB-inclusive marital status question seem more accepting and important to LGB people. However, LGB-inclusive tailoring may adversely affect participation and measurement from non-LGB individuals, whereby the LGB-inclusive cover design increases the likelihood that people will not respond to a survey with an LGB-inclusive marital status question. Thus, I examine the effects of the interaction of the cover designs and question wordings on response rates, and the percent of

respondents who identify as LGB and report being in a same-sex relationship. My specific hypotheses are:

- H 3-6: *The LGB-inclusive question wording will decrease response rates more in the inclusive cover design treatment than the default cover design treatment.*
- H 3-7: *The inclusive question wording will increase the percent of LGB respondents more in the inclusive cover design treatment than in the default cover design treatment.*
- H 3-8: *The inclusive question wording will increase the percent of respondents who report being in a same-sex relationship more in the inclusive cover design than in the default cover design treatment.*

3.2 Data and Methods

3.2.1 2013 Nebraska Annual Social Indicators Survey

To examine the LGB-inclusive marital status question, I embedded a question wording experiment in the 2013 Nebraska Annual Social Indicators Survey (NASIS). NASIS is an annual omnibus mail survey sent to a randomly selected address-based sample of n=6,000 Nebraska households provided by Survey Sampling International (SSI). NASIS asked a variety of questions on topics such as roads, wind energy, recycling, invasive plant species, political and social issues, and demographics (NASIS 2012-2013 Methodology Report). NASIS included four mailings (initial survey packet, postcard reminder, and two replacement survey packets) during its data collection period from June 24, 2013 to August 16, 2014. A total of n=1,608 respondents completed NASIS for a response rate of 27.3% (AAPOR RR1).

Question Wording Experiment. Sampled addresses for NASIS were randomly assigned to one of two question wordings (Figure 3.1; see Appendix A for the NASIS questionnaire; n=3,000 addresses randomly assigned to each question wording treatment). The “typical” question wording, used in previous waves of NASIS, included

the categories: married; married, living apart; not married, but living with a partner (cohabiting); never married; divorced; widowed; and separated. The “LGB-inclusive” question wording included the LGB-inclusive categories: same-sex married; opposite-sex married; same-sex married, living apart; opposite-sex married, living apart; not married, but living with a same-sex partner (cohabiting); not married, but living with an opposite-sex partner; never married; divorced; widowed; separated.⁸

40. What is your current marital or relationship status?

Married

Married, living apart

Not married, but living with a partner (cohabiting)

Never married

Divorced

Widowed

Separated

→ Go to Question #42

40. What is your current marital or relationship status?

Same-sex married

Opposite-sex married

Same-sex married, living apart

Opposite-sex married, living apart

Not married, but living with a same-sex partner (cohabiting)

Not married, but living with an opposite-sex partner (cohabiting)

Never married

Divorced

Widowed

Separated

→ Go to Question #42

Figure 3.1: Marital Status Question Wordings: Typical and Inclusive.

Cover Design Experiment. Sampled addresses were also randomly assigned to one of three cover designs (Figure 3.2; see Appendix A for the NASIS questionnaire and larger versions of the cover designs) in a fully crossed 2x3 experimental design that allows for examining the interaction of cover design and question wording. The sampled addresses were randomly assigned to one of three cover designs (n=2,000 addresses randomly assigned to each of three cover design treatments):

- (1) A no cover image treatment—blank cover page with only the survey title and sponsorship information,

⁸ A limitation of this research is that I could only adapt the marital status question wording used in previous waves of NASIS.

- (2) A default cover treatment—pictures of opposite-sex couples and their families and individuals appearing in typically gendered ways,
- (3) An inclusive cover treatment—pictures of LGB and heterosexual individuals and opposite-sex and same-sex couples and their families.

The covers were printed in black and white because of budget restrictions.

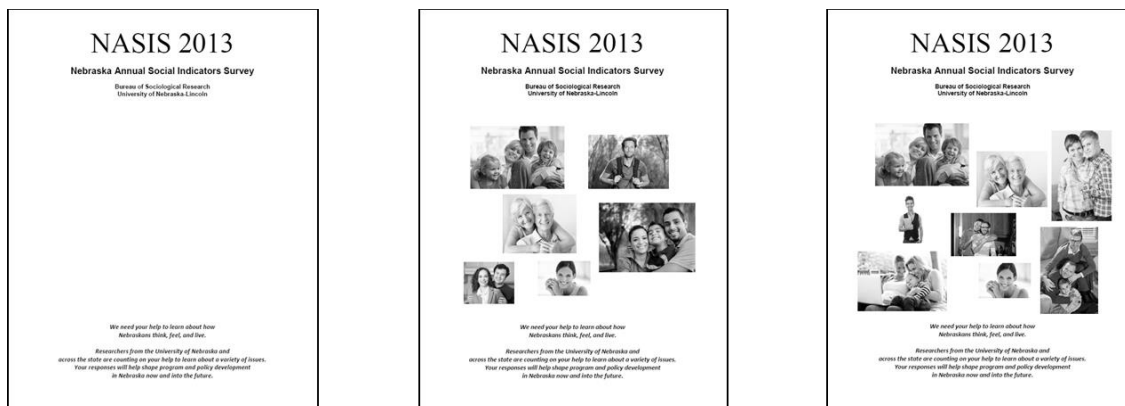


Figure 3.2: NASIS Cover Design Treatment: No Cover Image, Default, and Inclusive.

3.2.2 Analysis Plan

I examined the effects of the two question wording treatments using both the unweighted and weighted NASIS data. The weights consisted of nonresponse adjustments using Census data for Nebraska on age, sex, and region of the state. My first analyses examined if the response rates differed by the marital status question wording using chi-square analyses. I then identified the percent of respondents who report being in a same-sex relationship by both treatments of the marital status question and used Fischer's exact tests and chi-square tests to examine if the percent of same-sex couples significantly differed by the question wording. In the typical wording treatment, I used a separate sexual orientation question to identify same-sex couples. I code respondents as being in a same-sex relationship if they report being married or cohabiting and identify their sexual orientation as homosexual/gay or lesbian, bisexual, or something else. One

limitation of this approach is that a person may identify as bisexual but be in an opposite-sex relationship. This occurred for $n=4$ respondents, two of whom reported being bisexual and married and 2 of whom reported being bisexual and cohabiting. A second limitation stems from measuring sexual orientation through identity without considering attraction and behaviors (see Durso & Gates 2013; Badgett & Goldberg 2009). For the LGB-inclusive question wording, separate “same-sex” and “opposite-sex” categories identify respondents who are in same-sex relationships. I then compared the estimates to benchmark estimates of the percent of same-sex couples in Nebraska from Gates and Cooke’s (2010) analysis of US Census data using t-tests.

In the next part of the analyses, I investigated whether the marital status question wording affected participation. Using chi-square tests, I examined if the unweighted respondent pools differed by the question wording treatment on demographic, political, and religious characteristics (sex, age, education, households with kids, political affiliation, religion, and having an LGB family member, friend, coworker, or neighbor) and compared the completed sample pools to benchmark data for Nebraska from the 2012 American Community Survey (ACS) using t-tests. I report the weighted distributions of respondent characteristics by question wording treatment in Appendix D.

I also examined the item nonresponse rates for the marital status questions. I used chi-square tests to test if the item nonresponse rate for the marital status question significantly differed between the LGB-inclusive and typical treatments. I then estimated a logistic regression model predicting item nonresponse to the LGB-inclusive question based on sex, education, age, political affiliation, and religion. This logistic regression model tested the hypothesis that respondents less tolerant of homosexuality or those who

may be unfamiliar with the LGB-inclusive question wording are more likely to skip the marital status question.

I then assessed how non-LGB respondents reported their marital status in the LGB-inclusive question treatment. I quantified the rate of discordance between reported marital status and sexual orientation. That is, I identified the percent of respondents who reported being heterosexual but also report their marital status as same-sex married or in a same-sex cohabiting relationship. In comparison, $n=2$ respondents identified as LGB but selected the “opposite-sex married” marital status response option. No respondents identified as LGB and selected the “opposite-sex married, living apart” or “not married, but living with an opposite-sex partner (cohabiting)” response options. Using a dichotomous indicator of discordance (1=discordant sexual orientation and marital status, 0=concordant sexual orientation and marital status), I estimated a logistic regression model that predicted discordance by respondent demographic characteristics to test hypotheses that certain demographic factors (e.g., older age and lower education) are more likely to be associated with discordance. Finally, I re-estimated the percent of respondents in a same-sex relationship taking into account the discordance rate for non-LGB individuals. I used chi-square tests to examine if the LGB-inclusive question treatment led to an increase in the percent of respondents who report being in a same-sex relationship and compared the re-estimated rate to the benchmark data for Nebraska from the ACS using t-tests.

In the final set of analyses, I investigated the interaction effect of the three cover image designs and two question wordings. For each of the six experimental conditions, I report the response rate, percent of respondents who identify as LGB or report being in a

same-sex relationship, and item nonresponse rate for the marital status question. Using logistic regression models, I examined the interaction effect of the cover designs and question wording on each of these outcomes.

3.3 Results

3.3.1 Response Rates

H 3-1: Response rates will be lower for a survey with an LGB-inclusive marital status question.

The overall response rates of to the two question wording treatments did not significantly differ ($X^2(1)=0.41$, $p=0.521$). For the typical treatment, 27.16% of the original 3,000 sample members responded (AAPOR RR1). For the LGB-inclusive treatment, 26.43% of the original 3,000 sample members responded (AAPOR RR1).

3.3.2 Prevalence of Same-Sex Couples

H 3-2: More respondents will identify as being in a same-sex relationship in the marital status question wording that includes LGB-inclusive response options.

Table 3.1 displays the (weighted and unweighted) percent of respondents who identified being in same-sex and opposite-sex relationships, never married, divorced, widowed, and separated for the total NASIS sample and for respondents to each of the two question wording treatments. As hypothesized, significantly more respondents reported being in a same-sex relationship in the LGB-inclusive treatment (5.49%) than in the typical treatment (1.21%; $t=-4.19$, $p<0.001$), but the estimate from the LGB-inclusive treatment may be inflated from misreports from non-LGB respondents (see Section 3.3.5 below). The weighted estimate of the percent of same-sex couples for the total NASIS sample and within each question wording treatment was significantly higher than the Census estimate of the percent of Nebraska's population who are in same-sex relationships ($p<0.05$).

The percent reporting having other marital/relationship statuses also significantly differed between the two question wording treatments ($F(3.36, 5243.87)=5.25, p=0.001$). Compared to the inclusive question treatment, the typical treatment obtained more married respondents (71.61% vs. 62.60%; $t=3.02, p=0.003$), fewer widowed respondents (3.51% vs. 6.00%; $t=-3.04, p=0.002$), and fewer never married respondents (17.45% vs. 25.61%; $t=-2.89, p=0.004$). The percent of respondents who reported being separated or divorced did not significantly differ between the inclusive and typical wording treatments.

Based on the ACS benchmarks, the LGB-inclusive treatment obtained a sample that more closely resembled Nebraska's population in terms of marital status than the typical question wording treatment. The respondents to the inclusive treatment resembled Nebraska's population in terms of the percent who are married, never married, and widowed; however, it obtained significantly fewer respondents who are divorced and separated ($p<0.001$). In comparison, the typical treatment obtained significantly more married respondents and significantly fewer never married, divorced, separated, and widowed respondents than the ACS benchmark ($p<0.05$). For the marital status categories, the average absolute difference from the ACS benchmarks was 3.05 percentage points for the inclusive treatment and 5.15 percentage points for the typical treatment.

Table 3.1: Percent of same-sex and opposite-sex couples by LGB-inclusive and typical marital status question wordings and for the total NASIS sample.

	<u>Unweighted</u>				<u>Weighted</u>			T-Value (p-value)/ <i>F</i> _{R-S, Pearson} (p-value)	Census Estimate ^a
	Total	LGB- Inclusive	Typical	X ² (p-value)	Total	LGB- Inclusive	Typical		
Same-Sex Couple^b	3.38***	5.22***	1.63*	15.48 (<0.001)	3.26***	5.49***	1.21*	-4.19 (<0.001)	0.60
Married	61.11 ⁺	56.79	65.25***		67.29***	62.60 ⁺	71.61***		58.73
Never Married^c	18.26***	21.15	15.50***	22.01	21.36	25.61 ⁺	17.45*	5.25	21.87
Divorced	9.32**	8.22**	10.38	(<0.001)	6.37***	5.55***	7.13***	(0.001)	11.33
Widowed	10.92***	13.32***	8.63*		4.71***	6.00	3.51***		6.64
Separated	0.38***	0.52***	0.25***		0.27***	0.24***	0.30***		1.44

Note. ^aThe US Census does not officially report estimates of same-sex couples nor cohabiting couples. The estimate of same-sex couples comes from Gates & Cooke (2010). All other estimates come from 2012 5-year ACS data for Nebraska. Because the ACS includes 15-18 year olds in the marital status estimates and reports marital status by age groups with the youngest group as 15-19, I adjusted the estimates to remove the 15-19 year olds to be a more appropriate comparison population for the NASIS target population of Nebraska adults age 19 years and older. NASIS, however, includes 19 year olds in its samples, but only n=3 19 year olds are in the NASIS sample. Of these, n=2 reported being never married and n=1 reported cohabiting. Using benchmarks that do not include 19 year olds should make minimal difference for the analyses, but this is a limitation. ^bIncludes same-sex married and same-sex cohabiting. ^cIncludes respondents who report being never married, respondents who report cohabiting, and respondents who report being in a same-sex relationship because the ACS codes all of these as “never married”. ⁺p<0.1, *p<0.05, **p<0.01, ***p<0.001 denote difference from Census estimate.

Across the entire NASIS sample, the estimate of the percent of Nebraskans who are married is significantly higher than the ACS estimate (67.29% vs. 58.73%; $t=5.74$, $p<0.001$). The estimate of the percent of divorced, widowed, and separated Nebraskans is significantly lower than the ACS benchmark ($p<0.001$). The estimated percent of never married Nebraskans from the entire NASIS sample, though, did not significantly differ from the ACS benchmark.

3.3.3 Completed Sample Characteristics

H 3-3: The characteristics of respondents to a survey with an LGB-inclusive marital status question will be demographically, politically, and religiously different (i.e., fewer males, older individuals, people with lower education levels, political conservatives, and more religious individuals).

To examine the effect that providing explicit “same-sex” and “opposite-sex” response options for marital status questions had on participation, I report the completed sample compositions (unweighted) for the two question wording treatments for demographic, political, and religious characteristics. The weighted sample compositions for these characteristics appear in Appendix D.

Demographic Characteristics. Table 3.2 shows the demographic characteristics of the completed samples including sex, race, ethnicity, married/cohabiting vs. single, age, education level, and households with kids. Contrary to the hypothesis, the completed sample pools of the two question wording treatments did not significantly differ across the demographic characteristics at the $p<0.05$ level.

Table 3.2: Demographic characteristics of NASIS respondents by question wording treatment (unweighted percentages).^a

	Total	LGB- Inclusive	Typical	X² (p-value)	ACS Estimate
Sex					
Male	41.99***	39.77***	44.15**	3.14	49.7
Female	58.01***	60.23***	55.85**	(0.08)	50.3
Race					
White	95.17***	95.78***	94.57***	1.22	90.1
Not White/2+ Races	4.83***	4.22***	5.43***	(0.27)	10.9
Ethnicity				0.01	
Hispanic^b	2.25***	2.20***	2.29***	(0.90)	9.6
Marital Status					
Married/Cohabiting	68.20	66.97	69.38	1.04	–
Single	31.80	33.03	30.63	(0.31)	–
Age					
Mean	56.89	57.04	56.75		–
19-34	11.44***	11.35***	11.53***		28.4
35-49	18.91***	19.80***	18.04***	3.55	25.5
50-64	33.27***	31.15***	35.34**	(0.32)	26.9
65+	36.38***	37.70***	35.09***		19.1
Education					
HS or < Some College	22.12***	21.30***	22.92***	0.76	37.2
BA+	34.96	35.82	34.11	(0.68)	36.2
BA+	42.92***	42.88***	42.97***		26.6
Kids in HH					
Yes	27.72***	27.75**	27.70**	0.001	31.9
No	72.28***	72.25**	72.30**	(0.98)	68.1

Note. ⁺p<0.1, *p<0.05, **p<0.01, ***p<0.001 denote difference from ACS estimate. ^aResults did not differ from weighted analyses (Appendix D). ^bThe noticeably low prevalence of Hispanic respondents to NASIS is likely because NASIS was only fielded in English.

To test if the compositions of the completed samples to each treatment represents the demographic makeup of Nebraskans, I compared them to 2012 ACS benchmarks (Table 3.2). Among all respondents (both LGB and non-LGB), most of the demographic characteristics significantly differed from ACS benchmark data for Nebraska's population in ways similar to other research with mail surveys and address-based samples (e.g., Link, et al. 2008), and previous waves of NASIS in particular (e.g., Olson, Stange, & Smyth 2014). The sample pools significantly differed from the ACS benchmark estimates for all characteristics except for the percent of respondents with some college. The total NASIS sample, and sample pools to each question wording treatment contain

significantly more females, non-Hispanics, whites, older people, those with higher education levels, and people who live in households without children (all differ from ACS at $p < 0.01$). For example, the ACS benchmark shows that 50.3% of Nebraska's population is female, but 55.85% of respondents to the typical question wording treatment of NASIS, 60.23% of respondents to the LGB-inclusive question wording treatment of NASIS, and 58.01% of all NASIS respondents are female.

Across the six demographic characteristics, the average absolute difference from the ACS benchmarks was 9.01 percentage points for the inclusive treatment and 8.45 percentage points for the typical treatment. The average absolute difference for the total NASIS sample was 8.72 percentage points.

Political Characteristics. Table 3.3 shows the distributions for political party identification, political ideology, and whom the respondent voted for in the 2012 Presidential Election for the two marital status question treatments and the total NASIS sample. Political party identification significantly differed between the two question wording treatments. Pairwise comparisons revealed that that fewer respondents identified as Republican in the inclusive treatment than the typical treatment (40.29% vs. 45.14%), however, this difference only approached significance ($z=1.91$, $p=0.06$). Significantly more respondents identified as Independents or members of another political party in the inclusive treatment than the typical treatment (32.45% vs. 26.07%; $z=-2.74$, $p=0.01$). The percent of respondents who identified as Democrats did not significantly differ between the treatments (27.26% vs. 28.79%; $z=0.666$, $p=0.51$). Contrary to the hypothesis, political ideology and 2012 presidential vote did not significantly differ between the two question wording treatments.

Table 3.3: Political characteristics of NASIS respondents by question wording treatment (unweighted percentages).^a

	Total	LGB-Inclusive	Typical	X ² (p-value)
Political Party				
Democrat	28.04	27.26	28.79	7.71 (0.02)
Republican	42.74	40.29	45.14	
Independent/Other	29.22	32.45	26.07	
Political Ideology				
Very Liberal	3.49	4.51	2.50	5.30 (0.26)
Liberal	15.55	15.03	16.05	
Moderate	36.53	36.20	36.84	
Conservative	34.79	35.25	34.34	
Very Conservative	9.65	9.02	10.26	
2012 Presidential Vote				
Obama	37.75	37.97	37.53	0.07 (0.99)
Romney	48.27	47.97	48.56	
Other	1.93	1.89	1.97	
Did Not Vote	12.05	12.16	11.94	

Note. ^aResults did not differ from weighted analyses (Appendix D).

Religious Characteristics. Contrary to the hypothesis, born-again Christian identity, religious affiliation, religious attendance, and importance of religion did not significantly differ between the LGB-inclusive and typical treatments (Table 3.4). However, estimates of born-again Christian identity and whether respondents have a religion or no religious affiliation approached significance in the hypothesized directions. More respondents identified as born-again Christian in the typical treatment (29.74%) than in the LGB-inclusive treatment (25.27%; $X^2(1)=3.72$, $p=0.054$). More respondents to the LGB-inclusive wording (12.78%) reported having no religion than respondents to the typical question wording (9.74%; $X^2(1)=3.53$, $p=0.06$). The distribution of Protestants, Catholics, other religions, and no religion, though, did not significantly differ between the treatments.

Table 3.4: Religious characteristics of NASIS respondents by question wording treatment (unweighted percentages).^a

	Total	LGB-Inclusive	Typical	X² (p-value)
Born-Again Christian				
Yes	27.55	25.27	29.74	3.72
No	72.45	74.73	70.26	(0.05)
Religion				
Has a Religious Affiliation	88.76	87.22	90.26	3.53
None	11.24	12.78	9.74	(0.06)
Protestant	55.82	55.26	56.36	
Catholic	28.01	26.76	29.22	4.24
Other	4.93	5.19	4.68	(0.24)
None	11.24	12.78	9.74	
Religious Attendance				
Several Times a Week	6.10	6.84	5.37	
Once a Week	30.93	31.05	30.82	
Once a Month to Nearly Every Week	19.91	17.76	21.99	6.68
About Once a Year to Several Times a Year	22.37	22.24	22.51	(0.25)
Less than Once a Year	8.95	9.21	8.70	
Never	11.74	12.89	10.61	
Religious Influence				
Very Much	36.14	36.15	36.12	
Quite a Bit	27.66	27.57	27.76	
Some	19.96	20.42	19.52	1.30
A Little	7.32	6.63	7.98	(0.86)
None/Not Religious	8.92	9.23	8.62	

Note. ^aResults did not differ from weighted analyses (Appendix D).

Other Respondent Characteristics. Contrary to the hypothesis, whether respondents have a LGB relative, friend, or co-worker and live in urban vs. rural area did not significantly differ between the two marital status question wordings (Table 3.5). Additionally, the percent of respondents who identified as LGB did not significantly differ between the LGB-inclusive and typical question treatment and the estimates did not significantly differ from Gallup's estimate of the percent of Nebraska's population who identifies as LGB.

Table 3.5: Other characteristics of NASIS respondents by question wording treatment (unweighted).^a

	Total	LGB-Inclusive	Typical	X ² (p-value)	Gallup Estimate ^b
LGB					
Relative/Friend/Co-worker					
Yes	43.08	43.61	42.57	0.17	–
No	56.92	56.39	57.43	(0.68)	–
Geography					
Urban	81.49	81.26	81.72	0.06	–
Rural	18.51	18.74	18.28	(0.81)	–
Sexual Orientation					
LGB	2.19	1.96	2.42	0.39	2.7
Non-LGB	97.81	98.04	97.58	(0.53)	97.3

Note. ⁺p<0.1, *p<0.05, **p<0.01, ***p<0.001 denotes significant difference from Gallup estimate. ^aResults did not differ from weighted analyses (Appendix D). ^bNot an official benchmark, from Gates & Newport (2013).

Summary. The findings about the demographic, political, and religious makeup of the completed samples for the LGB-inclusive and typical marital status question wording treatments showed little evidence that the LGB-inclusive treatment influenced the types of people who responded to NASIS. The distributions did not significantly differ between the treatments for the majority of respondent characteristics. Only political party identity significantly differed between the treatments, however, contrary to the hypothesis, significantly more respondents identified as Independent in the LGB-inclusive treatment than the typical treatment, and only marginally fewer respondents identified as Republican in the LGB-inclusive treatment than the typical treatment. Similarly, results show that fewer respondents identified as born-again Christian and fewer reported a religious affiliation in the LGB-inclusive treatment than the typical treatment, but these differences only approached significance. Because these are in the hypothesized direction, a larger sample employing the LGB-inclusive question wording may observe a significant backlash from Republicans, born-again Christians, and religious individuals.

The analyses also showed that the completed samples for the LGB-inclusive and typical treatments similarly differed from the ACS benchmarks for Nebraska for the demographic characteristics. Neither treatment produced an unweighted sample that resembled Nebraska's population, thus nonresponse adjustment weights are necessary to make the NASIS sample demographically resemble Nebraska's population (see Appendix D).

I report separate analyses for the effects of the question wording treatments on the composition of the completed samples for only non-LGB and LGB respondents in Appendix B and Appendix C, respectively. Significant and marginal differences between the question wordings occur for the same characteristics for all respondents and when subset to only non-LGB respondents. Chi-square and Fisher's exact tests show that the demographic, political, and religious characteristics did not significantly differ between the typical and inclusive question wording treatments of NASIS for the LGB respondents (Appendix C).

3.3.4 Item Nonresponse

H 3-4: Item nonresponse will be higher for an LGB-inclusively worded marital status question compared to a traditionally worded marital status question.

Consistent with the hypothesis, chi-square analyses indicated that adding explicit "same-sex" and "opposite-sex" response options led to a significant increase in item nonresponse compared to a typically worded question (3.40% vs. 1.84%, $(X^2(1)=3.87, p=0.049; \text{Table 3.6})$). However, contrary to the hypothesis, respondent characteristics typically associated with intolerance of homosexuality and confusion about the sexuality terms did not significantly predict item nonresponse to the LGB-inclusive treatment (Table 3.7). This finding suggests that other factors may be leading to the increase in item

nonresponse, such as the increased length contributing to the perception that the question is difficult/confusing and increasing respondent burden. An important consideration, however, is that the small sample size for the LGB-inclusive treatment (n=614) and relatively low item nonresponse rate reduced the statistical power for analyzing item nonresponse.

Table 3.6: Item nonresponse rates for marital status question by LGB-inclusive and typical wording among all respondents.

	Total	LGB-Inclusive	Typical	X ² (p-value)
Missing	2.61	3.40	1.84	3.87
Not Missing	97.39	96.60	98.16	(0.05)
n	1,608	793	815	

Table 3.7: Logistic regression predicting item nonresponse to the LGB-inclusive marital status question wording.

	Odds Ratios	SE	95% Confidence Interval	
			Lower Bound	Upper Bound
Sex	0.905	0.590	0.252	3.248
Age (Mean Centered)	0.996	0.020	0.957	1.036
Education				
HS or < (Reference)	–	–	–	–
Some college	3.543	3.935	0.402	31.254
BA+	1.525	1.750	0.161	14.461
Born-Again Christian Religion	0.709	0.508	0.174	2.890
Religious vs. None	0.898	0.783	0.163	4.958
Political Party				
Democrat (Reference)	–	–	–	–
Republican	0.950	0.915	0.144	6.281
Independent/Other	0.874	0.728	0.171	4.467
Political Ideology				
Very liberal	3.015	3.820	0.252	36.126
Liberal	2.400	2.118	0.425	13.540
Moderate (Reference)	–	–	–	–
Conservative	0.624	0.631	0.086	4.525
Very conservative	2.430	2.565	0.307	19.236
Intercept	0.014	0.027	0.000	0.589

Note. n=614; ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

3.3.5 Discordant Sexual Orientation and Marital Status Reports

H 3-5: *Discordant reports of sexual orientation and marital status will be higher for older individuals and those with lower education levels in the inclusive question wording treatment.*

Misreports of marital status by non-LGB respondents may produce the previously reported finding that the LGB-inclusive question wording led to a significant increase in the percent of respondents who report being in a same-sex relationship (see section 3.3.2). Of respondents to the LGB-inclusive treatment, 4.38% (n=33) identified their sexual orientation as heterosexual/straight but selected one of the “same-sex” response options to the marital status question.⁹ The vast majority of respondents with this discordance selected the same-sex married option (93.94%), far fewer selected “same-sex married, living apart” (3.03%) and “not married, but living with a same-sex partner (cohabiting)” (3.03%; $X^2(2)=10.60$, $p=0.01$)¹⁰. In comparison, as mentioned above, very few respondents (n=2) identified as LGB but selected the “opposite-sex married” marital status response option. These respondents reported their sexual orientation as bisexual, so these might be accurate marital status reports.

The small discordant rate of 4.38% in the LGB-inclusive treatment inflated the estimate of the prevalence of same-sex couples. Both the original estimate of same-sex couples and the estimate adjusted for discordance appear in Table 3.8. Originally, 5.22% of respondents reported being in a same-sex relationship, but adjusting this estimate for discordance reduces it to 0.97% of respondents. Contrary to the hypothesis, the adjusted

⁹ Same-sex married; same-sex married, living apart; not married, but living with a same-sex partner (cohabiting).

¹⁰ An additional explanation for the one respondent who identified as heterosexual/straight and selected the response option “Not married, but living with a same-sex partner (cohabiting)” is that they are living with a roommate of the same-sex and were confused by the combination of relationship and living arrangement in the question wording.

estimate was not significantly different from the estimate in the typical treatment¹¹ ($X^2(1)=1.39, p=0.24$), nor was it different from the Census estimate ($t=1.01, p=0.31$). This finding indicates that the LGB-inclusive question wording did not lead to more respondents identifying as being in a same-sex relationship compared to the typical question wording. Additionally, the estimate of the percent of respondents who reported being in a same-sex relationship in the total sample (1.33%)¹² and the estimate in the typical wording treatment (1.67%) continued to be significantly higher than the ACS estimate (0.60%).

The unweighted and weighted data produced similar results regarding the effect of discordance on the percent of same-sex couples. The only difference was that using the weighted data, the estimate of the percent of same-sex couples in the typical treatment only marginally differs from the Census estimate.

Table 3.8: Percent of same-sex couples with and without discordance by acceptance and typical marital status question wording.

	Total Sample	LGB-Inclusive	Typical	X^2 (p-value) / $F_{R-S, Pearson}$ (p-value)	Census Estimate ^a
Same-Sex Couples with Discordance					
Unweighted	3.38	5.22	1.63	15.48 (<0.001)	0.6
Weighted	3.26***	5.49***	1.21*	-4.19 (<0.001)	
Same-Sex Couples without Discordance					
Unweighted	1.33*	0.97	1.67*	1.39 (0.24)	0.6
Weighted	1.34*	1.46	1.23 ⁺	-0.32 (0.75)	

Note. ⁺p<0.1, *p<0.05, **p<0.01 ***p<0.001 significantly differ from Census estimate.
^aFrom Gates & Cooke (2010).

¹¹ I estimated same-sex couples in the typical treatment by combining respondents' reported marital status and sexual orientation (e.g., married and homosexual/gay or lesbian is counted as same-sex married).

¹² Adjusted for discordance.

Table 3.9 displays the results of a logistic regression predicting discordant reports to the marital status and sexual orientation questions. Results showed that sex, age, and education level did not significantly predict whether a respondent reported a discordant marital status and sexual orientation. These findings indicate that, contrary to the hypothesis, respondents who may have more difficulty marking a response on a mail survey or who may be less likely to understand the “same-sex” and “opposite-sex” terminology are not significantly more likely to report a discordant marital status and sexual orientation; however, the small sample size (n=713) may limit the analyses.

A possible explanation for observing discordance is that respondents are satisficing and merely selecting the first seemingly relevant response option. Because “same-sex married” was the first response option in the list, some respondents may be quickly answering the questions in the survey and select the first “married” option. Presenting the response options in a different order may remedy this error; however, the Census research shows that even when response option are ordered with “opposite-sex” options presented first, some respondents still mistakenly mark a “same-sex” option (Lofquist & Lewis 2014).

Table 3.9: Logistic regression predicting discordant marital status and sexual orientation reports among respondents to the LGB-inclusive marital status question wording treatment.

	Odds Ratio	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Sex	0.807	0.310	0.380	1.714
Age (Mean Centered)	1.000	0.011	0.978	1.023
Education				
HS or < (Reference)	–	–	–	–
Some college	0.845	0.434	0.309	2.310
BA+	0.976	0.478	0.374	2.546
Intercept	0.053	0.022	0.023	0.120

Note. n=713; ⁺p<0.1, *p<0.05, **p<0.01, ***p<0.001

3.4 Cover Image and Question Wording Interaction Results

Table 3.10 displays the response rates and the percent of respondents who identify as LGB and the corrected percent of respondents who identify as being in a same-sex relationship for all six cover design and marital status question wording treatments (see Chapter 2 for main effects findings for the cover image designs).

The no cover image with the typical marital status question wording treatment of NASIS achieved the highest response rate at 29.9% (AAPOR RR1). The default cover design with typical question wording treatment had the lowest response rate of the six treatment groups at 24.5% (AAPOR RR1).

At 6.57%, the inclusive cover and question wording treatment obtained the most respondents who identify as LGB while at 0.57%, the default cover and typical question wording treatment obtained the fewest LGB respondents, which is also significantly lower than Gallup's estimate of the percent of Nebraskans who identify as LGB ($t=-5.20$, $p<0.001$). The percent of respondents who identified as LGB among the other five treatment groups did not significantly differ from the Gallup estimate.

The inclusive cover with the inclusive question wording obtained the most respondents who reported being in a same-sex relationship (2.11%) while the no cover image with the inclusive question wording obtained the fewest (0.43%). Across the six treatment groups, none significantly differed from the Census estimate of the percent of same-sex couples in Nebraska.

In the next two sections, I report the results of logistic regression models that examined the interaction effects of the cover design and question wording treatments on

response rates and the percent of respondents who identified as LGB or reported being in a same-sex relationship.

Table 3.10: Percent of respondents who identify as LGB and report being in a same-sex relationship, and response rates for six treatments of NASIS.

	Total	Inclusive Cover + Inclusive Wording	Inclusive Cover + Typical Wording	Default Cover + Inclusive Wording	Default Cover + Typical Wording	No Cover Image + Inclusive Wording	No Cover Image + Typical Wording	Gallup Estimate^a	Census Estimate^b
Response Rates^c	27.3	26.9	27.1	24.8	24.5	27.6	29.9	–	–
% LGB									
Unweighted	2.19	2.68	3.86	0.82***	0.87**	2.30	2.37	2.7	–
Weighted	2.78	6.57	4.15	1.27	0.57***	2.24	1.66		
% Same-Sex Couples (Corrected for Discordance)									
Unweighted	1.33*	1.22	1.94	0.88	1.74	0.81	1.38	–	0.60
Weighted	1.34*	2.11	1.62	1.92	1.05	0.43	1.03		
n	1608	269	271	248	245	276	299		

Note. ^aNot an official benchmark, from Gates & Newport (2013). ^bFrom Gates & Cooke (2010). ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001 denotes difference from Gallup or Census estimate. ^cAAPOR RR1.

3.4.1 Response Rates

H 3-6: The LGB-inclusive question wording will decrease response rates more in the inclusive cover design treatment than the default cover design treatment.

Figure 3.3 displays the response rates across the six treatment groups (three cover image treatments and two question wording treatments). As seen in the graph, the trend of response rates for the typical and inclusive question wording treatments are quite similar across the cover image treatments. The highest response rate for both the inclusive and typical question wording treatments occurred with the no cover image design (27.60% and 29.90%, respectively). The lowest response rates occurred for both question wording treatments with the default cover design (inclusive wording=24.80%; typical wording=24.50%).

Table 3.11 reports the results of a logistic regression model predicting response rates to NASIS with the main effects of the cover design and question wording treatments, as well as the interaction of the treatments. The interaction term was not statistically significant in the model. The main effect of the cover design treatment was the only significant finding, with the no cover image treatment significantly increasing the probability of responding compared to the default treatment ($\beta=0.2734$, $p=0.007$). Thus, contrary to the hypothesis, the inclusive cover design did not multiply the effect that the inclusive question wording had on lowering response rates, nor did the inclusive cover design attenuate the effect that the typical question wording had on increasing response. This finding suggests that inclusivity in the survey's cover and in the question wording had no effect on response rates.

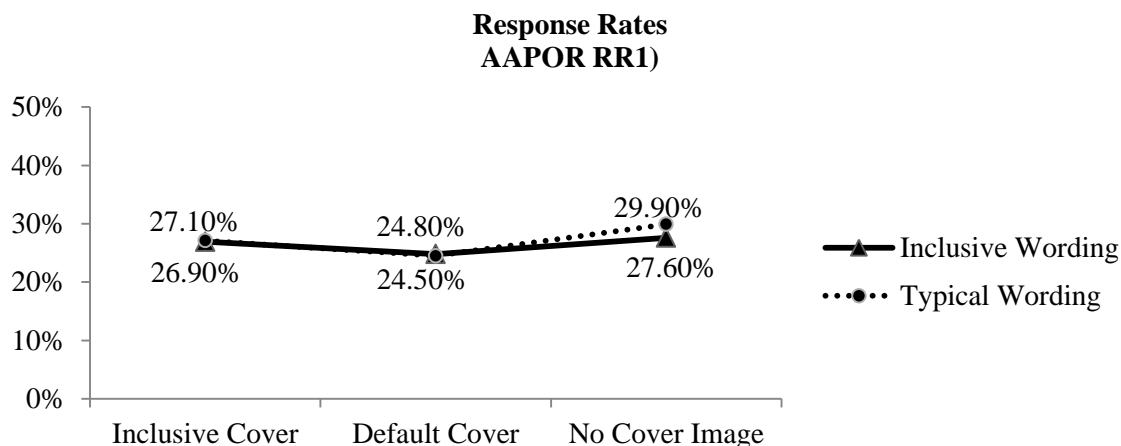


Figure 3.3: Response Rates by Cover Design and Question Wording Treatments.

Table 3.11: Coefficients of logistic regression model examining the interaction effects of cover design and question wording treatments on response rates.

Wording Treatment	
Typical	(Reference)
Inclusive	0.0162
Cover Design Treatment	
No Cover Image	0.2734**
Default	(Reference)
Inclusive	0.1359
Wording Treatment * Cover Design Treatment	
Typical Wording * No Cover Image	-0.8521
Typical Wording * Default Cover	-1.1255
Typical Wording * Inclusive Cover	-0.9896
Inclusive Wording * No Cover Image	-0.9644
Inclusive Wording * Default Cover	-1.1093
Inclusive Wording * Inclusive Cover	-0.9997
Intercept	-1.1255

Note. [†]p<0.10, *p<0.05, **p<0.01, ***p<0.001. Standard errors are reported in Appendix F.

3.4.2 Sexual Orientation and Same-Sex Couples

H 3-7: *The inclusive question wording will increase the percent of LGB respondents more in the inclusive cover design treatment than in the default cover design treatment.*

H 3-8: *The inclusive question wording will increase the percent of respondents who report being in a same-sex relationship more in the inclusive cover design than in the default cover design treatment.*

Figure 3.4 shows the weighted percent of NASIS respondents who identified as LGB for each question wording treatment across the cover design treatments. The trend of the percent of LGB respondents is quite similar across the cover design treatments for both the inclusive and typical question wording treatments. The inclusive cover treatment obtained the most LGB respondents for both the inclusive and typical question wording treatments (6.57% and 4.15%, respectively). Conversely, the default cover treatment produced the fewest LGB respondents for both question wording treatments (inclusive question wording=1.27%; typical question wording=0.57%).

Table 3.12 displays the results of logistic regression models that predicted whether respondents identified as LGB or not by the question wording and cover design treatments as well as the interaction of the treatments. The main effect of the inclusive cover design was significant, with the inclusive cover design leading to more LGB respondents. The main effect of the question wording and the interaction effect, however, were not significant. Unexpectedly, the inclusive cover design did not lead to significantly more LGB respondents in the inclusive wording treatment than in the typical wording treatment. This finding indicates that inclusivity in the cover design was the driving force behind increasing LGB participation, irrespective of the inclusivity of the question wording.

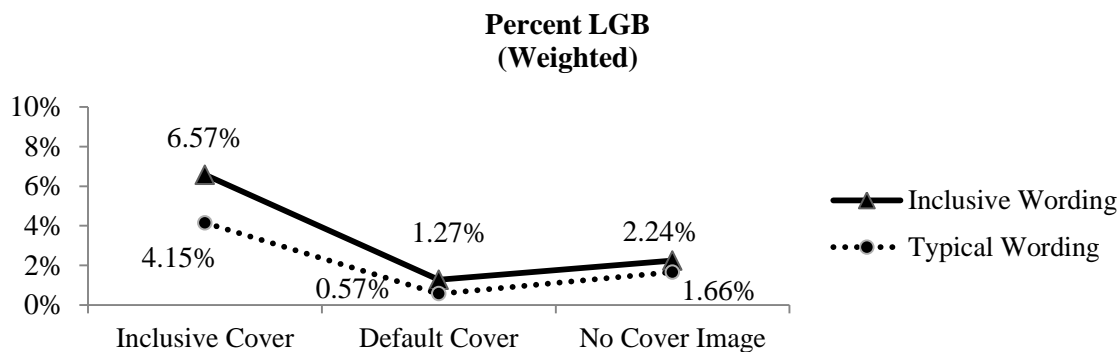


Figure 3.4: Percent of NASIS respondents (weighted) who identified as LGB by cover design and question wording treatment.

Table 3.12: Coefficients of logistic regression model examining the interaction effects of cover design and question wording treatments on the percent of respondents who identify as LGB.

	Unweighted	Weighted
Wording Treatment		
Typical	(Reference)	(Reference)
Inclusive	-0.0593	0.8154
Cover Design Treatment		
No Cover Image	1.0235	1.0830
Default	(Reference)	(Reference)
Inclusive	1.5257 ⁺	2.0264*
Wording Treatment * Cover Design Treatment		
Typical Wording * No Cover Image	-3.7171	-4.0841
Typical Wording * Default Cover	-4.7406	-5.1671
Typical Wording * Inclusive Cover	-3.2149	-3.1407
Inclusive Wording * No Cover Image	-3.7495	-3.7744
Inclusive Wording * Default Cover	-4.8000	-4.3517
Inclusive Wording * Inclusive Cover	-3.5914	-2.6540
Intercept	-4.7406	-5.1671

Note. ^aOutcome coded as LGB=1, non-LGB=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001. Standard errors are reported in Appendix F.

Figure 3.5 displays the percent of respondents who reported being in a same-sex relationship for inclusive and typical question wordings across the cover design treatments. The inclusive cover treatment led to the highest percent of same-sex couples for both the inclusive and typical question wording treatments (2.11% and 1.62%, respectively). The no cover image treatment led to the lowest percent of same-sex

couples for both the inclusive and typical question wording treatments (0.43% and 1.03%, respectively).

Table 3.13 reports the results of logistic models predicting same-sex couple identity by the main effects of the cover design and question wording treatments, as well as their interaction. None of the main effects or the interaction effects was statistically significant. Contrary to the hypothesis, the inclusive cover design did not lead to significantly more respondents in same-sex relationships in the inclusive wording treatment than in the typical wording treatment.

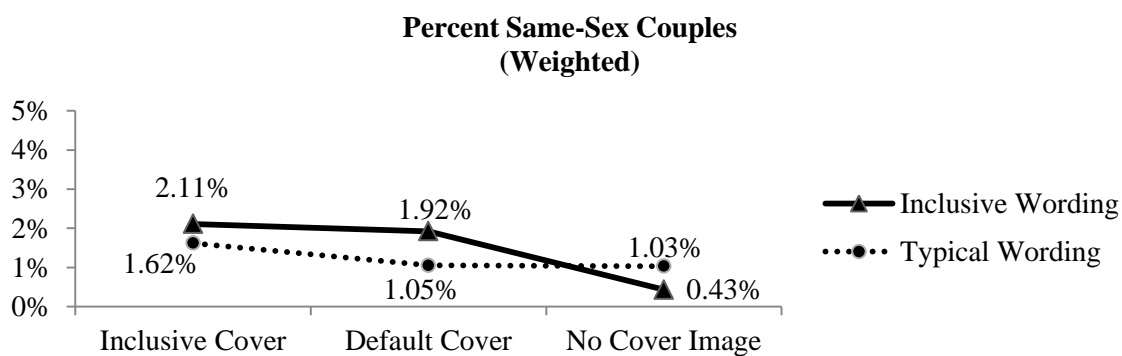


Figure 3.5: Percent of NASIS respondents (weighted) who reported being in a same-sex relationship by cover design and question wording treatment.

Table 3.13: Coefficients of logistic regression model examining the interaction effects of cover design and question wording treatments on the percent of respondents who reported being in a same-sex relationship.

	Unweighted	Weighted
Wording Treatment		
Typical	(Reference)	(Reference)
Inclusive	-0.6931	0.6107
Cover Design Treatment		
No Cover Image	-0.2355	-0.0222
Default	(Reference)	(Reference)
Inclusive	0.1103	0.4387
Wording Treatment * Cover Design Treatment		
Typical Wording * No Cover Image	-4.2697	-4.5644
Typical Wording * Default Cover	-4.0342	-4.5422
Typical Wording * Inclusive Cover	-3.9240	-4.1035
Inclusive Wording * No Cover Image	-4.8081	-5.4407
Inclusive Wording * Default Cover	-4.7274	-3.9315
Inclusive Wording * Inclusive Cover	-4.3944	-3.8378
Intercept	-4.0342	-4.5422

Note. ^aOutcome coded as same-sex couple=1, not same-sex couple=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001. Standard errors are reported in Appendix F.

3.4.3 Summary of Interaction Effects

None of the interaction effects of the question wording and cover design treatments were statistically significant. Overall, the results confirmed the main effect findings that the default cover treatment depressed response rates compared to the no cover image treatment and that the inclusive cover design led to more LGB respondents than the default cover design (see Chapter 2). Thus, inclusivity of the survey's cover image worked to encourage LGB participation while the question wording had no significant effect. Researchers, therefore, may find that inclusivity best influences participation of hard-to-reach subgroups when it is in survey features that sample members see while deciding whether to respond (e.g., cover design) rather than buried in the survey questions where only those who decide to respond are likely to see it.

3.5 Discussion

Testing “same-sex” and “opposite-sex” response options against a traditionally-worded marital status question reveals little evidence that the LGB-inclusive wording addressed the confusion and concealment challenges of measuring the marital status of same-sex couples. In fact, the LGB-inclusive marital status question wording may have caused confusion for respondents, leading to item nonresponse and misreporting of marital status by non-LGB respondents.

There was no evidence that the explicit “same-sex” response options led more people in same-sex relationships to reveal their relationship status than in the typical question wording. Analyses showed that the initial indication of a significant increase in same-sex couples in the LGB-inclusive wording treatment stems from discordance: respondents marking a same-sex response option but reporting a sexual orientation of heterosexual/straight. Nevertheless, the estimate of the percent of Nebraskans who are in a same-sex relationship was significantly higher than the Census estimate for the total NASIS sample (after adjusting for discordance) and among the sample in the typical question wording treatment. This increase in same-sex couples compared to the Census data may result from an actual increase in the number of same-sex couples since the collection of the Census data. Other explanations are that the increase is a result of individuals in same-sex relationships being more likely to report their relationship (regardless of question wording) because of increasing social acceptance of their relationships or different reporting behaviors between government and university surveys.

There was also little evidence that the LGB-inclusive marital status question wording led to a backlash from people who tend to be less tolerant of homosexuality. The response rates did not significantly differ, and the respondent pools did not significantly differ on the majority of demographic, political, and religious characteristics. Significant differences only occurred for political party identity, but contrary to the hypothesis, more respondents identified as Independent or with another political party in the LGB-inclusive treatment than the typical treatment. Only marginally fewer respondents identified as Republican in the LGB-inclusive treatment than the typical treatment. Similarly, marginally fewer respondents identified as a born-again Christian and marginally fewer reported a religious affiliation in the LGB-inclusive treatment. This marginal backlash from the most conservative people may be significant in a study with a larger sample size.

Despite little evidence of a backlash in who responded to the LGB-inclusive treatment, item nonresponse was significantly higher for the LGB-inclusive worded question than the typical wording. However, no hypothesized respondent characteristics significantly predicted this item nonresponse. One possibility is that the sample size was too small to observe a significant effect. Markings on the surveys from respondents who did not answer the marital status question suggests that confusion and a backlash against the inclusivity led to some item nonresponse, though not statistically associated with proxy variables to identify these respondents. Some respondents drew large question marks next to unanswered LGB-inclusive marital status questions, suggesting confusion about the question. The increased length of the additional response options or presenting the same-sex options first, which made finding the opposite-sex married option more

difficult, may have increased the perceived burden and caused confusion for the majority of respondents. Presenting the opposite-sex options before the same-sex options may alleviate some of the item nonresponse issues, as the Census testing found no difference in item nonresponse rates in their test that presented the opposite-sex response options first (Lofquist & Lewis 2014). Other respondents crossed out the question, suggesting that they may have found the LGB-inclusivity offensive and decided not to respond.

Overall, some of the findings from this study confirm those from other testing of LGB-inclusive marital status question wording, but other findings differ from other testing in important ways. The findings of no significant response rate differences and an over count of same-sex couples stemming from inaccurate reports from respondents in opposite-sex relationships are consistent with the US Census Bureau testing (Lofquist & Lewis 2014), but the other findings on sample composition and item nonresponse rates differ from the Census findings and are significant for researchers. This research shows that employing the LGB-inclusive marital status question wording may lead to increased item nonresponse. Additionally, these findings suggest that the overall threat of a backlash from people who are less tolerant of homosexuality is small, but that in a survey of a larger sample of a more conservative target population, a significant backlash may come in the form of significantly fewer Republicans and individuals who are more religious.

What is most concerning for researchers interested in diverse family forms is that the low discordant rate of 4.38% profoundly affected the estimates of the percent of respondents in a same-sex relationship. This finding highlights that when a small number of respondents mistakenly mark a response that classifies them as a sexual minority, the

effect on estimates is great (Savin-Williams & Joyner 2013). Thus, researchers must be cautious when studying family forms that make up a small portion of the population (Cheng & Powell 2005).

Interaction of Cover Design and Question Wording. The interaction effects of the question wording and cover design treatments were not statistically significant for response rates, the percent of respondents who identified as LGB, and the percent of respondents who reported being in same-sex relationships. The default cover design lowered response rates compared to no cover image and the inclusive cover design led to significantly more LGB respondents than the default cover design (main effects). The question wording treatments did not have a significant effect on these outcomes. These findings suggest that researchers can employ cover image designs to encourage LGB participation irrespective of the question wording.

3.6 Limitations and Future Research

Fielding this test of the LGB-inclusive marital status question wording in Nebraska is both an advantage and limitation of this study. The advantage is that Nebraska tends to be more of a conservative state with more Republicans and more religious people (Newport 2014; Saad 2013), which is a good setting to examine backlash to LGB-tailoring. The small LGB population of Nebraska (estimated at 2.7%—Gates & Newport 2013) limits the LGB sample size and statistical power of analyses.

Another significant limitation is that Nebraska currently bans same-sex marriage. Having no formal recognition of same-sex marriages complicates how people in same-sex relationships answer the question and limits the ability to test whether respondents in same-sex relationships report their legal marital status. Understanding whether

respondents report their legal marital status is important for having accurate official marriage statistics and for understanding differences between cohabiting and legally married couples. A future study could sample marriage records for a survey to examine how same-sex and opposite-sex couples in legal marriage report their marital status on surveys.

In addition to the target population, other limitations of this study include not testing alternative orders of the response options (“opposite-sex” before “same-sex” options—Lofquist & Lewis 2014) and being limited to the marital status response options used in previous waves of NASIS. The response categories of the typical marital status question are limiting in that surveys may not typically use “Married, living apart” in marital status questions. This question also only measured current marital status and did not measure marital history (e.g., whether respondents are in a second marriage). Additionally, the option of “never married” may be problematic for same-sex couples. Marriage is not an option in Nebraska for same-sex couples, so “single” may be a more appropriate response category (Ridolfo, Perez, & Miller 2011).

Another limitation of this study is using reports of sexual orientation to identify misreports of same-sex relationship status. These analyses involved the assumption that respondents were more likely to report their sexual orientation accurately than their marital status in the inclusive treatment. Respondents, though, may also have difficulty answering sexual orientation questions (Durso & Gates 2013; Powell, et al. 2010). This study also only measured sexual orientation through self-identity and did not include additional items on behaviors and attractions to measure the full-scope of the sexual orientation construct (Durso & Gates 2013; Badgett & Goldberg 2009). The sexual

orientation measure, nonetheless, provides some way to quantify possible discordance when lacking other ways to measure the sex of a respondents' partner (e.g., a household roster, linking to Social Security data—Lofquist & Lewis 2014) and highlights the disconnect between these two questions.

Future research should test LGB-inclusive marital status question wording in different contexts (e.g., liberal vs. conservative states, and nationally). Additional research should also investigate other ways to ask LGB-inclusive marital status. These could include using a typical marital status question wording and then a skip pattern that asks respondents who report being married or cohabiting whether their partner is of the same-sex or opposite-sex. More quantitative and qualitative research is also necessary to understand the over count of same-sex couples resulting from reporting errors. Mixed methods designs that quantify the rate at which people in opposite-sex relationships select a same-sex marital status and then qualitatively (e.g., cognitive interviews—Willis 2005) examines why some people make mistakes would inform the future methodological work on measuring same-sex couples in surveys.

3.7 Conclusion

Finding that the LGB-inclusive question wording lead to an over count of same-sex couples and higher item nonresponse suggests that researchers should continue to test ways to obtain accurate reports of same-sex relationships in general population surveys. The “same-sex” and “opposite-sex” wording tested in this study did not lead more people in same-sex relationships to reveal their relationship status and led to a significant rate of response error from people who report their sexual orientation as heterosexual/straight. The inaccurate reports from people in opposite-sex relationships suggest a fruitful vein of

research into ways to measure the increasingly diverse family forms. Overall, identifying same-sex couples with a traditionally worded marital status question and a separate sexual orientation question worked better in this study and the cover design had no interaction effect regarding response rates, percent of LGB respondents, or the percent of respondents who reported being in a same-sex relationship.

What is encouraging from this study is that there was little evidence of a backlash from people who tend to be less tolerant of homosexuality, even in a fairly conservative state. With increasing support of same-sex marriage, including from among younger Republicans (Kiley 2014; Milbank 2014), future implementations of the LGB-inclusive question wording may observe even less of a backlash than observed in this study.

**CHAPTER 4: IS NEBRASKA AS CONSERVATIVE AS PEOPLE OFTEN
ASSUME IT IS?**

**EXAMINING THE RED STATE AND URBAN VS. RURAL FRAMES OF
PUBLIC OPINIONS ABOUT GAY RIGHTS ISSUES**

Social policies, laws, activism, campaigns, and elections related to the rights and protections of lesbian, gay, and bisexual (LGB) individuals and same-sex couples are growing in visibility and frequency from local to international levels (Brewer 2014; Becker 2014; Helfer & Voeten 2014; Stone 2012; van den Akker, van der Ploeg, & Scheepers 2012; Encarnación 2011; Saez 2011; US State Department 2011).

Internationally, Canada as well as some Western European and Latin American countries protect LGB rights, recognize same-sex marriages, and tend to have relatively high rates of acceptance of homosexuality (Fitzgerald, Winston, & Prestage 2014; Clements & Field 2014; van den Akker, van der Ploeg, & Scheepers 2012; Gerhards 2010). In other parts of the world, for example, Russia as well as many African and Muslim countries, acceptance of homosexuality is low and LGB issues tend to be contentious, leading to dangerous living conditions for their LGB populations (Panchapakesan, Li, & Ho 2014; McCarthy 2014a; Altman & Breyer 2014; Boyd 2013; Sadgrove, et al. 2012).

In the US, social stigma, prejudice, and discrimination continue for LGB people (Duncan & Hatzenbuehler 2014; Pew Research 2013a; Stotzer 2012; Parnell, Lease, & Green 2012; Ng, Schweitzer, & Lyons 2012; Herek 2011), but increasing visibility, advocacy, and acceptance of homosexuality has led to increasing LGB-inclusivity and expansion of LGB rights. LGB-inclusivity is more common in US culture, as illustrated by the inclusion of LGB characters, storylines, and themes in mainstream media and

inclusive advertising campaigns (Merevick 2014; Solomon 2014; Judkis 2014; *Huffington Post* 2014; Italie 2013; Sieczkowski 2012; Oakenfull & Greenlee 2005; Dow 2001). Politically, LGB issues are at the forefront of campaigns, elections, and judicial rulings, and large shifts in LGB rights have occurred (Lewis, Rogers, & Sherrill 2011; Maisel & Fingerhut 2011).

Same-sex marriage is the most notable example of shifts in LGB rights in the US. More and more states continue to extend marriage rights to same-sex couples, and the US Supreme Court and several District Courts have ruled limitations and bans on same-sex marriage unconstitutional (e.g., *Bishop v. Oklahoma* 2014; *United States v. Windsor* 2013; *Kitchen v. Herbert* 2013; *Griego v. Oliver* 2013). The range of policies and laws currently discussed in policymaking bodies, campaigns, organizations and businesses, and the media highlight the full scope of LGB issues. These topics include the rights to adopt children, visit a partner in the hospital, receive health insurance coverage and Social Security benefits for a partner, serve openly in the military, donate blood, be an openly gay Boy Scout leader or professional football player in the NFL, employment and housing discrimination, and hate crimes.

National surveys indicate that US public opinion about LGB issues is quickly changing, with increasing support of LGB rights, such as same-sex marriage (Kiley 2014; Silver 2013; Pew Research 2013a). Popular discourse regarding public opinion about social issues, such as LGB issues, has generally fallen under two (somewhat interrelated) frames: a red vs. blue states culture war (Pew Research 2014; Rasmussen 2006; Fiorina 2006; Adam 2003; Hunter 1991) and opinion differences between urban and rural citizens (Kazyak 2011; Salka & Burnett 2011; Eldridge, Mack, & Swank 2006; Snively,

et al. 2004). Scholarly debate exists, however, about the validity of these frames reflecting public opinion about social issues (cf. Levendusky & Pope 2011; Abramowitz & Saunder 2008; Fiorina, Abrams, & Pope 2008, 2006; Burnett & Salka 2009).

Questions remain, in particular, about whether these frames are adequate for understanding state-level public opinion. Nebraska is often characterized as a red state and has a population split between urban dwellers in the two largest cities (Omaha and Lincoln) and a more rural populace across the rest of the state. Nebraska, thus, is a good case for examining the extent to which these frames reflect public opinion about LGB issues. In this chapter, I use data from a general population mail survey of Nebraska residents to examine the extent to which the red state and urban vs. rural frames fit public opinion of Nebraskans. I report Nebraskans' attitudes about LGB issues, compare them to the national public opinion to gauge whether Nebraska is as conservative as people often assume it is, and examine differences between opinions of Nebraskans who live in Omaha and Lincoln and those who live in the rest of the state.

4.1 LGB Issues and Public Opinion

4.1.1 LGB Issues at the National Level

The current trend in the US is expanding rights for LGB individuals and growing acceptance of homosexuality and public support of LGB rights (Kiley 2014; Silver 2013; Pew Research 2013a). In the last decade, 33 states and the Washington, DC have legalized same-sex marriage (freedomtomarry.org), including voter backed laws in Maryland and Maine (Brumfield 2012). Other locations have granted civil unions and domestic partnership status to same-sex couples (freedomtomarry.org). Recently, several US District Court cases have declared state bans on same-sex marriage unconstitutional

(Disis 2014; e.g., *Bishop v. Oklahoma* 2014; *Kitchen v. Herbert* 2013; *Griego v. Oliver* 2013); and with the US Supreme Court in 2013 declaring the Defense of Marriage Act (DOMA) unconstitutional (*United States v. Windsor* 2013), the US federal government now recognizes same-sex marriages performed in states where they are legal and extends Social Security and other federal benefits to those married same-sex couples (freedomtomarry.org).

Expansion of LGB rights have occurred in other areas as well. In 2010, the US military ended its “Don't Ask, Don't Tell” (DADT) policy on gays and lesbians serving in the military. The repeal of DADT effectively allowed gay and lesbian service members to be open about their sexual orientation without fear of repercussion, such as dishonorable discharge, and led to other rights for LGB service members, such as wearing their military uniforms in gay pride parades (De Angelis, et al. 2013; Belkin, et al. 2012; Feuntes 2012). Additionally, same-sex couples have gained the right to adopt children in some locations (Davis 2013). Some states and local communities have enacted laws to protect LGB people from housing and job discrimination, as well (Friedman, et al. 2013; Pizer, et al. 2012), and numerous businesses, universities, school systems, and governments have begun providing health insurance benefits to same-sex couples (Human Rights Campaign).

These concrete policy actions all come with public support for same-sex marriage and acceptance of LGB individuals at an all-time high (McCarthy 2014b). In fact, Silver's (2013) analysis of eight public opinion polls shows that more Americans now support same-sex marriage than oppose it. The trend is increasing public support and

acceptance and expanding rights for LGB people (Kiley 2014; Pew Research 2013a, 2013b; Brewer & Wilcox 2005).

4.1.2 Red vs. Blue State Narrative

Despite increasing public support and acceptance, variation exists in public opinion of LGB issues (Pew Research 2013a, 2013b; Baunach 2012; Andersen & Fetner 2008; Olson et al. 2006; Lewis 2005; Herek 2002). One popular frame is the red vs. blue state culture war narrative (Pew Research 2014; Rasmussen 2006; Fiorina, Abrams, & Pope 2006; Adam 2003; Hunter 1991). This dichotomy characterizes states by whether they tend to support Republican presidential candidates (red states) or Democratic presidential candidates (blue states) and with which party a majority of a state's citizens identifies (Saad 2013). This framing presents a narrative of red states as anti-abortion, anti-homosexual, anti-evolution, and pro-gun, and blue states as the opposite. For LGB issues, the frame is plurality or majority public opinion in red states being unfavorable toward LGB rights, while public opinion in blue states is predominantly favorable toward LGB rights.

Scholarly debate exists, however, about the validity of the red vs. blue state dichotomy and the depths of the divide of public opinion about social issues (cf. Levendusky & Pope 2011; Abramowitz & Saunder 2008; Fiorina, Abrams, & Pope 2008, 2006). On the one hand, some scholars argue that a deep split between red and blue states exists because of an increasing average margin of victory at the state-level in presidential elections. That is, in red states, Republican candidates win in landslides, and Democrats win blue states by wide margins (Abramowitz & Saunders 2008). Some even argue that politically like-minded people are sorting themselves into homogenous communities at

the county level (Bishop 2004). Additionally, some research shows that people in red and blue states differ on key characteristics, with red state voters being more likely to be Protestant, born-again Christians, and attend religious services at least once a week than voters from blue states (Abramowitz & Saunders 2008). Specifically in terms of social issues, 2004 data showed that red state voters were more likely to own a gun, be pro-life, oppose same-sex marriage, and support the war in Iraq (Abramowitz & Saunders 2008). Many of the states with bans on gay marriage are also among the so-called red states (freedomtomarry.org).

On the other hand, other scholars argue that people use the wrong variables to define states as red and blue, and that states are not deeply divided among an ideological public at war over social and cultural issues (Levendusky & Pope 2011; Fiorina, Abrams, & Pope 2008, 2006). In debating of the validity of the red vs. blue state dichotomy, those who argue against it show that the frame stems from a polarized political class, news media framing, sorting of liberals and conservatives into two political parties, and ideologically polarized candidates (Fiorina, Abrams, & Pope 2006).

These scholars argue that the so-called culture war conflicts are primarily the concern of a few, unrepresentative people. The political class (i.e., advocacy/lobby groups, candidates, and political pundits) tend to hold strong, ideological views as well as certain, unrepresentative segments of Americans. For example, the very religious, religious lobby groups, LGB advocacy/lobby groups, and LGB people hold strong views about LGB issues, but overall, Americans do not split neatly into either camp, but rather fall somewhere in between. Fiorina and his colleagues (2006), for example, show that Americans are closely divided not deeply divided over social issues. The red and blue

state frames suggest that deep divisions exist among the public and between states. The frame suggests that the majority of a state's citizens conform to the narrative. For instance, in red states, majority opinion is anti-gay rights.

The news media, however, often employ the red vs. blue state frame and cherry-pick examples that support it, exaggerating the perception that Americans hold strong, ideological positions on social and cultural issues. Epitomizing this media framing are provocative headlines that provide the impression of a divided America:

“How Republicans and Democrats Ended Up Living Apart” (Greenblatt 2013),

“Red America's Anti-Gay Backlash” (Rauch 2014),

and even whimsically, *“Are Red States Going to the Dogs and Blue States to the Cats?”* (Dean 2014).

Fiorina and his colleagues (2006) argue that the perception of an increasingly polarized America additionally stems from the sorting of partisans. Americans who identify with a political party now are more likely to identify with the party that fits their political ideology than Americans in the past. Today, there are fewer liberal Republicans and fewer conservative Democrats—resulting largely from the political realignment of the American South. Fiorina, et al. (2006), however, note that the difference in attitudes between Republicans and Democrats is still relatively small. They show, for example, that the difference between Republicans and Democrats on more than 40 social and political issues only increased from 10% in 1987 to 14% in 2007.

Despite relatively small differences in positions of the electorate, political candidates *are* polarized, leading to the misperception of a polarized Americans.

Opponents of the red vs. blue narrative argue that relying on presidential vote to characterize state politics is flawed because it maximizes the effects of different candidates. Just because the candidates hold strong, ideological views does not mean the public do. For example, a presidential election that pits a moderate Republican from the Northeast against a moderate Democrat from the South would likely divide the states differently than a race that pits a conservative Republican from the South against a liberal Democrat from the Northeast. Furthermore, presidential voting can be inconsistent with state-level party identification and outcomes of other races (Abrams & Fiorina 2012). We must distinguish between people's opinions and their choices in candidates. For instance, just because Nebraska voters routinely elect Republican candidates does not mean that Nebraskans hold all of the same views as these politicians, specifically on social issues. Nebraska voters may cast their votes based on economic positions rather than the social issues or the Democrats may just have less attractive or poorly funded candidates than the Republicans (Herrnson 2012; Buttice & Stone 2012).

The framing of the US into a red vs. blue state culture war, however, may have drawbacks for understanding LGB issues. Using a blanket red-or-blue narrative based on presidential elections to represent a state's public opinion may be impractical because many LGB issues take place at the state and even local levels, including same-sex marriage laws, hate crime legislation, and protections from job and housing discrimination. The frame blankets states into having homogenous political cultures, which may be inaccurate (Salka & Burnett 2011) and inadequate for understanding the complexity of these issues.

The red vs. blue frame might have other significant ramifications. The red vs. blue state narrative may stereotype states into areas that reinforce majority opinions while minority opinions are oppressed, thus stifling political debate and bipartisan progress (Bishop 2004). Individuals may perceive certain locations, then, as more hospitable than others, which may result in them relocating to areas that they feel support their views and positions (Pew Research 2014; Bishop 2004, but cf. Gebeloff & Leonhardt 2014; Abrams & Fiorina 2012; Klinkner 2004).

Living in a state that is or perceived as opposite of one's ideology may also have meaningful impacts on an individual in other ways. For LGB people, living in state often labeled as "red" may create a false sense of discomfort and fear. Living in a conservative area may contribute to an increased sense of social stigma, which can adversely affect their thoughts, behaviors, and feelings (Herek 2011; Ragins, Singh, & Cornwell 2007; Deaux & Ethier 2007; Levin & van Laar 2006; Miller & Major 2000). In fact, research shows that living in areas with higher levels of (perceived) stigma increases mortality rates of sexual minorities (Hatzenbuehler, et al. 2014). Organizations that aim to support the LGB community may also suffer from "red state" perceptions in the form of fundraising struggles and community apathy (Drumheller & McQuay 2010).

4.1.3 Urban vs. Rural Split

In addition to the red vs. blue state narrative, another popular frame is a division on social issues between people who live in urban and rural areas (Swank, Fahs, & Frost 2013; Salka & Burnett 2011; Carter 2008; Carter & Borch 2005; Eldridge, Mack, & Swank 2006; Snively, et al. 2004; Wilson 1985; Fischer 1975). Wirth's (1938) theory of urbanism explains that urban residents are more tolerant of others, more receptive to

others, and less likely to see others as a threat because they live in environments that are more heterogeneous. Exposure to diversity leads to social interactions with people dissimilar to oneself, such as different racial, ethnic, and religious groups as well as sexual minorities. Urban people are more likely to confront new social and moral meanings and learn to respond to a variety of opinions. Conversely, rural environments tend to be more homogenous, leading to rural individuals likely interacting with people similar to themselves. Interaction within a homogenous community bolsters their values and they do not learn to reconcile diverse moral definitions, behaviors, and opinions. Many empirical studies find support for Wirth's theory, including observing more tolerance among urban people regarding race (Carter 2008; Tuch 1987), attitudes about gender roles (Carter & Borch 2005), and diverse/deviant political and social views (Wilson 1985).

Specifically looking at LGB issues, popular discourse generally posits that urban environments are more tolerant and welcoming for LGB people. Further, with LGB people more likely to live in urban areas (though there are some urban-rural differences between male and female same-sex couples—Gates 2013), urban people are more likely to interact with LGB people and develop tolerance toward sexual minorities. Some studies find support for the urban-rural frame of LGB issues. Research shows that levels of homophobia tend to be higher in rural settings (Eldridge, Mack, & Swank 2006; Snively, et al. 2004). In fact, rural LGBs tend to experience more discrimination than urban LGBs, such as employment discrimination, verbal threats, and property damage (Swank, Fahs, & Frost 2013; Swank *forthcoming*). Urban and rural LGBs even differ in

their opinions, with rural LGBs holding more negative attitudes of other sexual minorities and having less connection to the LGB community (Swank *forthcoming*).

Other research, however, questions the significance of urban-rural differences. Some scholars argue that the mass media disseminate urban ideas to rural contexts, thus minimizing differences, and find that urbanicity is a proxy measure of other significant variables such as education, race, age, religion, and political views (Abrahamson & Carter 1986). Indeed, Pew Research (2014) shows that people who describe themselves as liberal are more likely to live in urban areas and those who describe themselves as conservative are more likely to live in rural areas.

Studies also question the extent to which living in an urban or rural area predicts opinions of LGB issues and election outcomes. In a study of same-sex marriage ban elections, Salka and Burnett (2011) found that the urban-rural divide significantly predicted support for same-sex marriage in California's election but not in Florida's election. Studies also show that variables, such as religiosity and party identification, are better at explaining opinions about LGB issues than urban-rural differences (Burnett & Salka 2009).

Again, this urban-rural frame also may have significant ramifications. Similar to the red and blue state narrative, the frame of urban areas being welcoming and accepting of LGB people and rural areas tending to have higher levels of homophobia may hinder the efforts of rural LGB outreach services to recruit volunteers and raise funds (Drumheller & McQuay 2010). Moreover, the perceptions of differences between urban and rural areas can influence how rural LGB people develop their identity (Kazyak

2011), leading to substantial differences between urban and rural LGB people (Swank *forthcoming*).

This frame also relates to the issue of declining rural population, particularly from young people migrating to urban areas (Cantrell 2014; Bergman 2013; Carr & Kafalas 2009). The urban-rural frame may perpetuate out-migration of younger people, who tend to have more liberal views, to urban areas as self-identified liberals are more likely to express a preference for living in urban areas while self-identified conservatives are more likely to express a preference for living in rural areas (Pew Research 2014). People may not be expressing a preference for a certain lifestyle, but may be choosing to live in areas that align with their political beliefs (Bishop 2004). Additionally, as LGB people tend to reside in urban areas (Pew Research 2013) and tend to see rural locations as less accepting, the likelihood of LGB people settling in rural areas, even if they prefer a rural life, may be diminished.

4.1.4 LGB issues in Nebraska

The case of Nebraska is a good one to examine the extent to which the red vs. blue state and urban-rural frames reflect state-level public opinion of LGB issues. People often characterize Nebraska as a conservative, red state (Saad 2013; Abramowitz & Saunders 2008). Nebraska voters supported a ban on same-sex marriage in 2000 (Rasmussen 2006; Adam 2003). Candidates for public office sometimes campaign against LGB issues, and Nebraska voters tend to vote for candidates who tout “traditional family values” and embrace rural imagery in their campaigns. Moreover, Nebraska reliably backs Republican candidates for President¹³ and the state’s entire congressional

¹³Nebraska, however, does split its Electoral College votes by congressional district, where the presidential vote winner of each congressional district gets that district’s electoral vote. In the 2008 election, President

delegation are Republicans who are opposed to expanding most LGB rights (e.g., did not support the repeal of DADT—New York Times 2010). Nebraska’s current Republican governor even asks potential appointees their stance on LGB issues, saying that “most Nebraskans want a conservative government” and that a majority believe marriage is between a man and a woman (Dejka 2014). Nebraska also elected as its next US Senator, Ben Sasse, who has said that, “It’s empirically obvious that kids are best raised in a world with one mother and one father.” His comments, though, contradict a consensus in academic studies that shows no differences between children with same-sex and opposite-sex parents (Manning, Fetto, & Lamidi 2014), and the policies of professional organizations, including the American Sociological Association, American Psychological Association, American Academy of Child and Adolescent Psychiatry, and the American Academy of Pediatrics, among others. Some Nebraskans and churches also display yard signs advocating for the protection of “religious liberty” and “traditional marriage,” both of which some people see as threatened by LGB rights.

The rhetoric of politicians, however, does not always match public opinions (Fiorina, Abrams, & Pope 2006) and other information tells a more nuanced story of Nebraskans’ positions on LGB rights: LGB rights are increasing in Nebraska, as in the rest of the US. The University of Nebraska (Reed 2012), 246 Nebraska school districts (Dejka 2013), and various hospitals (Glissmann 2013), businesses, and city and county governments (Funk 2013) have extended insurance benefits to same-sex couples. The state’s two largest cities have also enacted ordinances that protect LGB people from discrimination in employment and housing (Hicks 2013; Reuters 2012), and Nebraska

Obama won the vote in Nebraska’s second congressional district (predominantly the Omaha metro area) and received one electoral vote from Nebraska. The 2008 election was the first time Nebraska split its electoral votes.

residents and elected officials continue to advocate for LGB rights in the Nebraska Legislature, Nebraska Supreme Court, and elsewhere (*Associated Press* 2014b; Stoddard 2014; Martin 2014). These extensions of LGB rights shows that Nebraska's population may not hold as conservative views as people might often assume they do. Instead of fitting the red state stereotype, Nebraskans may hold more moderate views of LGB issues similar to national public opinion. Specifically, I hypothesize that Nebraskans' public opinion about LGB issues will mirror national public opinion.

Nebraska also contains a significant urban-rural population split. With roughly 1.8 million people in 2013, Nebraska's population is predominantly in the state's two largest cities, located just 55 miles apart in eastern Nebraska: Omaha with a metropolitan population of 870,000 and Lincoln with a population of about 270,000. The rest of the state's population spreads throughout rural areas, small towns, and a couple larger communities at or below 50,000 residents. Therefore, following the urban-rural frame of LGB issues, one would expect to see public opinion differences between people from urban and rural areas of Nebraska. I hypothesize that the residents in Omaha and Lincoln will hold more liberal opinions about LGB issues than the rest of the state, thus reflecting the urban-rural frame of public opinion of LGB issues. In fact, political coverage in Nebraska already employs this framing, with articles that report polls showing more support for Democratic candidates in Omaha and Lincoln and more support for Republican candidates in the rest of the state (Walton 2014). In terms of substantive LGB policies, differences emerge between urban and rural Nebraska. Both Omaha and Lincoln have city ordinances that protect LGB people from discrimination in employment and

housing (Hicks 2013; Reuters 2012), while other parts of the state have been less proactive with these types of ordinances.

So, do the red state and urban-rural frames reflect public opinions about LGB issues in Nebraska? In this chapter, I use data from a general population mail survey of Nebraska residents to examine whether Nebraska is as conservative as people often assume it is on LGB issues reflecting the red state narrative and I examine the extent to which urban and rural Nebraskans differ in opinions about LGB issues. I compare Nebraskans' opinions about LGB issues to national public opinion data from the 2012 American National Election Studies (ANES). I examine support for same-sex marriage, rights of gay and lesbian couples to adopt children, and protections for gays and lesbians from housing and job discrimination, and their general feeling towards gay men and lesbians. I also compare the opinions about these issues between respondents from Omaha and Lincoln and those from the rest of the state.

4.2 Data and Methods

4.2.1 2013 Nebraska Annual Social Indicators Survey (NASIS)

Data for this study come from the 2013 Nebraska Annual Social Indicators Survey (NASIS). NASIS is an annual, omnibus survey of Nebraska residents. The 2013 NASIS was a mail survey sent to a randomly selected address-based sample of n=6,000 Nebraska households provided by Survey Sampling International (SSI). NASIS asks a core set of questions annually and Nebraska state agencies and University of Nebraska faculty may submit additional questions. NASIS 2013 asked a variety of questions including about roads, wind energy, recycling, invasive plant species, political and social issues, and demographics (NASIS 2012-2013 Methodology Report—Bureau of

Sociological Research 2013). NASIS 2013 included four mailings (initial survey packet, postcard reminder, and two replacement survey packets) during its data collection period from June 24, 2013 to August 16, 2014. A total of n=1,608 respondents completed NASIS for a response rate of 27.3% (AAPOR RR1—AAPOR Standard Definitions 2009).

LGB Issue Questions. Six questions in NASIS 2013 asked about LGB issues: general feelings toward gay men and lesbians, same-sex marriage, the Defense of Marriage Act (DOMA), adoption by gay and lesbian couples, and protections for gay men and lesbians from housing and job discrimination. The wording of all NASIS 2013 questions and methodological experiments embedded in NASIS appears in Appendix A.

4.2.2 Analysis Plan

I examine the extent to which the red state and urban-rural frames reflect public opinion of Nebraskans about six LGB issues by testing whether Nebraskans differ from national public opinion on LGB issues and testing if urban and rural Nebraskans differ in their opinions. First, I report Nebraskans' general feeling toward gay men and lesbians, same-sex marriage, adoption of children by gay and lesbian couples, and protections for gay men and lesbians from housing and job discrimination. I then compare these opinions to national public opinion from the 2012 ANES using chi-square and t-tests to test the hypothesis that Nebraska does not fit the red state narrative of low levels of support for LGB rights, but instead mirrors national public opinion. The question wording for the six LGB issue questions in NASIS 2013 was consistent with the question wording with the 2012 ANES. One exception was the response scale for the question on the general feeling toward LGB people. The ANES asked this question as a feeling thermometer question

with 100 degrees representing the warmest feelings and 0 degrees representing the coolest feelings toward gay men and lesbians. I recoded the ANES data in 20-degree intervals to represent the five-point favorability scale in NASIS.

My final analyses examine whether urban and rural Nebraskans significantly differ in their opinions about LGB issues. I identify urban Nebraskans as respondents whose zip codes are within the Omaha metropolitan area (the cities of Omaha, Elkhorn, Bellevue, La Vista, and Papillion) and city of Lincoln. Among the NASIS respondents, 47.55% live in Omaha and Lincoln and 52.45% live in the rest of Nebraska. Using chi-square and t-tests, I test for significant differences between Nebraskans who live in Omaha and Lincoln and those who live in the more rural remainder of the state. In additional regression models, I further examine differences between urban and rural Nebraskans' opinions while controlling for respondent demographic, political, and religious characteristics.

Imputation and Weighting. For all of my analyses, I used imputed and weighted NASIS and ANES data with the corresponding *svy* and *ice* commands in Stata12. Table 4.1 displays the item missing rates for the primary variables in this study. To correct for item nonresponse in NASIS, I used multiple imputation with five imputed data sets. I also weighted the NASIS data to account for unit nonresponse. Because NASIS 2013 used simple random sampling with equal probabilities of selection (ESPEM), I only applied nonresponse adjustments. The NASIS data were weighted on sex, age, and region of Nebraska using 2010 Census data. The weighted and imputed demographic, political, and religious characteristics of NASIS respondents appear in Appendix I.

For the ANES data, I used multiple imputation with five imputed data sets. I also weighted the data with using the supplied weights recommended from the ANES documentation (see: <http://www.electionstudies.org/>).

Table 4.1: Item Missing Rates for LGB Issue, Political, and Religious Questions, NASIS 2013.

	Percent Missing
Feeling Toward Gays and Lesbians	2.80
Same-Sex Marriage	3.36
DOMA	5.72
Adoption Rights	4.98
Housing Discrimination Protections	4.66
Job Discrimination Protections	4.66
Know LGB Person	2.43
Political Party	5.29
Political Ideology	7.21
Religious Affiliation	5.41
Born-Again Christian	7.21
Religious Attendance	4.10
Religion's Influence	3.11

4.3 Results

4.3.1 Nebraskans' Opinions about LGB Issues

Table 4.2 displays the opinions of Nebraskans about LGB issues.

Table 4.2: Opinions of LGB issues, NASIS and ANES (weighted percentages).

	NASIS			Urban vs. Rural X ² /T-Value	ANES	NASIS vs. ANES X ² /T-Value
	Total	Omaha and Lincoln	Rest of State			
General Feeling toward Gay Men and Lesbians						
Very Favorable	12.15	17.18	7.59		15.72	
Favorable	22.62	28.77	17.04		18.95	
Neither Favorable nor Unfavorable	40.54	40.45	40.61	16.01**	32.69	10.39*
Unfavorable	12.46	7.14	17.29		8.91	
Very Unfavorable	12.23	6.45	17.47		23.73	
Same-Sex Marriage						
Favor	40.42	50.32	31.45		41.00	
Favor Civil Unions Only	19.54	23.05	16.37	13.77***	33.48	14.06***
Oppose	40.03	26.63	52.18		25.52	
DOMA						
Favor	50.86	42.29	58.63		—	—
Oppose	49.14	57.71	41.37	-5.14***	—	—
Adoption by Gay and Lesbian Couples						
Favor	55.62	67.35	44.98	7.37***	62.94	-4.20***
Oppose	44.38	32.65	55.02		37.06	
Protection from Housing Discrimination						
Favor	71.63	79.47	64.52		—	—
Oppose	28.37	20.53	35.48	5.44***	—	—
Protection from Job Discrimination						
Favor	74.29	80.53	68.62		74.61	-0.19
Oppose	25.71	19.47	31.38	4.42***	25.39	

Note. NASIS, n=1,608; ANES, n=5,914; Distributions of LGB issues for NASIS were similar for the imputed and unimputed data leading to similar findings, see Appendix J. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001.

General Feelings toward Gays and Lesbians. As seen in table 4.2, a plurality of NASIS respondents reported neutral feelings toward gay men and lesbians, and the percent of respondents who reported favorable feelings toward gay men and lesbians was slightly larger than those who reported unfavorable feelings (34.77% vs. 24.69%). This finding is unexpected of the red state narrative that suggests plurality opinion would be

unfavorable toward gay men and lesbians. However, contrary to the hypothesis that Nebraskans would mirror the US population, when compared to the nation, Nebraskans were more moderate (i.e., less extreme) in their general feelings toward gay men and lesbians and significantly differed from the ANES benchmark ($X^2(4)=10.39$, $p=0.03$). A smaller proportion of Nebraskans reported feeling very favorable (12.15% vs. 15.72%; $t=-2.83$, $p=0.01$) or very unfavorable (12.23% vs. 23.73%; $t=-9.48$, $p=0.001$) toward gay men and lesbians, but a larger proportion of Nebraskans reported favorable (22.62% vs. 18.95%; $t=2.52$, $p=0.01$), unfavorable (12.46% vs. 8.91%; $t=2.72$, $p=0.01$), and neutral (40.54% vs. 32.69%; $t=4.52$, $p<0.001$) feelings toward gay men and lesbians than Americans on the whole from the ANES.

Urban and rural Nebraskans also significantly differed in their general feelings toward gay men and lesbians. Consistent with the hypothesis, Nebraskans from Omaha and Lincoln reported significantly more favorable feelings toward gay men and lesbians than Nebraskans from the rest of the state ($X^2(4)=16.01$, $p=0.003$). For example, 17.18% of respondents from Omaha and Lincoln reported feeling very favorable compared to only 7.59% of those in the rest of the state. As seen in table 4.3, the difference between urban and rural Nebraskans held in an OLS regression model that held other respondent characteristics constant. It also held in an ordinal regression (reported in Appendix J).

In addition to this main finding, the model also showed that males, older people, political conservatives, Republicans, Independents, and respondents who identified as born-again Christians were significantly more likely to report unfavorable feelings toward gay men and lesbians. Those with higher education levels, who know an LGB person, who attend religious services once a year or less, and LGB people are

significantly more likely to report favorable feelings toward gay men and lesbians.

Having a religious affiliation versus not having one as well as the influence of religion on one's daily life did not significantly predict feelings toward gay men and lesbians.

Table 4.3: OLS regression model predicting feelings toward gay men and lesbians^a by respondent characteristics and controlling for experimental treatments.^b

	Coefficient	SE
Live in Omaha/Lincoln (Yes=1, No=0)	0.32***	0.06
Sex (Male=1, Female=0)	-0.28***	0.06
Age (Mean Centered)	-0.01***	0.01
Education		
HS or < (Reference)	–	–
Some College	0.16 ⁺	0.09
BA+	0.41***	0.09
Political Party		
Democrat (Reference)	–	–
Republican	-0.26**	0.09
Independent/Other	-0.22**	0.8
Political Ideology		
Very Liberal	0.62***	0.15
Liberal	0.22*	0.10
Moderate (Reference)	–	–
Conservative	-0.30***	0.08
Very Conservative	-0.65***	0.12
Religion (Yes=1, None=0)	0.09	0.11
Born-Again Christian (Yes=1, No=0)	-0.37***	0.08
Religious Attendance		
Several Times a Week	–	–
Once a Week	-0.09	0.12
Once a Month to Nearly Every Week	0.08	0.13
About Once a Year to Several Times a Year	0.10	0.13
Less than Once a Year	0.35*	0.17
Never	0.27 ⁺	0.16
Religious Influence		
Very Much	–	–
Quite a Bit	0.02	0.08
Some	-0.08	0.10
A Little	-0.11	0.15
None/Not Religious	-0.11	0.16
Know LGB Person (Yes=1, No=0)	0.35***	0.06
Sexual Orientation (LGB=1, Non-LGB=0)	0.48**	0.17
Experimental Treatments		
Treatment 1 (Reference)	–	–
Treatment 2	0.07	0.10
Treatment 3	0.03	0.10
Treatment 4	0.07	0.09
Treatment 5	-0.01	0.10
Treatment 6	0.05	0.11
Intercept	3.38***	0.24

Note. ^aOutcome variable coded as 5="Very Favorable" 4="Favorable," 3="Neither Favorable nor Unfavorable," 2="Unfavorable," 1="Very Unfavorable." ^bThe experimental treatments are discussed in chapters 2 and 3. n=1,608. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001.

Same-Sex Marriage and the Defense of Marriage Act (DOMA). Nebraskans' views about same-sex marriage split, with 40.42% favoring same-sex marriage, 40.03% opposing it, and 19.54% of favoring civil unions only (Table 4.2). Taken together, a majority of Nebraskans (~60%) support some sort of legal recognition for gay and lesbian couples' relationships, which is consistent with past polling in the state by the *Omaha World-Herald* (O'Connor 2013; Grace 2012). Nebraskans also are roughly split on their opinions of DOMA, with 50.86% favoring the law and 49.14% opposing it (Table 4.2). Nebraskans' attitudes about same-sex marriage suggest the red state narrative does not accurately reflect public opinion, with about 60% of Nebraskans favoring legal recognition of same-sex union (although not marriage necessarily). Unlike the red state stereotype, conservative views about same-sex marriage are not predominant; rather public opinion seems to be closely divided on the issue.

Nebraskans' views on same-sex marriage significantly differed from national public opinion from the ANES ($X^2(2)=14.06$, $p<0.001$). The proportion of Nebraskans who favor same-sex marriage did not significantly differ from the proportion from the ANES data ($t=-0.35$, $p=0.752$), with roughly 40% favoring same-sex marriages (table 4.2); however, a significantly smaller proportion of Nebraskans favor civil unions compared to the ANES data (19.54% vs. 33.49%; $t=-9.45$, $p<0.001$). Additionally, a larger proportion of Nebraskans oppose same-sex marriages than the ANES data (40.03% vs. 25.47%; $t=8.56$, $p<0.001$). The 2012 ANES did not ask questions about support for DOMA.

Urban and rural Nebraskans also significantly differed in their views on same-sex marriage in expected ways ($X^2(2)=13.77$, $p=0.001$; Table 4.2): 50.32% of those in Omaha

and Lincoln favor same-sex marriage while only 31.45% in the rest of the state do ($t=-6.04$, $p<0.001$). Opposition to same-sex marriage was significantly higher in rural Nebraska (52.18% vs. 26.63%; $t=8.86$, $p<0.001$). This finding held in a multinomial regression model controlling for other respondent characteristics. As hypothesized, those who live in Omaha or Lincoln were significantly more likely to favor same-sex marriages and civil unions (Table 4.4).

The multinomial regression model (Table 4.4) also showed that males, older people, Republicans, Independents, political conservatives, born-again Christians, those who attend church at least once a week were significantly less likely to favor same-sex marriages. Those with higher education levels, political liberals, and those who know an LGB person were more likely to favor same-sex marriages. Additionally, respondents who said that their religion had quite a bit or some influence on their lives were more likely to favor same-sex marriage than those who reported that their religion had the highest level of influence on their lives (i.e., “very much”). Those with a bachelor’s degree or higher, who know an LGB person, and those who say their religion has quite a bit of influence on their life were more likely to favor civil unions only than oppose same-sex marriage. Those who identified as very conservative were significantly less likely to favor civil unions compared to opposing same-sex marriage.

Respondents from Omaha and Lincoln also opposed DOMA at significantly higher levels than rural Nebraska residents (57.71% vs. 41.37%; $t=-5.14$, $p<0.001$). However, contrary to the hypothesis, the effect was not significant in a logistic regression model predicting support for DOMA while controlling for respondent characteristics (Table 4.5). Similar to the other LGB issues, the model showed that older people,

Republicans, those who identified as very conservative, those with a religious affiliation, and born-again Christians were significantly more likely to favor DOMA. Only liberals and LGB respondents were significantly more likely to oppose DOMA.

Table 4.4: Multinomial regression model predicting views of same-sex marriage by respondent characteristics and controlling for experimental treatments in NASIS.

	<u>Favor Marriage^a</u>		<u>Favor Civil Unions Only^a</u>	
	Coefficient	Standard Error	Coefficient	Standard Error
Live in Omaha/Lincoln (Yes=1, No=0)	0.66***	0.20	0.84***	0.18
Sex (Male=1, Female=0)	-0.65**	0.22	-0.28	0.20
Age (Mean Centered)	-0.04***	0.01	-0.01	0.01
Education				
HS or < (Reference)	—	—	—	—
Some College	0.47	0.30	0.31	0.29
BA+	0.81*	0.31	0.82**	0.30
Political Party				
Democrat (Reference)	—	—	—	—
Republican	-1.00**	0.32	-0.52 ⁺	0.27
Independent/Other	-0.62*	0.28	-0.44 ⁺	0.26
Political Ideology				
Very Liberal	1.41*	0.58	0.17	0.67
Liberal	0.84*	0.33	-0.20	0.39
Moderate (Reference)	—	—	—	—
Conservative	-1.14***	0.32	-0.07	0.22
Very Conservative	-1.93***	0.56	-0.92*	0.37
Religion (Yes=1, None=0)	-0.40	0.42	-0.34	0.48
Born-Again Christian (Yes=1, No=0)	-1.23***	0.28	-0.34	0.22
Religious Attendance				
Several Times a Week (Reference)	—	—	—	—
Once a Week	-1.12**	0.43	0.09	0.42
Once a Month to Nearly Every Week	-0.02	0.48	0.74 ⁺	0.44
About Once a Year to Several Times a Year	0.03	0.46	0.72	0.46
Less than Once a Year	0.53	0.55	0.92	0.56
Never	0.44	0.55	0.95 ⁺	0.56
Religious Influence				
Very Much (Reference)	—	—	—	—
Quite a Bit	0.53*	0.26	0.63*	0.25
Some	0.76*	0.35	0.43	0.30
A Little	0.80 ⁺	0.47	0.39	0.44
None/Not Religious	0.86	0.55	-0.02	0.57
Know LGB Person (Yes=1, No=0)	1.43***	0.21	0.78***	0.20
Sexual Orientation (LGB=1, Non-LGB=0)	0.23	0.73	-0.88	0.91
Experimental Treatments				
Treatment 1 (Reference)	—	—	—	—
Treatment 2	0.09	0.36	0.34	0.31
Treatment 3	0.30	0.34	0.21	0.31
Treatment 4	0.19	0.35	0.57*	0.29
Treatment 5	-0.06	0.35	0.06	0.29
Treatment 6	0.65 ⁺	0.34	0.14	0.33
Intercept	-0.36	0.64	-1.73*	0.71

Note. ^a"Oppose" is the base outcome. n=1,608. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001.

Table 4.5: Logistic regression model predicting favorability of DOMA by respondent characteristics and controlling for experimental treatments.^a

	Coefficient	Standard Error
Live in Omaha/Lincoln (Yes=1, No=0)	-0.24 ⁺	0.17
Sex (Male=1, Female=0)	0.32 ⁺	0.16
Age (Mean Centered)	0.02***	0.01
Education		
HS or < (Reference)	—	—
Some College	0.02	0.27
BA+	-0.18	0.23
Political Party		
Democrat (Reference)	—	—
Republican	0.86***	0.24
Independent/Other	0.55	0.22
Political Ideology		
Very Liberal	-1.47	0.65
Liberal	-0.26*	0.26
Moderate (Reference)	—	—
Conservative	1.09	0.20
Very Conservative	1.52***	0.34
Religion (Yes=1, None=0)	0.32***	0.37
Born-Again Christian (Yes=1, No=0)	0.48*	0.21
Religious Attendance		
Several Times a Week	—	—
Once a Week	0.39	0.37
Once a Month to Nearly Every Week	-0.13	0.41
About Once a Year to Several Times a Year	-0.22	0.41
Less than Once a Year	-0.37	0.49
Never	-0.31	0.47
Religious Influence		
Very Much	—	—
Quite a Bit	-0.04	0.22
Some	-0.08	0.26
A Little	-0.33	0.37
None/Not Religious	-0.77	0.41
Know LGB Person (Yes=1, No=0)	-0.68 ⁺	0.17
Sexual Orientation (LGB=1, Non-LGB=0)	-1.26***	0.70
Experimental Treatments		
Treatment 1 (Reference)	—	—
Treatment 2	0.01	0.27
Treatment 3	-0.26	0.28
Treatment 4	0.02	0.26
Treatment 5	-0.04	0.28
Treatment 6	-0.24	0.26
Intercept	-0.53	0.55

Note. ^aOutcome variable coded as 1="Favor" 0="Oppose." n=1,608. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001.

As an annual state-wide social survey, NASIS has previously asked some questions about LGB issues which allows for examining change over time in Nebraskans' opinions. A note of caution about the comparability of past waves of NASIS to NASIS 2013, however, is necessary regarding inconsistent question wording. NASIS 2004 asked whether respondents agreed or disagreed that same-sex couples should have the right to form legal unions like marriage. The response options were strongly agree, agree, neither agree nor disagree, disagree, and strongly disagree. I collapsed the positive and negative responses to mirror the favor and oppose responses of NASIS 2013. I use the neutral response category as the comparison for favoring civil unions only from NASIS 2013. Though not an ideal comparison, the data do show an important trend of decreasing opposition to same-sex marriage in Nebraska. More respondents to NASIS 2004 reported opposing same-sex marriage than in 2013 (58.70% vs. 40.42%; Figure 4.1). Fewer respondents in NASIS 2004 also reported favoring same-sex marriages or neutral feelings on the issue. These data show that the red state narrative reflected Nebraskans' public opinion about same-sex marriage in 2004, but no longer is the proper frame. Consistent with the public opinion nationally (McCarthy 2014b), Nebraskans' opposition to same-sex marriage declined over the past nine years.

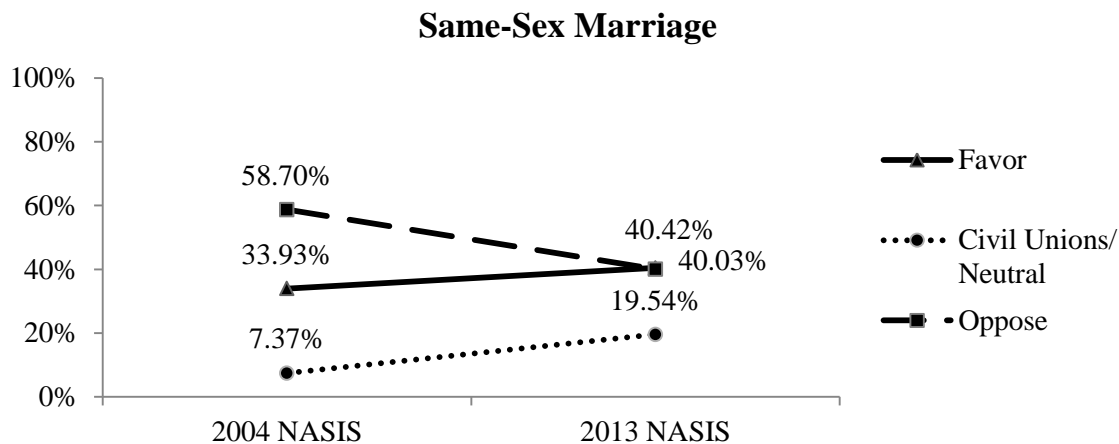


Figure 4.1: Nebraskans' Opinions about Same-Sex Marriage from NASIS 2004 and NASIS 2013.

Adoption Rights. The red state narrative also does not apply to Nebraskans' opinions about the right of gay and lesbian couples to adopt children. A slight majority of Nebraskans favored allowing gay and lesbian couples to adopt children, with 55.62% favoring it and 44.38% opposing it (Table 4.2). Contrary to the hypothesis, opposition to adoption rights, however, is significantly higher in Nebraska than at the national level (44.38% vs. 36.98%; $t=4.13$, $p<0.001$).

Similar to the previous issues, as expected, support for adoption rights was significantly higher among respondents from Omaha and Lincoln (67.35% vs. 44.98%; $t=7.37$, $p<0.001$) and the relationship held in a logistic regression model ($\beta=0.55$, $p<0.001$; Table 4.6).

Additionally, the same subgroups were significantly more or less likely to favor the rights of gay and lesbian couples to adopt children (Table 4.6). Males, older people, Republicans, Independents, political conservatives, and born-again Christians, were less likely to favor adoption rights for gay and lesbian couples. Conversely, those with some college, a bachelor's degree or higher, political liberals, those who know an LGB person, were more likely to favor adoption rights.

Table 4.6: Logistic regression model predicting support for allowing gay and lesbian couples to adopt children by respondent characteristics and controlling for experimental treatments.^a

	Coefficient	Standard Error
Live in Omaha/Lincoln (Yes=1, No=0)	0.55***	0.17
Sex (Male=1, Female=0)	-0.40*	0.18
Age (Mean Centered)	-0.03***	0.01
Education		
HS or < (Reference)	—	—
Some College	0.53*	0.2294
BA+	0.93***	0.2350
Political Party		
Democrat (Reference)	—	—
Republican	-0.50*	0.22
Independent/Other	-0.59**	0.22
Political Ideology		
Very Liberal	1.51***	0.46
Liberal	0.70*	0.28
Moderate (Reference)	—	—
Conservative	-0.66***	0.20
Very Conservative	-1.67***	0.36
Religion (Yes=1, None=0)	0.10	0.35
Born-Again Christian (Yes=1, No=0)	-0.84***	0.22
Religious Attendance		
Several Times a Week	—	—
Once a Week	-0.21	0.31
Once a Month to Nearly Every Week	0.05	0.35
About Once a Year to Several Times a Year	0.44	0.34
Less than Once a Year	0.57	0.44
Never	0.74 ⁺	0.45
Religious Influence		
Very Much	—	—
Quite a Bit	0.09	0.23
Some	0.70**	0.27
A Little	0.47	0.38
None/Not Religious	0.38	0.47
Know LGB Person (Yes=1, No=0)	0.93***	0.17
Sexual Orientation (LGB=1, Non-LGB=0)	0.28	0.54
Experimental Treatments		
Treatment 1 (Reference)	—	—
Treatment 2	0.19	0.29
Treatment 3	0.30	0.26
Treatment 4	0.36	0.28
Treatment 5	-0.20	0.26
Treatment 6	0.31	0.25
Intercept	-0.85	0.54

Note. ^aOutcome variable coded as 1="Favor" 0="Oppose." n=1,608. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001.

NASIS 2004 asked Nebraskans their views on the rights of gay and lesbians to be foster parents, which allows for a rough comparison of similar constructs over time. NASIS 2004 asked this question with a five-point agree-neutral-disagree response list. I coded strongly agree and agree responses as “favor” and strongly disagree and disagree response as “oppose.” Here we see a shift in opinions, with a majority of Nebraskans opposing adoption/foster parent rights in 2004 (54.78%), but a similar majority now favor these rights for gay and lesbian couples (55.62%; Figure 4.2). Nine years ago the red state narrative fit Nebraskans’ attitudes of the right for gay and lesbian couples to adopt (foster) children, but today the narrative no longer holds.

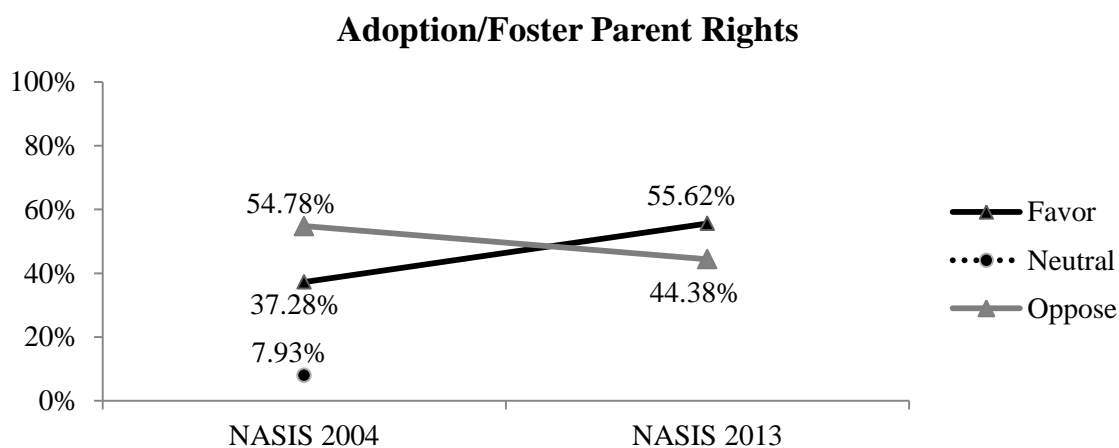


Figure 4.2: Nebraskans’ Opinions about the Right of Gay and Lesbian Couples to Adopt Children from NASIS 2004 and NASIS 2013.

Protection from Housing and Job Discrimination. The most favorability among Nebraskans for LGB rights occurs regarding protections for gay men and lesbians from housing and job discrimination. Almost three-fourths of respondents favor these protections (71.63% favor protections from housing discrimination for LGB people and 74.29% favor protections from job discrimination for LGB people; Table 4.2), opposite of what one would expect of a red state. Nebraskans’ opinions of protections for LGB

from job discrimination did not significantly differ from national public opinion, with roughly 74% of Nebraskans and 75% of Americans favoring these policies ($t=-0.82$, $p=0.413$). The 2012 ANES did not ask opinions about protections for gay men and lesbians from housing discrimination.

Support for these protections was about 10-15 percentage points higher among people in Omaha and Lincoln than people from the rest of Nebraska ($p<0.001$). Among respondents from Omaha and Lincoln, 79.47% favor housing protections and 80.53% favor job protections. Among respondents from the rest of the state, 64.52% favor housing protections and 68.62% favor job protections. Logistic regression models examining the urban-rural split show mixed evidence. Respondents from Omaha and Lincoln were significantly more likely to favor protections from housing discrimination ($\beta=0.35$, $p<0.05$), but the effect was not significant in the model predicting support for job protections (Table 4.7).

Similar characteristics were associated with being significantly more or less likely to favor protections from housing and job discrimination for LGB people (Table 4.7). Males, Republicans, people who say they are very conservative, and born-again Christians were significantly less likely to favor protections from housing discrimination. Respondents with some college or more than a bachelor's degree, who said they are very liberal, those who attend religious services less than once a week to never, and who know an LGB person were significantly more likely to favor protections from housing discrimination. In terms of protections from job discrimination for LGB people, males, Republicans, and those who said they are very conservative were significantly less likely to favor these protections. On the other hand, those with some college or a bachelor's

degree or higher, who never attend religious services, and who know an LGB person were significantly more likely to favor protections for LGB people from job discrimination.

Table 4.7: Logistic regression models predicting favorability of protections for gay men and lesbians from housing and job discrimination.^a

	<u>Housing Discrimination</u>		<u>Job Discrimination</u>	
	Coefficient	Standard Error	Coefficient	Standard Error
Live in Omaha/Lincoln (Yes=1, No=0)	0.35*	0.16	0.27	0.16
Sex (Male=1, Female=0)	-0.58***	0.16	-0.60***	0.16
Age (Mean Centered)	-0.01 ⁺	0.01	-0.01	0.01
Education				
HS or < (Reference)	—	—	—	—
Some College	0.61**	0.22	0.64**	0.23
BA+	0.84***	0.21	0.71**	0.23
Political Party				
Democrat (Reference)	—	—	—	—
Republican	-0.49*	0.2254	-0.60*	0.24
Independent/Other	-0.23	0.22	-0.45 ⁺	0.23
Political Ideology				
Very Liberal	1.23*	0.55	0.97 ⁺	0.57
Liberal	0.14	0.29	0.32	0.30
Moderate (Reference)	—	—	—	—
Conservative	-0.19	0.20	-0.20	0.21
Very Conservative	-0.71*	0.30	-0.98***	0.29
Religion (Yes=1, None=0)	0.12	0.38	-0.21	0.40
Born-Again Christian (Yes=1, No=0)	-0.48**	0.17	-0.35 ⁺	0.18
Religious Attendance				
Several Times a Week	—	—	—	—
Once a Week	0.27	0.32	0.26	0.34
Once a Month to Nearly Every Week	0.73*	0.35	0.57	0.37
About Once a Year to Several Times a Year	0.95**	0.36	0.73 ⁺	0.39
Less than Once a Year	1.04*	0.43	0.51	0.45
Never	1.50***	0.46	1.04*	0.47
Religious Influence				
Very Much	—	—	—	—
Quite a Bit	0.03	0.21	0.10	0.22
Some	-0.02	0.25	0.02	0.26
A Little	0.13	0.40	0.58	0.42
None/Not Religious	-0.05	0.44	0.10	0.47
Know LGB Person (Yes=1, No=0)	0.67***	0.17	0.66***	0.18
Sexual Orientation (LGB=1, Non-LGB=0)	-0.20	0.52	-0.24	0.55
Experimental Treatments				
Treatment 1 (Reference)	—	—	—	—
Treatment 2	0.27	0.28	0.30	0.28
Treatment 3	0.63*	0.25	0.43 ⁺	0.26
Treatment 4	0.30	0.25	0.40	0.27
Treatment 5	0.49 ⁺	0.26	0.14	0.26
Treatment 6	0.25	0.25	0.0912	0.25
Intercept	-0.40	0.56	0.46	0.58

Note. ^aCoded as 1="Favor" 0="Oppose." n=1,608. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001.

Opinions of Nebraskans on these two LGB issues were also collected via NASIS 2004 and NASIS 2005 (Figures 4.3, 4.4). Again, the 2004 and 2005 NASIS question wording differed from the 2013 wording. The questions in 2004 and 2005 asked:

Please tell me if you strongly agree, agree, disagree, or strongly disagree with the following statements:

A property owner should be allowed to rent or sell a property based on a potential renter or buyer's sexual orientation.

It's okay for an employer to higher or not hire an applicant based on the applicant's sexual orientation.

I coded strongly agree and agree responses as the equivalent of “oppose” in NASIS 2013 and I coded the strongly disagree and disagree responses as the equivalent of “favor.”

Despite the question wording differences, the data show a relatively stable trend in a majority of Nebraskans favoring protections for LGB people from housing and job discrimination. The percent of Nebraskans who favor these protections were roughly identical in NASIS 2004 and NASIS 2013. Slightly more Nebraskans (about 5%) favored these protections according in NASIS 2005. The primary takeaway, however, is that over 70% of Nebraskans have continued to support these types of protections during the last decade with very little change in support. Over the past nine years, the red state narrative has never reflected public opinion about Nebraskans views on protections for gay men and lesbians from housing and job discrimination.

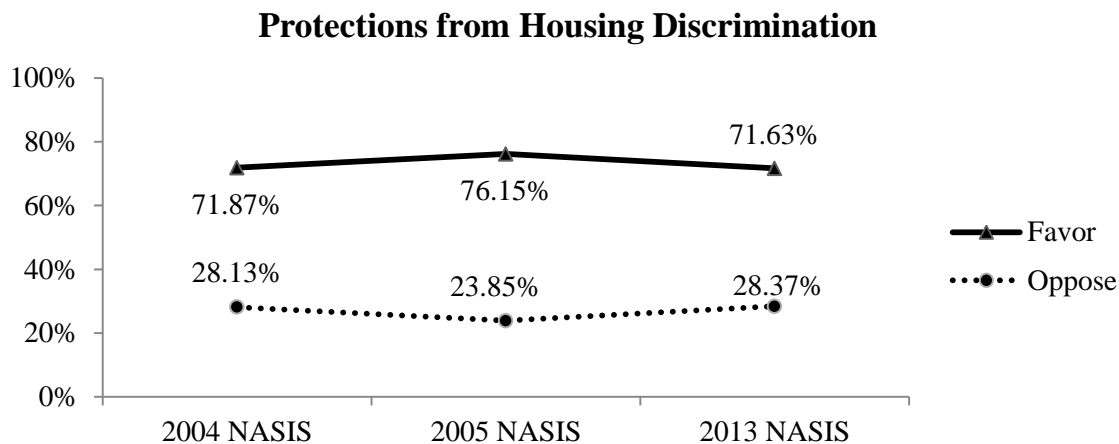


Figure 4.3: Nebraskans' Opinions about the Protections for Gay Men and Lesbians from Housing Discrimination, NASIS 2004, NASIS 2005, and NASIS 2013.

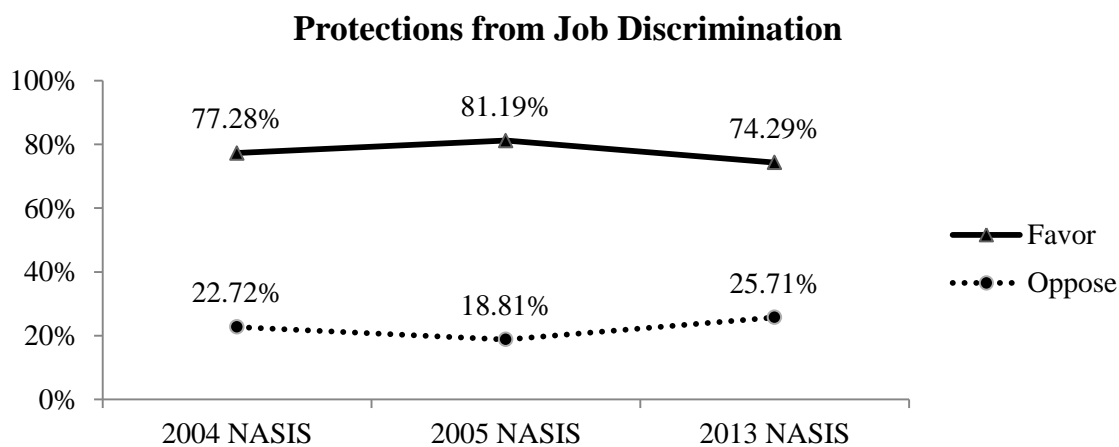


Figure 4.4: Nebraskans' Opinions about the Protections for Gay Men and Lesbians from Job Discrimination, NASIS 2004, NASIS 2005, and NASIS 2013.

4.4 Discussion

Nebraskans' opinions of LGB issues are mixed. Contrary to what the red state narrative would suggest, majorities of Nebraskans favor protections for LGB from housing and job discrimination as well as favoring the right for gay and lesbian couples to adopt children. Nebraskans are split evenly between favoring and opposing same-sex marriage, but combining those who favor same-sex marriage and those who favor civil unions shows about 60% of Nebraskans favor some sort of recognition of same-sex relationships. A plurality of respondents reported neutral feelings toward gay men and

lesbians, and the percent of NASIS respondents who reported favorable feelings toward gay men and lesbians was slightly larger than those who reported unfavorable feelings (34.77% vs. 24.69%).

Contrary to the hypothesis, though, Nebraskans' opinions about LGB issues did not mirror national public opinion from the 2012 ANES. The differences between Nebraskans' opinions and national public opinions, however, were more nuanced than the red state narrative would suggest. While Nebraskans report more conservative opinions regarding same-sex marriage and adoption rights, Nebraskans report more moderate feelings toward gay men and lesbians than the nation and report similar levels of support for protections from job discrimination.

Analyses of past waves of NASIS show that the red state narrative only reflected Nebraskans opinions about same-sex marriage and adoption rights nine years ago, but not today. In fact, analysis of national public opinion in 2004 showed that support for gay rights was more the exception than the norm without distinct differences between the so-called red and blue states (Fiorina, Abrams, & Pope 2006). It is evident that Nebraskans' opposition to same-sex marriage declined just as it has in the rest of the US (McCarthy 2014b; Pew Research 2013; Brewer & Wilcox 2005). Furthermore, 2004 and 2005 NASIS data show that the red state narrative never fit the issues of protections for gay men and lesbians from housing and job discrimination in Nebraska.

The urban-rural frame of public opinion of LGB issues did fit most issues in Nebraska. Across all six questions, respondents from Nebraska's urban centers of Omaha and Lincoln reported significantly more favorable views of LGB rights than respondents from the rest of the state. A majority of Nebraskans who live outside Omaha and Lincoln

oppose same-sex marriage and adoption rights; however, a majority of these respondents did support protections for gay men and lesbians from housing and job discrimination, but at significantly lower levels. Regression models further showed that variation in the opinions of LGB issues in Nebraskans are largely consistent with subgroup differences in other studies of opinions of LGB issues (Pew Research 2013b; Baunach 2012; Lewis 2011; Becker & Scheufele 2011; Schwartz 2010). Males, older people, Republicans, those who identify as very conservative, and born-again Christians were significantly less likely to favor gay rights. Younger people, those with higher education levels, and liberals were significantly more likely to favor the LGB issues examined in this study.

For those interested in understanding state-level public opinion, this study suggests that the red and blue state frame may oversimplify and not reflect the variation and closely divided nature of these issues. Moreover, the level of support observed in this study for LGB issues in Nebraska indicates that the trend of expanding rights in Nebraska will likely continue. However, the popularity of the red state frame may be difficult to overcome, as news media and politicians perpetuate this red state stereotype. When the public is unaware of the inaccuracy of this frame, it may be difficult for those who aim to advance gay rights to have their case heard (Drumheller & McQuay 2010). Additionally, the false sense of majority conservative views of Nebraskans may result in reluctance of LGB people to disclose their sexual orientation for fear of discrimination and other repercussions, which may have significant impacts on their mental and physical health (Hatzenbuehler, et al. 2014).

The findings about urban-rural differences show that political cleavages in Nebraska may occur between Omaha and Lincoln and the rest of the state on LGB and

likely other issues. As proportional representation in the state legislature continues to skew toward the growing urban areas surrounding Lincoln and Omaha, while the rest of the state declines in population, the interests and views of the urban areas may likely be represented in state-level policymaking. The division of public opinion may also widen between urban and rural areas of the state because younger people who hold more liberal views of LGB issues are more likely to settle in urban areas (Cantrell 2014; Carr & Kafalas 2009).

4.4.1 Limitations and Future Research

This research, however, is not without limitations. First, Nebraska contains few racial and ethnic minorities, which limits the ability to examine subgroup differences in opinions among those with these characteristics. A second limitation is that this study only evaluated the red vs. blue state and urban-rural frames of opinions of LGB issues in Nebraska. To be conclusive, a much larger study is necessary to examine whether these frames reflect public opinion in other locations. Another limitation is inconsistent question wording and data collection modes between waves of NASIS and between NASIS and ANES, which could lead to significant differences between responses when in fact true values do not differ for the construct. Although slight variations in question wording and data collection mode may seem irrelevant, question wording and mode can influence responses (de Leeuw 2008; Bradburn, Sudman, & Wansink 2004; Fowler 1995; Schuman & Presser 1981).

Future research is necessary to replicate this research, account for this study's limitations, and to keep up with the velocity of changes in public opinion of LGB issues. At the national level, support is growing with great rapidity, even among groups who

were historically less favorable of gay rights. Although Republicans nationally tend to be less accepting of homosexuality and less supportive of LGB rights, with only around 39% supporting same-sex marriage, recent research indicates that 61% of young Republicans (age 18-29) support same-sex marriage compared to 43% of Republicans aged 30–49, 30% of Republicans aged 50–64, and 22% of Republicans age 65 and older (Kiley 2014). Even Senator Orrin Hatch (R-UT), who does not support same-sex marriage, has said that, “Gay marriage is inevitable” (Associated Press 2014a). In comparison to Republicans, a majority of Democrats and Independents nationally support same-sex marriage at 69% and 54%, respectively. A majority of Democrats support same-sex marriage across all age groups (18-29: 77%, 30-49: 71%, 50-64: 66%, and 65+: 62%). Similar to Republicans, younger Independents are more supportive of same-sex marriage than older Independents (18-29: 69%, 30-49: 57%, 50-64: 47%, and 65+: 40%) (Kiley 2014). Research will be necessary to understand how increasing support for LGB rights among Republicans and those who previously were more opposed to LGB rights will play out in elections, change campaign rhetoric, and structure divisions of public opinion.

4.5 Conclusion

One primary takeaway from this research is that the red state frame does not accurately reflect public opinion of Nebraskans about LGB issues. Even though Nebraska often backs Republican presidential candidates and a majority of citizens identify as Republican (Saad 2013), using these variables as proxies for describing Nebraska as a conservative, red state regarding LGB issues is misleading. Nebraskans were less supportive of same-sex marriage and adoption rights than the nation, however, majorities of Nebraskans support adoption rights and either same-sex marriage or civil unions.

Nebraskans also mirrored the nation in the proportion who support protections from job discrimination. The second takeaway is that the frame of urban areas being more supportive of LGB rights than rural areas does fit the case of public opinion in Nebraska. Across the issues examined, majorities of Omaha and Lincoln residents support LGB rights, while support is significantly lower in the rest of the state. As we see in Nebraska, a majority now supports most gay rights; with changes among even those historically less tolerant of LGB rights (Kiley 2014), increasing support of gay rights among Nebraskans seems likely. For proponents of gay rights in Nebraska, this suggests fruitful areas for advancing their agenda. For those against the expansion of gay rights, the challenge will be combating the growing trend in support and coming to terms with their dwindling support.

CHAPTER 5: CONCLUSION

This dissertation had three objectives. The first was to examine the use of inclusive tailoring in surveys to address the challenges of surveying lesbian, gay, and bisexual (LGB) people and measure same-sex couple identity. The second was to examine the effects of LGB-inclusive tailoring of general population surveys on non-LGB individual's participation and reports to survey questions. I hypothesized that LGB-inclusivity in the form of cover images would draw on LGB group identity and communicate an accepting context that would encourage LGB participation and reduce the desire of some LGB people to conceal their identity. I also hypothesized the LGB-inclusivity in marital status question wording, with explicit "same-sex" and "opposite-sex" response options, would improve measurement of same-sex couple identity by addressing confusion and concealment issues that are problematic with traditionally-worded marital status questions. At the same time, however, I reasoned that the LGB-inclusivity would cause a backlash because it would turn off certain sample members who are less tolerant of homosexuality because they view homosexuality unfavorably, as offensive, or as biased. I also hypothesized that inclusive question wording would cause them confusion with reporting their marital status, leading to inaccurate reports and item nonresponse.

My third objective was to examine if the red state and urban-rural frames reflect public opinion of LGB issues in Nebraska. I compared Nebraskans' opinions about LGB issues to the nation to examine if Nebraska is as conservative about LGB issues as people often assume it is. I hypothesized that public opinion of Nebraskans regarding LGB issues would not fit the traditional red-state narrative based on recent expansion of LGB

rights in Nebraska and scholarly work that vitiates the validity of the red vs. blue state narrative. I also tested whether public opinion significantly differed between Nebraska residents from the state's urban centers of Omaha and Lincoln and the rest of the state. I hypothesized that the popular urban-rural frame would reflect public opinion in Nebraska with more support for LGB rights in the urban areas than the rural areas.

The previous chapters fulfilled these objectives by reporting the results of methodological experiments and substantive data from the 2013 Nebraska Annual Social Indicators Survey (NASIS). Overall, this dissertation produced mixed findings, both consistent with and contrary to my hypotheses. This research provides noteworthy implications for the study of LGB people, methods for studying hard-to-survey populations, the design of mail surveys, as well as understanding public opinion about LGB issues.

5.1 Summary of Findings and Implications

5.1.1 LGB-Inclusive Cover Image Design

The LGB-inclusive cover design led to significantly more LGB respondents without a significant backlash. The inclusive cover design did not affect response rates and did not lead to a significantly different sample in regards to respondent demographic, political, and religious characteristics. Moreover, the LGB-inclusive cover design obtained an unweighted sample similar to the other two cover designs in the experiment; all three similarly differed from demographic benchmarks from the 2012 American Community Survey (ACS).

There were mixed results, however, showing that the inclusive cover image design influenced reports to some attitudinal questions about LGB issues (visual context

effects). While the response distributions of questions about same-sex marriage, the Defense of Marriage Act (DOMA), adoption by gay and lesbian couples, and protections for LGB people from housing and job discrimination did not significantly differ among the three cover designs, regression models that predicted reports to these questions by the cover design while controlling for respondent characteristics showed some weak evidence of visual context effects. Compared to the default cover image design, the inclusive cover image design led to significantly increased favorability of same-sex marriage. Additional analyses found that the visual context effects varied by political affiliation. The inclusive cover design influenced reports to questions about DOMA and same-sex marriage among Democrat and Independent respondents whereas the cover designs did not significantly affect reports to question about LGB issues among Republican respondents.

The most surprising finding from the cover design experiment was that the default treatment with images of opposite-sex couple families and individuals displaying themselves in traditionally gendered ways led to a significantly lower response rate than the treatment without cover images. Respondents' political ideology also significantly differed between the default and no cover image treatments, with the default obtaining more liberal respondents and fewer very liberal respondents than the no cover image design. These findings suggest that of the three cover image designs, the cover design that most survey researchers would choose based on recommended design guidelines (i.e., the default design) actually was the most problematic in this experiment in terms of response rates and influencing the types of people who responded to the survey.

5.1.2 LGB-Inclusive Marital Status Question Wording

Unlike the inclusive cover image design, the inclusive marital status question wording did not address the challenges of surveying LGB people. The inclusive question wording with “same-sex” and “opposite-sex” response options did not address the confusion and concealment challenges of measuring the marital status of same-sex couples compared to a typical question treatment that featured traditional marital status question wording. The initial apparent increase in the percent of respondents who reported being in same-sex relationships occurred because around 4% of respondents who identified as heterosexual/straight selected one of the “same-sex” response options. After correcting for this small discordant rate, the percent of respondents who reported being in a same-sex relationship did not significantly differ between the two question wordings. What is noteworthy regarding the percent of same-sex couples is that among the total NASIS sample and among only the traditionally worded question, the percent of Nebraskans who reported being in a same-sex relationship was significantly higher than the Census estimate of 0.6% of Nebraskans (estimate from Gates & Cooke 2010).

Another drawback of the inclusive question wording was that it had a significantly higher item nonresponse rate than the traditionally worded marital status question and led to a marginal backlash. Although response rates did not significantly differ, the inclusive question wording garnered fewer Republican, born-again Christians, and those with a religious affiliation than the typical wording treatment. These differences approached statistical significance and may become a significant backlash in a survey with a larger sample.

Overall, the typical marital status question wording combined with a question measuring sexual orientation worked better to identify same-sex couples than the inclusive question wording because of the backlash, item nonresponse, and confusion problems that led to an overcount of same-sex couples.

In addition to the main effects, the interaction of the cover design and question wording were not significant. The combined effect of the LGB-inclusive tailoring of a survey's cover image design and marital status question wording did not significantly influence response rates, the percent of LGB respondents, or the percent of respondents who reported being in a same-sex relationship.

5.1.3 Implications for Researching LGB and Other Hard-to-Survey Populations

The findings from the methodological studies in this dissertation advances the methods for studying LGB individuals, methods for measuring same-sex couple identity, as well as the survey methodological literature regarding approaches for studying hard-to-survey populations and mail survey design.

The implications for surveying LGB individuals and measuring same-sex couple identity are mixed. On the encouraging side, researchers may find that they can use inclusive cover images to encourage LGB participation without a significant backlash from those who tend to be less tolerant of homosexuality. This dissertation also showed that researchers could incorporate LGB-inclusive question wording in surveys without a detrimental effect on response rates. On the discouraging side, while the weak evidence of visual context effects suggests caution, researchers may be more confident employing inclusive cover design to encourage LGB participation when the variables of interest are unrelated to people's opinions about LGB issues or views about homosexuality in other

ways. Researchers should also be cautious when considering using inclusive marital status question wording because of the potential for an over count of same-sex couples from inaccurate reports and higher item nonresponse. There is also the potential for a small backlash in the form of people who tend to be less tolerant of homosexuality not responding to surveys with inclusive marital status questions.

The findings from this dissertation also advance knowledge about the role of “inclusiveness” and tailoring in surveying hard-to-survey populations. Finding that a cover design with images of only opposite-sex couple families and individuals displaying themselves in traditionally gendered ways decreased participation of LGB people suggests that branding surveys in ways that exclude subgroups might perpetuate the sense of stigmatization and hinder efforts to garner participation from these subgroups who are often hard-to-survey. The takeaway from this research is that inclusivity in surveys may be important for addressing the participation challenges of hard-to-survey subgroups without a large detrimental effect on other non-subgroup member’s participation and measurement.

Observing no evidence of a backlash and the highest response rate from the no cover image design is also noteworthy for the design of mail surveys in general. My hypotheses that I would observe a backlash from those less tolerant of homosexuality echoed the general guidance for questionnaire designers to choose neutral cover image designs that appeal to as much of the target population as possible (Dillman, Smyth, & Christian 2014). This dissertation research showed that the seemingly more “controversial” LGB-inclusive cover design neither increased nor decreased response rates, suggesting that questionnaire designers might not need to worry about what may be

controversial cover designs from inclusive tailoring. In fact, embracing the controversy may work to encourage rather than discourage participation (e.g., Grembowski 1988). That the default cover design significantly lowered response rates compared to the no cover image treatment also suggests that questionnaire designers must design covers in ways that make them stand out and not look like marketing advertisements or consider no cover images at all.

5.1.4 Nebraskans' Opinions about LGB Issues

The third objective of this dissertation was to examine whether the red state and urban-rural frames reflect public opinion of Nebraskans regarding LGB issues. I found a Nebraskans were less supportive of LGB issues related to the definition of families than non-family related LGB issues, though a majority tended to support all the LGB rights. A slight majority of Nebraskans support the rights of the gay and lesbian couples to adopt children. Nebraskans are also roughly split on their views of same-sex marriage with around 40% favoring marriage, 40% opposing them, and the rest supporting civil unions only. Nebraskans also split evenly on views of DOMA. For other issues, larger majorities supported LGB rights, such as 75% supporting protections for gay men and lesbians from housing and job discrimination. These findings subvert the red state stereotype of Nebraska, suggesting that Nebraskans are not as conservative about LGB issues as people often assume they are. Instead, Nebraskans are closely divided on their opinions about LGB issues. Opinions of Nebraskans, however, did significantly differ from those of national public opinion data from the 2012 ANES. Nebraskans favor adoption rights for gay and lesbian couples at lower levels than the national data and oppose same-sex marriage at slightly higher levels. Nebraskans, though, did not differ from national public

opinion regarding the proportion who favor same-sex marriage and who favor protections for gay men and lesbians from job discrimination. Interestingly, Nebraskans reported more moderate levels of feelings toward gay men and lesbians. Fewer Nebraskans report either very favorable or very unfavorable feelings toward gay men and lesbians, with more Nebraskans choosing from the three middle categories.

Despite the red state frame not reflecting public opinion of Nebraskans about LGB issues, the urban-rural split did hold. Nebraskans in the state's two urban areas, Omaha and Lincoln, reported significantly higher levels of favorability of LGB rights than respondents from the rest of the state. In fact, majorities of respondents from Omaha and Lincoln supported all six gay rights issues, while majorities in the rest of the state only supported protections from housing and job discrimination (but at significantly lower levels). Majorities of Nebraskans who live outside Omaha and Lincoln oppose same-sex marriage, favor DOMA, and oppose adoption rights for gay and lesbian couples.

5.1.5 Implications of Public Opinion Findings

The public opinion analyses in chapter 4 have important implications for researchers, politicians, and advocates on both sides of LGB issues. For one, the analyses indicate that a simple red state frame does not reflect Nebraskans' opinions of LGB issues. The level of support for LGB issues also indicates that the trend of expanding LGB rights in Nebraska is likely to continue. These findings additionally show that political cleavages around LGB issues in Nebraska may occur between Omaha and Lincoln and the rest of the state.

Other important ramifications of the public opinion study involve the efforts of gay rights organizations and population migration between rural and urban areas. When the public is unaware of the inaccuracy of red state frame, it may be difficult for those who aim to advance gay rights to have their case heard because of difficulty raising funds and community apathy because of the perception of conservative public opinion (Drumheller & McQuay 2010). Additionally, the false sense of conservative views of Nebraskans may result in reluctance of LGB people to disclose their sexual orientation for fear of discrimination and other repercussions, which may have significant impacts on their mental and physical health (Hatzenbuehler, et al. 2014).

The division of public opinion may also widen between urban and rural areas of the state because younger people who hold more liberal views of LGB issues are more likely to settle in urban areas (Cantrell 2014; Carr & Kafalas 2009). To the extent that people are to choose areas that align with their political views (Bishop 2004), the urban and rural differences are likely to perpetuate the out migration of youth to rural areas as well as the out migration of LGB people.

5.2 Limitations and Future Research

The limitations of this research largely stem from the study's sample, features of the experimental designs, and the data collection mode and question wording used to compare Nebraskans' opinions of LGB issues to the nation. The sample for NASIS only includes adults, aged 19 or older living in the state of Nebraska, which limits the generalizability of the findings about the use of LGB-inclusive cover image designs and marital status question wording. Nebraska's population is also limiting in that it has few LGB people (Gates & Newport 2013). The sample for NASIS was also a simple random

sample. Because LGB people tend to live in more urban areas (though there are some urban-rural differences between male and female same-sex couples—Gates 2013), a stratified sample may have worked better to reach more LGB Nebraskans to increase the statistical power of examining the effects of the treatments on LGB participation and measurement. Testing the LGB-inclusive cover images and marital status question wording in other areas with a higher proportion of LGB people may yield different results on the use of these methods for increasing LGB participation and improving measurement.

Democrats and political liberals also tend to be a minority in Nebraska (Newport 2014; Saad 2013), limiting the ability to generalize findings to more politically liberal contexts. However, the advantage is that Nebraska is a good setting to examine backlash to LGB-tailoring. This research, nonetheless, requires replication in other locations to see if the findings hold among more liberal and more conservative populations. Findings may differ by context, for example, in other states, such as Utah, Mississippi, and Massachusetts, as well as locations with high-profile public debates, elections, or judicial rulings regarding LGB issues.

There are fewer racial and ethnic minorities living in Nebraska than other states, which limits the ability to examine the effects that the LGB-inclusive cover design and inclusive question wording has on participation and reports from them. Few racial and ethnic minorities also limits the ability to examine variation in Nebraskans opinions by race. Research, for example, shows that racial and ethnic minorities tend to have lower levels of support and tolerance of homosexuality compared to whites (Lewis 2004), which may influence their participation and reports to the inclusive tailoring.

Another limitation is that Nebraska does not legally recognize same-sex marriage. Having no formal recognition of same-sex marriages complicates how people in same-sex relationships answer the question and limits the ability to test whether respondents in same-sex relationships report their legal marital status. This research needs replication in areas where same-sex marriages are legal to use benchmark data (e.g., marriage licenses) to examine if the LGB-inclusive question wording helps to obtain accurate reports of same-sex relationships.

For the cover image experiment, printing the cover pages in only black and white due to budget limitations and having the questions about LGB issues appear toward the middle of the survey is a limitation. These features may be limiting in that the quality of images may influence the degree to which sample members take note of the cover (color may stand out more) and the degree to which images influence reports to question (high quality images are more likely to influence reports—Witte, et al. 2004). The proximity of the cover images to the question may also have attenuated visual context effects because respondents may no longer recall the context of the cover images by the time they answer related questions near the middle to end of a survey. Researchers should study how higher quality cover images (color) influence participation and reports. Additionally, studies should examine whether LGB-inclusive imagery influences reports when the questions are located nearer the cover of the survey or if visual context effects occur when images appear directly next to the questions about LGB issues.

For the question wording experiment, this study was limited to adapting the marital status question wording used in previous waves of NASIS, which differs slightly from the marital status question that is asked in most surveys. In particular, most survey

do not typically use “Married, living apart” in marital status questions. Additionally, the option of “never married” may be problematic for same-sex couples. Marriage is not an option in Nebraska for same-sex couples, so “single” may be a more appropriate response category (Ridolfo, Perez, & Miller 2011). I also did not test alternative orderings of the response options (“opposite-sex” before “same-sex” options—Lofquist & Lewis 2014), which may affect the rate of inaccurate reports and item nonresponse.

Another limitation of the marital status question wording experiment was using reports of sexual orientation to identify misreports of same-sex relationship status. These analyses involved the assumption that respondents were more likely to report their sexual orientation accurately than their marital status in the inclusive treatment. Respondents, though, may also have difficulty answering sexual orientation questions (Durso & Gates 2013; Powell, et al. 2010). This study also only measured sexual orientation through self-identity and did not include additional items on behaviors and attractions to measure the full-scope of the sexual orientation construct (Durso & Gates 2013; Badgett & Goldberg 2009). The sexual orientation measure, nonetheless, provides some way to quantify possible discordance when lacking other ways to measure the sex of a respondents’ partner (e.g., a household roster, linking to Social Security data—Lofquist & Lewis 2014) and highlights the disconnect between these two questions.

A main limitation of the public opinion analyses was that the data used to compare Nebraskans’ opinions to the nation and overtime included slightly different question wording and different data collection modes. These inconsistencies in question wording and mode could lead to significant differences in responses when the true values do not actually differ for the constructs of interest (Bradburn, Sudman, & Wansink 2004;

Fowler 1995; Schuman & Presser 1981). For example, responses to a question about support for same-sex marriage might differ between respondents to a telephone survey and a mail survey when in fact these people's true opinions do not differ.

Future research should test other means to encourage LGB participation in general population surveys. Researchers should conduct cognitive interviews to understand how different types of respondents view LGB-inclusive tailoring in surveys. Questionnaire designers should also examine LGB-inclusive tailoring of other aspects of a survey request (delivery envelope, reminder postcards, cover letter wording, and survey sponsorship) and using only LGB-imagery to determine whether there is a limit to how much inclusive tailoring they can incorporate without significantly affecting the participation and reports from non-LGB respondents in a general population survey.

Additional research should also investigate other ways to ask LGB-inclusive marital status. These could include using a typical marital status question wording and then a skip pattern that asks respondents who report being married or cohabiting whether their partner is of the same-sex or opposite-sex. More quantitative and qualitative research is also necessary to understand the over count of same-sex couples resulting from reporting errors. Mixed methods designs that quantify the rate at which people in opposite-sex relationships select a same-sex marital status and then qualitatively (e.g., cognitive interviews—Willis 2005) examines why some people make mistakes would inform the future methodological work on measuring same-sex couples in surveys.

Future methodological research regarding surveying LGB people should also include sampling challenges. Though not addressed in this dissertation, probability sampling of a large sample of LGB people is extremely difficult and costly. In particular,

the rarity and often stigmatized status of LGB people makes it difficult to identify them for sampling and recruitment for surveys (Dewaele, Caen, & Buysse 2014; Meyer & Wilson 2009). Consequently, research is generally limited to nonprobability samples or non-generalizable qualitative designs because methods to conduct high-quality probability sample surveys are lacking or the cost is prohibitive. However, evaluations show that nonprobability samples of LGB people tend to differ from the LGB population on key characteristics including race, affiliation with the LGB community, internalized homophobia, health indicators, and sometimes report different attitudes (Dewaele, Caen, & Buysse 2014; Meyer & Colten 1999; Bryant & Demian 1994). One method to address the challenge of sampling LGB people with probability means might be to use a two-phase screening survey with an address-based sample, similar to the aims of other screening designs for subpopulations (Brick, Williams, & Montaquila 2011; Han, et al. 2010).

Additionally, expansion of research about LGB-inclusive tailoring and inclusive tailoring of other groups would add to our knowledge about how much tailoring questionnaire designers can do to encourage participation of hard-to-survey subgroups without detrimentally affecting participation and measurement of others in general population surveys (e.g., dual language surveys). Future testing is required to examine how researchers can tailor cover images and other aspects of a survey to encourage participation of racial and ethnic groups, linguistic minorities, religious groups, households with kids, and other subgroups of interest.

As a dynamic social and political area with changes occurring often daily, the study of public opinion of LGB issues will need to continue. The speed of changes in the

area of LGB rights is evident in the amount of change that occurred with same-sex marriage laws during the writing of this dissertation. At the start of data collection, 13 states allowed same-sex marriages. A week or so into data collection, the US Supreme Court declared DOMA unconstitutional. Since then, various federal courts have declared 39 state bans on same-sex marriages unconstitutional, and currently same-sex marriage is legal in 33 states. Appeals to other courts, including the US Supreme Court have continued. In fact, a group of same-sex couples filed a lawsuit against Nebraska's same-sex marriage ban on the day that I defended my dissertation research (Knapp 2014).

Changes in public opinion have also occurred. Although Republicans tend to be less accepting of homosexuality and less supportive of LGB rights, with only around 39% supporting same-sex marriage, recent research suggests that 61% of young Republicans (age 18-29) support same-sex marriage compared to 43% of Republicans aged 30-49, 30% of Republicans aged 50-64, and 22% of Republicans age 65 and older (Kiley 2014). Research will be necessary to understand how changes in public opinion play out in elections, change campaign rhetoric, and structure future divisions of public opinion.

5.3 Conclusion

This dissertation advances the understanding of the effects of “inclusiveness” in questionnaire design and question wording on survey participation and reports by both underrepresented and majority sample members. This project also advances our understanding of methods to survey LGB people in particular. As LGB issues grow in importance from the local to national levels, data needs related to this community increase. Collecting survey data from LGB individuals and identifying them in general population surveys is paramount for creating prevalence estimates and understanding

their attitudes, behaviors, and experiences, which are increasingly important to policymakers and researchers in many disciplines including sociology, psychology, political science, law, marketing, and public health, among others.

This dissertation additionally advances the study of public opinion of LGB issues. The findings here suggest that the red vs. blue state framing of LGB issues does not accurately reflect public opinion. Nebraska, a state largely stereotyped as “red,” is not as conservative as people often assume it is. The analyses, however, do support the urban-rural division of public opinion of LGB issues. Taken together, the results from this study suggest that researchers cannot make sweeping generalizations of states as homogenous political cultures, but must recognize significant variations in opinions within states. The findings suggest that researchers must continue to study LGB issues as public opinion changes.

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Chapter 1

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APPENDICES

**APPENDIX A: NASIS QUESTIONNAIRES, RECRUITMENT MATERIALS,
AND RETURN TRACKING**

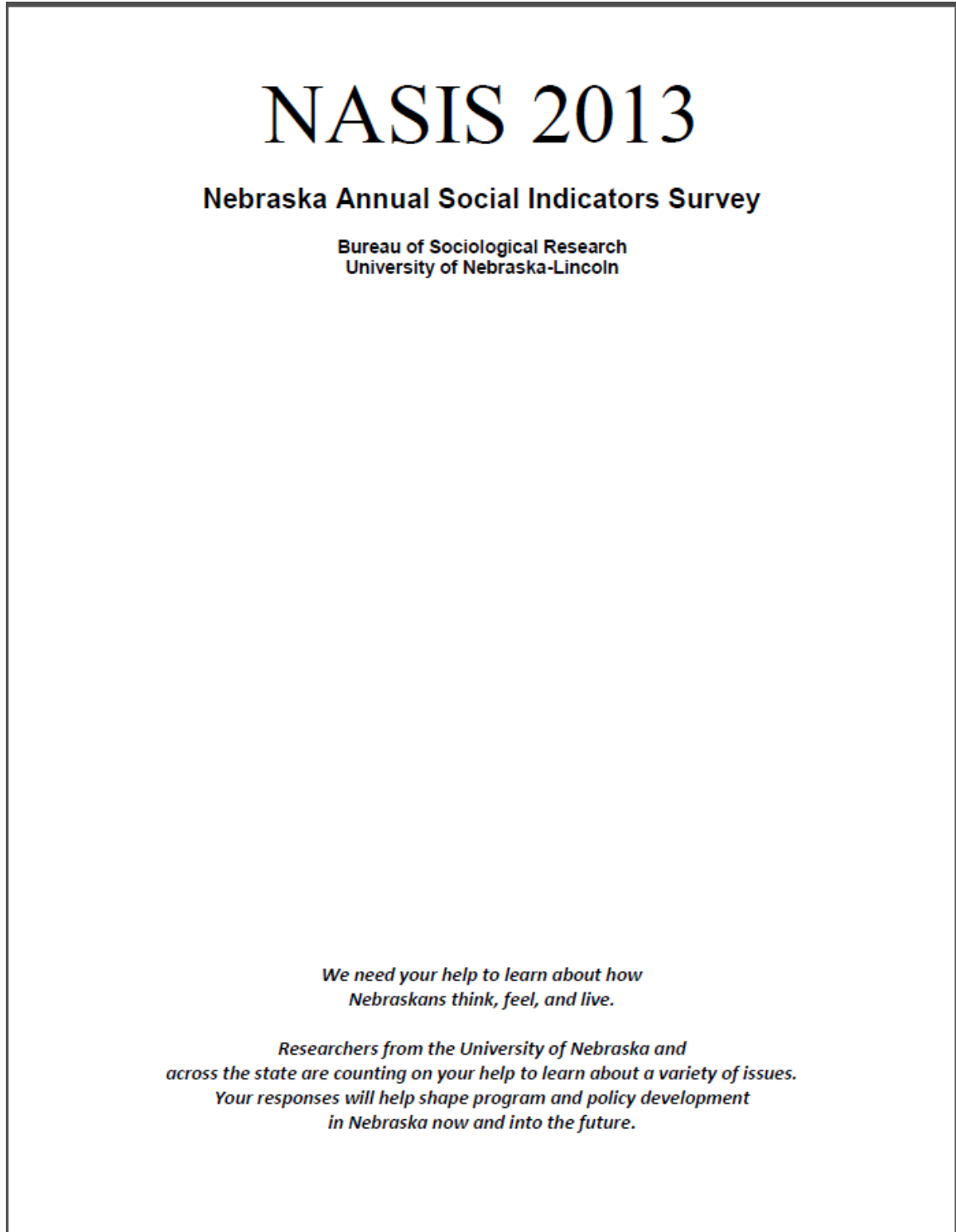


Figure A.2: Control Cover Design

NASIS 2013

Nebraska Annual Social Indicators Survey

Bureau of Sociological Research
University of Nebraska-Lincoln



*We need your help to learn about how
Nebraskans think, feel, and live.*

*Researchers from the University of Nebraska and
across the state are counting on your help to learn about a variety of issues.
Your responses will help shape program and policy development
in Nebraska now and into the future.*

Figure A.3: Default Cover Design

NASIS 2013

Nebraska Annual Social Indicators Survey

Bureau of Sociological Research
University of Nebraska-Lincoln



*We need your help to learn about how
Nebraskans think, feel, and live.*

*Researchers from the University of Nebraska and
across the state are counting on your help to learn about a variety of issues.
Your responses will help shape program and policy development
in Nebraska now and into the future.*

Figure A.4: LGB-Inclusive Cover Design

31. How favorable or unfavorable would you rate each of the following groups or individuals?

	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
a. Nebraska's Governor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. The Unicameral	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. The Republican Party	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. The Democratic Party	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. The "Tea Party"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. The U.S. President	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

32. How would you describe your feelings toward the following groups?

	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
a. Mormons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Muslims	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Atheists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. African Americans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Hispanics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Gay men and lesbians	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

33. Do you favor or oppose allowing gay and lesbian couples to legally marry?

Favor
 Favor Civil Unions only
 Oppose

34. The Defense of Marriage Act or DOMA prohibits the federal government from recognizing marriages between gay or lesbian couples and allows states to not recognize marriages between gay and lesbian couples performed in other states. Do you favor or oppose the Defense of Marriage Act (DOMA)?

Favor
 Oppose

35. Do you favor or oppose allowing gay and lesbian couples to adopt children?

Favor
 Oppose

36. Do you favor or oppose laws to protect gay men and lesbians from housing discrimination?

Favor
 Oppose

37. Do you favor or oppose laws to protect gay men and lesbians from job discrimination?

Favor
 Oppose

About Your Household

Please indicate if each of the following statements is true or false.

38. There are 25 or more books in your home right now.

True
 False

39. There is a variety of magazines and other reading materials in your home.

True
 False

40. What is your current marital or relationship status?

Same-sex married
 Opposite-sex married
 Same-sex married, living apart
 Opposite-sex married, living apart
 Not married, but living with a same-sex partner (cohabiting)
 Not married, but living with an opposite-sex partner (cohabiting)
 Never married
 Divorced
 Widowed
 Separated

→ Go to Question #42

Figure A.5: Acceptance Marital Status Question Wording

31. How favorable or unfavorable would you rate each of the following groups or individuals?

	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
a. Nebraska's Governor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. The Unicameral	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. The Republican Party	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. The Democratic Party	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. The "Tea Party"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. The U.S. President	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

32. How would you describe your feelings toward the following groups?

	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
a. Mormons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Muslims	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Atheists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. African Americans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Hispanics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Gay men and lesbians	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

33. Do you favor or oppose allowing gay and lesbian couples to legally marry?

Favor

Favor Civil Unions only

Oppose

34. The Defense of Marriage Act or DOMA prohibits the federal government from recognizing marriages between gay or lesbian couples and allows states to not recognize marriages between gay and lesbian couples performed in other states. Do you favor or oppose the Defense of Marriage Act (DOMA)?

Favor

Oppose

35. Do you favor or oppose allowing gay and lesbian couples to adopt children?

Favor

Oppose

36. Do you favor or oppose laws to protect gay men and lesbians from housing discrimination?

Favor

Oppose

37. Do you favor or oppose laws to protect gay men and lesbians from job discrimination?

Favor

Oppose

About Your Household

Please indicate if each of the following statements is true or false.

38. There are 25 or more books in your home right now.

True

False

39. There is a variety of magazines and other reading materials in your home.

True

False

40. What is your current marital or relationship status?

Married

Married, living apart

Not married, but living with a partner (cohabiting)

Never married

Divorced

Widowed

Separated

→ Go to Question #42

Figure A.6: Typical Marital Status Question Wording

Life in Nebraska		
1. Overall, how satisfied or dissatisfied are you with living in Nebraska?		
<input type="radio"/>	Very satisfied	
<input type="radio"/>	Somewhat satisfied	
<input type="radio"/>	Neutral	
<input type="radio"/>	Somewhat dissatisfied	
<input type="radio"/>	Very dissatisfied	
2. All in all, do you think things <u>in Nebraska</u> are generally headed in the right direction or the wrong direction?		
<input type="radio"/>	Right direction	
<input type="radio"/>	Wrong direction	
<input type="radio"/>	Unsure	
3. All in all, do you think things <u>in the country as a whole</u> are generally headed in the right direction or wrong direction?		
<input type="radio"/>	Right direction	
<input type="radio"/>	Wrong direction	
<input type="radio"/>	Unsure	
Nebraska Department of Roads (NDOR)		
These questions are about the roads of the state highway system, not the roads of your city or county.		
4. How much do you agree or disagree that NDOR does a good job of communicating information on proposed highway improvement projects?		
<input type="radio"/>	Strongly agree	
<input type="radio"/>	Agree	
<input type="radio"/>	Neither agree nor disagree	
<input type="radio"/>	Disagree	
<input type="radio"/>	Strongly disagree	
5. Please indicate whether or not you would prefer to receive information from NDOR about proposed highway improvement projects in each of the following ways.		
	Yes	No
a. News release	<input type="radio"/>	<input type="radio"/>
b. NDOR website	<input type="radio"/>	<input type="radio"/>
c. Project information letter	<input type="radio"/>	<input type="radio"/>
d. Public meeting	<input type="radio"/>	<input type="radio"/>
e. Highway message boards and signing	<input type="radio"/>	<input type="radio"/>
f. Social media; Facebook, Twitter, YouTube	<input type="radio"/>	<input type="radio"/>
Nebraska Department of Natural Resources		
8. How familiar are you with the Nebraska Department of Natural Resources (NDNR)?		
<input type="radio"/>	Very familiar	
<input type="radio"/>	Somewhat familiar	
<input type="radio"/>	Neither familiar or unfamiliar	
<input type="radio"/>	Somewhat unfamiliar	
<input type="radio"/>	Very unfamiliar	
9. How confident are you that the Nebraska Department of Natural Resources can responsibly manage Nebraska's water?		
<input type="radio"/>	Very confident	
<input type="radio"/>	Somewhat confident	
<input type="radio"/>	Slightly confident	
<input type="radio"/>	Not at all confident	
10. How urgent are water quantity issues in Nebraska?		
<input type="radio"/>	Not at all urgent	
<input type="radio"/>	Not very urgent	
<input type="radio"/>	Somewhat urgent	
<input type="radio"/>	Urgent	
<input type="radio"/>	Extremely urgent	
<input type="radio"/>	Don't know, unsure	

Figure A.7: NASIS Page 1

11. Have you experienced water shortages or water use restrictions in the last four years?

Yes

No

Don't know, unsure

12. Have you experienced problems with flooding from a stream or river in the last four years?

Yes, including damage or major harm to my property

Yes, but not including damage or major harm to my property

No

14. How much would you support or oppose regulations in Nebraska that require wind energy development and operation to minimize impacts to wildlife?

Strongly support

Support

Neither support nor oppose

Oppose

Strongly oppose

15. How much do you support or oppose wind energy development in remote, un-fragmented landscapes in Nebraska?

Strongly support

Support

Neither support nor oppose

Oppose

Strongly oppose

16. How much do you agree or disagree that developers should pay for impacts of wind energy developments to native Nebraska habitats?

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

Do not know

Wind Energy & Wildlife

13. How much do you agree or disagree that current wind energy regulations in Nebraska adequately protect wildlife?

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

Do not know

17. How concerned are you that each of the following types of wildlife listed below can be negatively impacted or killed as a result of wind energy development and/or operation?

	Very Concerned	Somewhat concerned	Slightly concerned	Not at all concerned	Don't know
a. Eagles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Hawks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Songbirds	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Cranes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Grouse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Ducks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Geese	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Bats	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Deer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Elk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Pronghorn Antelope	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l. Furbearers (animals trapped for their fur)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
m. Endangered Species	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure A.8: NASIS Page 2

Recycling					
18. How much do you agree or disagree with each of the following statements?					
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
a. Manufacturers should pay the cost of providing recycling services for the products they create.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. I would be willing to pay no more than 1% of retail price when purchasing a consumer product to ensure it is recycled.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Manufacturers of products containing lead, mercury and other hazardous chemicals have a responsibility to keep these chemicals out of the environment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. If it were free, I would bring leftover medications to a pharmacy for proper disposal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. If it were free, I would bring an old television or computer to a county recycling event or collection site instead of throwing it away.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. I would support laws obligating manufacturers to pay for recycling of products they create.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Local governments should not have to pay for the recycling of products that contain hazardous chemicals such as lead and mercury.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. The amount of money residents pay for waste collection should be based on the amount of waste they produce.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. How important is each of the following attributes in determining whether you would participate in a recycling program?					
	Extremely important	Somewhat important	Slightly important	Not at all important	Would not participate in recycling program
a. Convenient collection as part of normal garbage service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Convenient drop-off sites	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. No cost to participate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Prevents damage to soil, air, and water quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Program was paid for by manufacturers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Saves landfill space	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Can recycle a wide range of product types	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Protects fish and wildlife from toxic products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Prevents damage to human health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. The recycling program employs local residents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Conserves natural resources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l. Helps prevent climate change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure A.9: NASIS Page 3

20. Please indicate whether or not you have access to recycling services or take-back options in your community for each of the following items.

	Yes	No	Don't Know
a. Newspapers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Mail, magazines, catalogs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Aluminum cans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Tin cans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Fluorescent light bulbs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Plastic containers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Glass bottles and jars	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Used motor oil	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Rechargeable batteries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Alkaline batteries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Lead-acid batteries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l. Computers and TVs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
m. Tires	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
n. Home appliances	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
o. Paint	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
p. Pharmaceuticals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Plant Management in Nebraska

21. Do you own or rent property in Nebraska with outdoor land for which you are the caretaker (e.g., garden, lawn, recreational, or agricultural land)?

- Yes
 No → Go to question #30 [skip section]

22. How are unwanted plants managed or controlled in your yard or garden? (Check all that apply)

- I do not have unwanted plants in my yard
 I do not control any plants in my yard
 I mow unwanted plants
 I only remove unwanted plants from the garden
 I remove unwanted plants by cutting or digging them up with tools and/or machinery
 I spray unwanted plants with herbicides
 Other, specify:

23. Which of the following has been done to control unwanted plants on any of your property that is not your yard or garden? (Check all that apply)

- I do not own property beyond my yard (I only own a yard or garden)
 Prescribed fire or controlled burning (NOT burning brush piles)
 Herbicide application
 Mechanical removal (shovel, chainsaw, skid steer, bulldozer, or similar machines)
 Shredding or mowing
 Other, specify:
 No activities have been done on my property

24. Have you ever paid someone to manage or control unwanted plants on any of your property using any of the techniques in Questions 22 or 23?

- Yes
 No → Go to question #26

25. Which of the following is a reason you paid someone to manage or control unwanted plants on your property? (Check all that apply)

- I did not own the proper equipment
 I was not confident in my abilities to manage or control unwanted plants
 I did not know which plants to control
 I did not have time to do the work myself
 Other, specify:

26. Do you own or have access to equipment for controlling or removing unwanted plants on your property?

- I have all of the equipment I need
 I have some of the equipment I need
 I have none of the equipment I need
 I don't know what the proper equipment is for controlling or removing unwanted plants

Figure A.10: NASIS Page 4

<p>27. How confident are you in your abilities to manage or control unwanted plants on your property.</p> <p><input type="radio"/> Very confident</p> <p><input type="radio"/> Somewhat confident</p> <p><input type="radio"/> Slightly confident</p> <p><input type="radio"/> Not at all confident</p> <p><input type="radio"/> I have not thought about the kinds of plants on my property</p> <p>28. Which of the following statements best describes your overall attitude toward plants on your property?</p> <p><input type="radio"/> All of the plants on my property are there for a reason, and should not be controlled</p> <p><input type="radio"/> A few species need to be controlled, the rest are fine</p> <p><input type="radio"/> I have not thought at all about the kinds of plants on my property</p>	<p>29. Prescribed fire (controlled burning) is a management tool used to improve forage quality, reduce wildfire risk, and control unwanted plants in rangelands and woodlands in Nebraska. In general, how would you describe your attitude toward the use of prescribed fire to control unwanted plants?</p> <p><input type="radio"/> Very positive</p> <p><input type="radio"/> Positive</p> <p><input type="radio"/> Neutral</p> <p><input type="radio"/> Negative</p> <p><input type="radio"/> Very negative</p> <p><input type="radio"/> Don't know</p>
<p>Politics & Policies</p>	
<p>Next we are going to ask you questions about a number of political issues. We have heard lots of loud voices in the media on both sides of these issues, but we want to know what Nebraskans, like yourself, think about them.</p>	
<p>30. How much do you agree or disagree with each of the following statements?</p>	
	<p>Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree</p>
a. Nebraska should execute those convicted of murder	<p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></p>
b. The state should pay farmers not to irrigate to preserve water	<p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></p>
c. Congress should provide subsidies to protect the Ogallala aquifer	<p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></p>
d. Nebraska government should study the effects of climate change on the state	<p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></p>
e. Nebraska government should allow oil pipelines to cross the state	<p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></p>
f. The state should provide publically funded prenatal care for illegal immigrants	<p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></p>
g. Nebraska should support stem cell research that explores potential cures for disease	<p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></p>
h. Early term abortions should be legal	<p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></p>
i. Nebraska should eliminate state income taxes	<p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></p>
j. Agriculture subsidies are important to preserve farms in Nebraska	<p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></p>
k. Government should do more to prevent the flow of illegal immigrants into the state	<p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></p>

Figure A.11: NASIS Page 5

31. How favorable or unfavorable would you rate each of the following groups or individuals?

	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
a. Nebraska's Governor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. The Unicameral	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. The Republican Party	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. The Democratic Party	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. The "Tea Party"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. The U.S. President	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

32. How would you describe your feelings toward the following groups?

	Very favorable	Favorable	Neither favorable nor unfavorable	Unfavorable	Very unfavorable
a. Mormons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Muslims	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Atheists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. African Americans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Hispanics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Gay men and lesbians	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

33. Do you favor or oppose allowing gay and lesbian couples to legally marry?

Favor

Favor Civil Unions only

Oppose

34. The Defense of Marriage Act or DOMA prohibits the federal government from recognizing marriages between gay or lesbian couples and allows states to not recognize marriages between gay and lesbian couples performed in other states. Do you favor or oppose the Defense of Marriage Act (DOMA)?

Favor

Oppose

35. Do you favor or oppose allowing gay and lesbian couples to adopt children?

Favor

Oppose

36. Do you favor or oppose laws to protect gay men and lesbians from housing discrimination?

Favor

Oppose

37. Do you favor or oppose laws to protect gay men and lesbians from job discrimination?

Favor

Oppose

About Your Household

Please indicate if each of the following statements is true or false.

38. There are 25 or more books in your home right now.

True

False

39. There is a variety of magazines and other reading materials in your home.

True

False

40. What is your current marital or relationship status?

Married

Married, living apart

Not married, but living with a partner (cohabiting)

Never married

Divorced

Widowed

Separated

→ Go to Question #42

Figure A.12: NASIS Page 6

41. Does your spouse or partner typically work full-time, part-time, go to school, keep house, or something else? (Check all that apply)

Working full-time (35 hours or more)

Working part-time

Has a job, but not at work (due to illness, vacation, strike)

Unemployed, laid off, looking for work

Retired

In school

Keeping house

Disabled

Other, specify:

42. Are you still living in the same residence as you were 2 years ago?

Yes

No

43. Do you live on a farm, in open country but not on a farm, or in a town or city?

Farm

Open country, but not a farm

Town or city

44. Including yourself, how many adults age 19 and older live in your household?

Number of adults (age 19 and older)

45. How many children ages:
(Please write "0" if none.)

a. 5 and younger live in your household?

b. 6 to 12 live in your household?

c. 13 to 18 live in your household?

Home and Finances

46. Do you or some member of your household own your home outright, buying it, or renting?

Own outright

Buying (paying a mortgage)

Renting

Provided as part of job/wages

Other, specify:

47. Which of the following comes closest to the kind of housing unit you now live in?

Detached single family house

Mobile home

Townhouse/Condominium

Apartment/Duplex

Other, specify:

48. How many years have you lived in this Nebraska county? (Please enter "0" if less than 1 year.)

year(s)

49. Please indicate the category that describes your total family income in the last 12 months.

Under \$5,000

\$5,000 to \$9,999

\$10,000 to \$14,999

\$15,000 to \$19,999

\$20,000 to \$24,999

\$25,000 to \$29,999

\$30,000 to \$39,999

\$40,000 to \$49,999

\$50,000 to \$59,999

\$60,000 to \$74,999

\$75,000 to \$99,999

\$100,000 or more

50. During the past 12 months, how much difficulty have you had paying your bills?

A great deal of difficulty

Quite a bit of difficulty

Some difficulty

A little difficulty

No difficulty at all

51. Think again over the past 12 months. Generally, at the end of each month did you end up with...

More than enough money left

Some money left over

Just enough to make ends meet

Almost enough to make ends meet

Not enough to make ends meet

52. Overall, how satisfied are you with your current financial situation?

Very satisfied

Satisfied

Neither satisfied nor dissatisfied

Dissatisfied

Very dissatisfied

Figure A.13: NASIS Page 7

53. What about your financial prospects? Do you feel that you are better off this year than you were two years ago at this time, about the same, or worse off?

- Better
 Same
 Worse

The following statements concern your family's financial situation. For each statement, please indicate how much you agree or disagree.

54. My family has enough money to afford the kind of home we need.

- Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know

55. We have enough money to afford the kind of clothing we need.

- Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know

56. We have enough money to afford the kind of food we need.

- Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know

57. We have enough money to afford the kind of medical care we need.

- Strongly agree
 Agree
 Disagree
 Strongly disagree
 Don't know

Personal Feelings

58. Now we have some statements about how you might have felt during the past week. Below, please indicate the number of days in the past week, including today, that:

- a. You felt sad. days (0-7)
b. You felt hopeful about the future. days (0-7)
c. You felt you were as good as other people. days (0-7)
d. You felt bothered by things that usually don't bother you. days (0-7)
e. You felt lonely. days (0-7)
f. You had trouble keeping your mind on what you were doing. days (0-7)
g. You felt that everything you did was an effort. days (0-7)
h. You felt fearful. days (0-7)
i. You talked less than usual. days (0-7)
j. You felt depressed. days (0-7)
k. You did not feel like eating; your appetite was poor. days (0-7)
l. You felt that you could not shake off the blues even with the help of family or friends. days (0-7)
m. Your sleep was restless. days (0-7)
n. You could not get "going." days (0-7)

About Yourself

59. Are you:

- Male
 Female

60. Do you think of yourself as:

- Heterosexual/straight
 Homosexual/gay or lesbian
 Bisexual
 Something else
 Not sure

61. As far as you know, are any of your immediate family members, relatives, neighbors, co-workers, or close friends, gay, lesbian, or bisexual?

- Yes
 No

Figure A.14: NASIS Page 8

<p>62. Were you born in Nebraska, another state, or a foreign country?</p> <p><input type="radio"/> Nebraska</p> <p><input type="radio"/> Another state</p> <p><input type="radio"/> Foreign country</p> <p>63. Do you consider yourself to be Hispanic or Latino/a?</p> <p><input type="radio"/> Yes</p> <p><input type="radio"/> No</p> <p>64. What race or races do you consider yourself to be? <i>(Check all that apply)</i></p> <p><input type="checkbox"/> White (Caucasian)</p> <p><input type="checkbox"/> Black or African American</p> <p><input type="checkbox"/> Asian</p> <p><input type="checkbox"/> American Indian or Alaska Native</p> <p><input type="checkbox"/> Native Hawaiian or Other Pacific Islander</p> <p><input type="checkbox"/> Other, specify:</p> <p><input type="text"/></p> <p>65. With regard to the English language, how well do you understand it when it is spoken to you?</p> <p><input type="radio"/> Very well</p> <p><input type="radio"/> Well</p> <p><input type="radio"/> Not well</p> <p><input type="radio"/> Not at all</p> <p>66. With regard to the English language, how well do you read it?</p> <p><input type="radio"/> Very well</p> <p><input type="radio"/> Well</p> <p><input type="radio"/> Not well</p> <p><input type="radio"/> Not at all</p> <p>67. With regard to the English language, how well do you write it?</p> <p><input type="radio"/> Very well</p> <p><input type="radio"/> Well</p> <p><input type="radio"/> Not well</p> <p><input type="radio"/> Not at all</p>	<p>68. What is the highest degree you have attained?</p> <p><input type="radio"/> No diploma</p> <p><input type="radio"/> High School Diploma/GED</p> <p><input type="radio"/> Some college, but no degree</p> <p><input type="radio"/> Technical/Associate/Junior College (2 yr, LPN)</p> <p><input type="radio"/> Bachelor's Degree (4 yr, BA, BS, RN)</p> <p><input type="radio"/> Graduate Degree (Masters, PhD, Law, Medicine)</p> <p>69. Have you or has anyone in your household ever attended the University of Nebraska-Lincoln?</p> <p><input type="radio"/> Yes</p> <p><input type="radio"/> No</p> <p>70. Do you typically work full-time, part-time, go to school, keep house, or something else? <i>(Check all that apply)</i></p> <p><input type="checkbox"/> Working full-time (35 hours or more)</p> <p><input type="checkbox"/> Working part-time</p> <p><input type="checkbox"/> Has a job, but not at work (due to illness, vacation, strike)</p> <p><input type="checkbox"/> Unemployed, laid off, looking for work</p> <p><input type="checkbox"/> Retired</p> <p><input type="checkbox"/> In school</p> <p><input type="checkbox"/> Keeping house</p> <p><input type="checkbox"/> Disabled</p> <p><input type="checkbox"/> Other, specify:</p> <p><input type="text"/></p> <p>71. How satisfied or dissatisfied are you with your job?</p> <p><input type="radio"/> Very satisfied</p> <p><input type="radio"/> Satisfied</p> <p><input type="radio"/> Neither satisfied nor dissatisfied</p> <p><input type="radio"/> Dissatisfied</p> <p><input type="radio"/> Very dissatisfied</p> <p>72. During the average week, how many hours do you usually work? <i>(Please include hours from all jobs but do not include travel to and from work.)</i></p> <p><input type="text"/><input type="text"/> hours per week</p>
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Go to
#73

Figure A.15: NASIS Page 9

<p>73. In general, how would you describe your political views?</p> <p><input type="radio"/> Very liberal</p> <p><input type="radio"/> Liberal</p> <p><input type="radio"/> Middle-of-the-road</p> <p><input type="radio"/> Conservative</p> <p><input type="radio"/> Very conservative</p> <p><input type="radio"/> Other, specify: <input type="text"/></p> <p>74. In general, what do you consider yourself politically?</p> <p><input type="radio"/> Democrat</p> <p><input type="radio"/> Republican</p> <p><input type="radio"/> Independent</p> <p><input type="radio"/> Other, specify: <input type="text"/></p> <p>75. Who did you vote for in the 2012 Presidential Election?</p> <p><input type="radio"/> Obama</p> <p><input type="radio"/> Romney</p> <p><input type="radio"/> Other, specify: <input type="text"/></p> <p><input type="radio"/> Did not vote</p> <p>76. Do you consider yourself to be Protestant, Catholic, Jewish, Muslim, or something else?</p> <p><input type="radio"/> Protestant</p> <p><input type="radio"/> Catholic</p> <p><input type="radio"/> Jewish</p> <p><input type="radio"/> Muslim</p> <p><input type="radio"/> None (no religion)</p> <p><input type="radio"/> Other, specify: <input type="text"/></p> <p style="text-align: right;">Go to #78</p> <p>77. Within the Protestant faith, do you consider yourself to be:</p> <p><input type="radio"/> Evangelical</p> <p><input type="radio"/> Fundamentalist Protestant</p> <p><input type="radio"/> Mainline Protestant</p> <p><input type="radio"/> Liberal Protestant</p> <p><input type="radio"/> Other, specify: <input type="text"/></p> <p>78. Would you describe yourself as a born-again Christian?</p> <p><input type="radio"/> Yes</p> <p><input type="radio"/> No</p>	<p>79. How often do you attend religious services?</p> <p><input type="radio"/> Several times a week</p> <p><input type="radio"/> Once a week</p> <p><input type="radio"/> Nearly every week</p> <p><input type="radio"/> About once a month</p> <p><input type="radio"/> Several times a year</p> <p><input type="radio"/> About once a year</p> <p><input type="radio"/> Less than once a year</p> <p><input type="radio"/> Never</p> <p>80. In general, how much do your religious or spiritual beliefs influence your daily life?</p> <p><input type="radio"/> Very much</p> <p><input type="radio"/> Quite a bit</p> <p><input type="radio"/> Some</p> <p><input type="radio"/> A little</p> <p><input type="radio"/> None</p> <p><input type="radio"/> Doesn't apply, not religious or spiritual</p> <p>81. In what year were you born?</p> <p><input type="text" value="1"/><input type="text" value="9"/><input type="text"/><input type="text"/></p> <p>82. Would you say that your overall health and well-being is excellent, good, fair or poor?</p> <p><input type="radio"/> Excellent</p> <p><input type="radio"/> Good</p> <p><input type="radio"/> Fair</p> <p><input type="radio"/> Poor</p> <p>83. Do you smoke cigarettes?</p> <p><input type="radio"/> Yes</p> <p><input type="radio"/> No</p> <p>84. In the past year, have you been the victim of any crime?</p> <p><input type="radio"/> Yes</p> <p><input type="radio"/> No</p> <p>85. What is your current zip code?</p> <p><input type="text"/><input type="text"/><input type="text"/><input type="text"/><input type="text"/><input type="text"/></p>
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Figure A.16: NASIS Page 10

Please use the space below to provide any comments or feedback.

Thank you!

That completes our questions. We greatly appreciate the time you have taken to complete this survey. For your convenience, please use the postage-paid return envelope included in your survey packet to return your questionnaire to the Bureau of Sociological Research.

Questions or requests from this survey can be directed to:
Bureau of Sociological Research
University of Nebraska-Lincoln
301 Benton Hall
PO Box 886102
Lincoln, NE 68588-6102

Phone: 1-800-480-4549 (toll free)
E-mail: bosr@unl.edu

Figure A.17: NASIS Back Cover

DATE

 Nebraska Resident
 Address

Dear Nebraska Resident,

For the last 35 years Nebraskans like you have been asked to help researchers at UNL by giving their attitudes and opinions about issues affecting the state and the people who live here. This year your household has been randomly selected to continue in this tradition by participating in the Nebraska Annual Social Indicators Survey (NASIS). Please have the **adult age 19 or older in your household who will have the next birthday that will take place after July 1st, 2013** complete the questionnaire and return it in the enclosed envelope. Hearing from the person with the next birthday is very important because it ensures that we get responses from all different types of Nebraskans—men and women, the young and old, those who typically read the mail and those who do not.

This survey asks questions about opinions, characteristics, and behaviors so we can find out more about how Nebraskans think, feel, and live. Results of the survey have been used by Nebraska state agencies, the state Legislature, and researchers at UNL. Your participation is important; we can only be sure the data and the conclusions drawn from it are accurate if we hear from nearly everyone who is selected to participate.

While your participation will help us better understand how Nebraskans are doing these days, it is completely voluntary. There is no direct benefit if you participate and no negative consequence if you choose not to participate. You might notice that there is a unique identification number on your questionnaire. This number simply allows us to keep track of which households have already responded. When you return your survey, we will use this number to remove your address from our list. This allows us to make sure the answers you provide remain confidential and that we are not sending you reminders after you have responded. Additionally, all results will be reported so that no individual can be identified.

I am happy to answer any questions you may have about this survey and can be reached by telephone at 1-800-480-4589 or by e-mail at bsr@unl.edu. This study has been reviewed and approved by the UNL Institutional Review Board (IRB). If you have questions about your rights as a participant, you may contact them at 402-472-6965.

I truly appreciate your time and help with the NASIS this year.

Sincerely,



 Amanda Richardson
 Assistant Director
 Bureau of Sociological Research
 University of Nebraska-Lincoln



July 16, 2013

Nebraska Resident
 «Street» «Apt»
 «City», «STATE_ABBR.» «ZIP»-«ZIP4»

Dear Nebraska Resident,

In early June we sent a letter to your address that asked a member of your household to complete the 2013 Nebraska Annual Social Indicators Survey, which asks for your experiences and opinions about a number of issues of importance to Nebraska. To the best of our knowledge the survey has not yet been returned.

We are writing again because getting your household's completed questionnaire is critically important to the quality of this research. It is only by hearing from nearly everyone in the sample that we can be sure our results truly represent the people of Nebraska. Accuracy is especially important to us because past results have been used in decision making by Nebraska state agencies, the state legislature, and administrators and researchers at UNL. Therefore, we hope the **adult age 19 or older in your household who will have the next birthday that will take place after July 1st, 2013** will complete the questionnaire soon. Hearing from the person with the next birthday is very important because it ensures that we get responses from all different types of Nebraskans—men and women, the young and old, those who typically read the mail and those who do not.

While participation is voluntary, you can help us a great deal by asking the adult age 19 or older with the next birthday in your household to take about 15 minutes to share their experiences and opinions. You might notice that there is a unique identification number on your questionnaire. This number simply allows us to keep track of which households have already responded. When you return your survey, we will use this number to remove your address from our list. This allows us to make sure the answers you provide remain confidential and that we are not sending you reminders after you have responded.

I am happy to answer any questions you may have about this survey and can be reached by telephone at 1-800-480-4549 or by e-mail at bosr@unl.edu. This study has been reviewed and approved by the UNL Institutional Review Board (#: 20130413559 EX). If you have questions about your rights as a participant, you may contact them at 402-472-6965.

This is the 35th year we have conducted this survey. We truly appreciate your help making it a success!

Sincerely,

Amanda Richardson
 Assistant Director
 Bureau of Sociological Research
 University of Nebraska-Lincoln

We are in the process of putting together a list of people who are willing to be contacted in the future to be a part of other social research projects. Please complete the questions below to let us know if you are interested, and, if so, how we can reach you again. We have included a separate envelope for you to use to return this card separately from your survey responses.

NASIS 2013

Nebraska Annual Social Indicators Survey

Future Research Interest Form

UNIVERSITY OF
Nebraska
Lincoln

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1. Would you be willing to be contacted again by researchers at the University of Nebraska-Lincoln to participate in future research?

Yes
 No → Flip card over for return instructions.

Great! Please tell us a little about yourself, so we know who to ask for and how best to reach you in the future.

2. What is your name?

First name: _____

Last name: _____

3. What is your telephone number, including area code? If you have more than one phone number, please provide the one that would be **BEST** for us to call.

Phone: (_____) _____ - _____

N/A, no phone at this time. → Go to # 6.

4. Is the phone number you provided a cell (mobile, wireless) phone number?

Yes
 No

5. Is it OK to leave an answering machine or voicemail message for you on this phone?

Yes
 No
 N/A, no answering machine or voicemail at this time.

Many times we contact people through the Internet to conduct surveys.

6. Would you be willing to provide an e-mail address we could use to let you know about additional research opportunities?

Yes
 No
 N/A, no e-mail at this time. → Go to # 8.

MORE QUESTIONS ON BACK

7. What is your e-mail address? Be assured that your e-mail will not be disclosed nor used for any purpose other than to contact you about future research studies.

_____ @ _____

8. What is the **BEST** way to contact you about future research studies?

Mail
 Phone
 E-mail
 Other, please specify: _____

9. Finally, please indicate below any other information that would help us determine what kinds of future research you would be interested in or further details about how best to contact you with future study details.

FOLD HERE TO RETURN

Thank you!

Please use the small, postage-paid envelope enclosed in your survey packet to return this card to the Bureau of Sociological Research (BOSR) separately from your survey.

Any questions or inquiries about NASIS 2013 or future research can be directed to:

Bureau of Sociological Research
University of Nebraska-Lincoln
P.O. Box 886102, Lincoln, NE 68588-6102
Phone: 402-472-3672, Toll-free: 1-800-480-4549
E-mail: bosr@unl.edu, Web: <http://bosr.unl.edu>

UNIVERSITY OF
Nebraska
Lincoln

cid>

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Dear Nebraska Resident,

For 35 years Nebraskans like you have been helping researchers from across the state by sharing your experiences and opinions in the Nebraska Annual Social Indicators Survey. We are asking you to continue this tradition by completing the 2013 survey, which was sent to your household last week. If you have already completed it, please accept our sincere thanks. If not, we ask that the **adult age 19 or older in your household who will have the next birthday to take place after July 1st, 2013** complete the survey today.

While participation is voluntary, you can help us a great deal by having the correct person in your household take a few minutes to share their experiences and opinions. All answers will be kept completely confidential. If you did not receive a questionnaire or if it was misplaced, please call 1-800-480-4549 and we will send another one immediately. Again, we appreciate your help and look forward to receiving your survey.

Sincerely,
Amanda Richardson, Assistant Director
Bureau of Sociological Research
University of Nebraska-Lincoln

UNIVERSITY OF
Nebraska
Lincoln

DEPARTMENT OF SOCIOLOGY
Bureau of Sociological Research

301 Benton Hall
P.O. Box 885102
Lincoln, NE 68588-0102

NON PROFIT
US POSTAGE
PAID
UNL

RETURN SERVICE REQUESTED

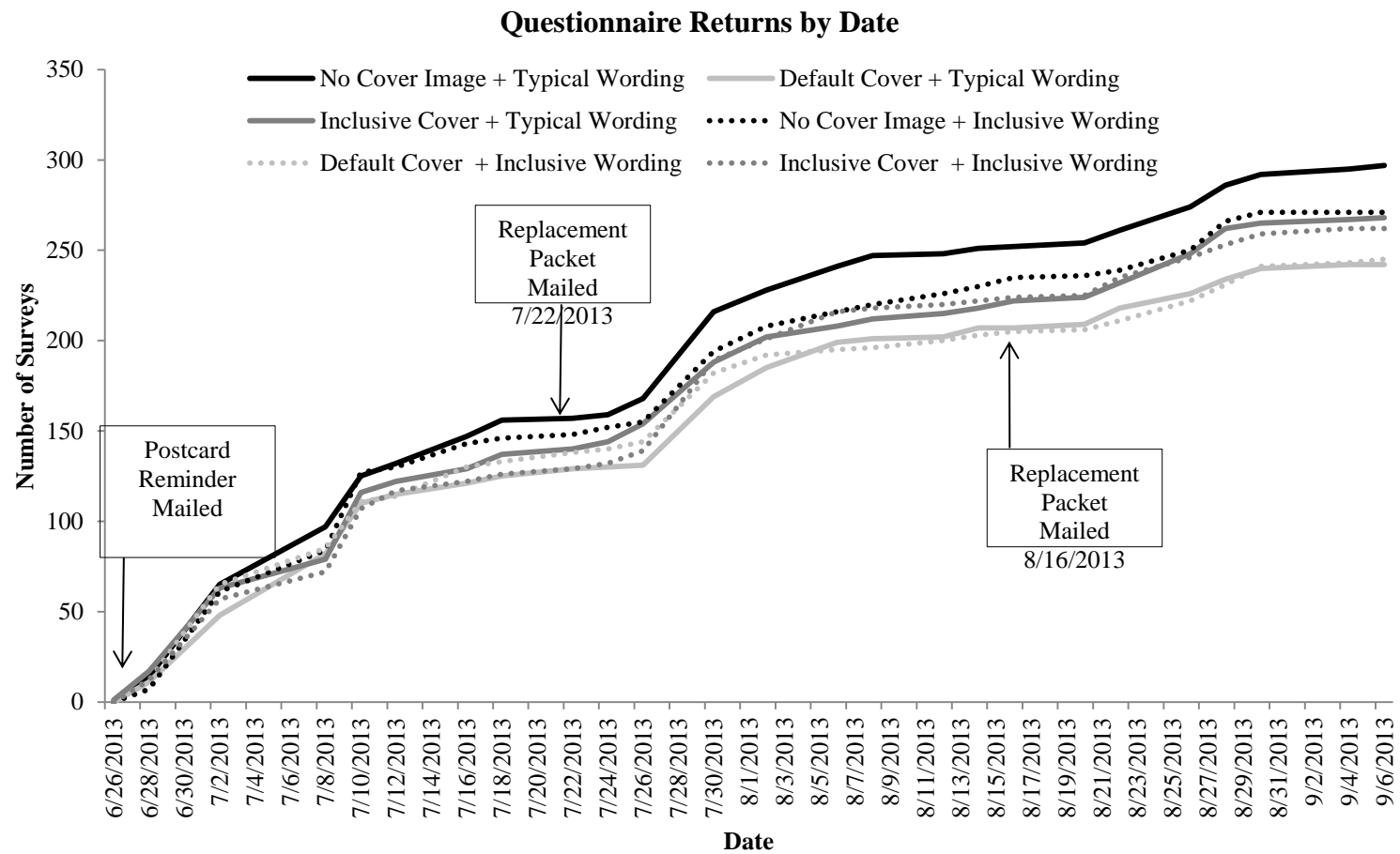


Figure A.18: Returns of Each Questionnaire Treatment throughout Field Period

**APPENDIX B: NON-LGB DEMOGRAPHIC, POLITICAL, AND RELIGIOUS
COMPOSITION BY EXPERIMENTAL TREATMENT**

Table B.1: Demographic characteristics of non-LGB respondents by cover design treatment.

	Total	Inclusive	Default	No Cover Image	X ² (p-value)
Sex					
Male	41.58	39.32	42.80	42.62	1.58
Female	58.42	60.68	57.20	57.38	(0.45)
Race					
White	95.61	96.91	94.70	95.20	3.04
Nonwhite	4.39	3.09	5.30	4.80	(0.22)
Ethnicity					0.58
Hispanic	2.02	2.02	2.39	1.70	(0.75)
Age					
19-34	11.46	12.72	10.38	11.23	
35-49	18.97	19.28	19.28	18.42	9.39
50-64	33.86	31.81	31.14	38.12	(0.15)
65+	35.70	36.18	39.19	32.23	
Education					
HS or <	21.42	21.19	22.98	20.24	2.85
Some College	35.11	33.74	33.70	37.70	(0.58)
BA+	43.47	45.06	43.33	42.06	
Kids in HH					
Yes	27.91	28.69	27.35	27.66	0.23
No	72.09	71.31	72.65	72.34	(0.89)

Table B.2: Political characteristics of non-LGB respondents by cover design treatment.

	Total	Inclusive	Default	No Cover Image	X ² (p-value)
Political Party					
Democrat	27.38	25.20	30.63	26.64	5.09
Republican	43.59	44.67	43.47	42.66	(0.28)
Independent/Other	29.03	30.12	25.90	30.69	
Political Ideology					
Very Liberal	3.16	2.50	2.07	4.69	
Liberal	15.22	13.75	20.28	12.30	21.77
Moderate	36.61	35.42	35.71	38.48	(0.01)
Conservative	35.27	36.46	33.87	35.35	
Very Conservative	9.75	11.88	8.06	9.18	
2012 Presidential Vote					
Obama	37.35	35.42	37.75	38.84	
Romney	49.33	50.83	48.54	48.61	1.66
Other	1.82	2.08	1.80	1.59	(0.95)
Did Not Vote	11.49	11.67	11.91	10.96	

Table B.3: Religious characteristics of non-LGB respondents by cover design treatment.

	Total	Inclusiv e	Defaul t	No Cover Image	X² (p- value)
Religion					
Protestant	56.22	57.44	57.27	54.12	
Catholic	28.45	27.89	26.87	30.39	3.20
Other	4.63	4.34	5.51	4.12	(0.78)
None	10.70	10.33	10.35	11.37	
Born-Again Christian					
Yes	26.69	28.60	24.49	26.83	1.97
No	73.31	71.40	75.51	73.17	(0.37)
Religious Attendance					
Several Times a Week	6.21	6.34	6.62	5.73	
Once a Week	31.45	33.54	29.80	30.92	
Once a Month to Nearly Every Week	19.71	21.27	20.31	17.75	8.17
About Once a Year to Several Times a Year	22.44	19.43	23.40	24.43	(0.61)
Less than Once a Year	8.94	9.00	7.73	9.92	
Never	11.26	10.43	12.14	11.26	
Religious Influence					
Very Much	36.60	37.65	37.64	34.72	
Quite a Bit	27.75	26.72	29.10	27.55	
Some	19.72	19.84	18.16	20.94	2.81
A Little	7.36	7.49	6.78	7.74	(0.95)
None/Not Religious	8.58	8.30	8.32	9.06	

Table B.4: Other characteristics of non-LGB respondents by cover design treatment.

	Total	Inclusive	Default	No Cover Image	X² (p-value)
LGB Relative/Friend/Co-Worker					
Yes	42.55	43.09	40.81	43.58	0.87
No	57.45	56.91	59.19	56.42	(0.65)
Geography					
Rural	18.42	18.15	17.52	19.44	0.65
Urban	81.58	81.85	82.48	80.56	(0.72)

Table B.5: Demographic characteristics of non-LGB respondents by question wording treatment.

	Total	Inclusive	Typical	X² (p-value)
Sex				
Male	41.58	39.10	44.04	3.81
Female	58.42	60.90	55.96	(0.05)
Race				
White	95.61	96.01	95.23	0.53
Nonwhite	4.39	3.99	4.77	(0.47)
Ethnicity				0.0003
Hispanic^a	2.02	2.03	2.02	(0.99)
Age				
19-34	11.46	11.04	11.88	
35-49	18.97	19.81	18.15	3.85
50-64	33.86	31.78	35.90	(0.28)
65+	35.70	37.37	34.07	
Education				
HS or <	21.42	20.95	21.89	0.25
Some College	35.11	35.61	34.61	(0.88)
BA+	43.47	43.44	43.50	
Kids in HH				
Yes	27.91	28.09	27.73	0.02
No	72.09	71.91	72.27	(0.88)

Table B.6: Political characteristics of non-LGB respondents by question wording treatment.

	Total	Inclusive	Typical	X² (p-value)
Political Party				
Democrat	27.38	26.92	27.83	6.17
Republican	43.59	41.14	45.98	(0.05)
Independent/Other	29.03	31.94	26.19	
Political Ideology				
Very Liberal	3.16	4.14	2.21	
Liberal	15.22	14.98	15.45	4.96
Moderate	36.61	36.09	37.10	(0.29)
Conservative	35.27	35.66	34.90	
Very Conservative	9.75	9.13	10.34	
2012 Presidential Vote				
Obama	37.35	37.77	36.94	
Romney	49.33	48.51	50.14	0.44
Other	1.82	1.84	1.81	(0.93)
Did Not Vote	11.49	11.88	11.11	

Table B.7: Religious characteristics of non-LGB respondents by question wording treatment.

	Total	Inclusive	Typical	X² (p-value)
Religion				
Protestant	56.22	55.93	56.50	
Catholic	28.45	26.78	30.10	5.49
Other	4.63	4.88	4.38	(0.14)
None	10.70	12.41	9.03	
Born-Again Christian				
Yes	26.69	24.68	28.63	2.84
No	73.31	75.32	71.37	(0.09)
Religious Attendance				
Several Times a Week	6.21	6.89	5.54	
Once a Week	31.45	31.54	31.35	
Once a Month to Nearly Every Week	19.71	17.77	21.62	5.27
About Once a Year to Several Times a Year	22.44	22.31	22.57	(0.38)
Less than Once a Year	8.94	9.23	8.65	
Never	11.26	12.26	10.27	
Religious Influence				
Very Much	36.60	36.83	36.36	
Quite a Bit	27.75	27.42	28.07	
Some	19.72	20.05	19.39	2.00
A Little	7.36	6.55	8.16	(0.74)
None/Not Religious	8.58	9.14	8.02	

Table B.8: Other characteristics of non-LGB respondents by question wording treatment.

	Total	Inclusive	Typical	X² (p-value)
LGB Relative/Friend/Co-worker				
Yes	42.55	43.09	42.03	0.17
No	57.45	56.91	57.97	(0.68)
Geography				
Urban	81.58	81.40	81.76	0.03
Rural	18.42	18.60	18.24	(0.86)

**APPENDIX C: LGB DEMOGRAPHIC, POLITICAL, AND RELIGIOUS
COMPOSITION BY EXPERIMENTAL TREATMENT**

Table C.1: Demographic characteristics of LGB respondents by cover design treatment.

	Total	Inclusive	Default	No Cover Image	X ² (p-value) (Fisher's Exact)
Sex					4.70
Male	52.94	70.59	50.50	30.77	(0.10)
Female	47.06	29.41	50.00	69.23	(0.11)
Race					
White	87.10	93.33	50.0	91.67	5.64
Nonwhite	12.90	6.67	50.00	8.33	(0.06) (0.11)
Ethnicity					
Hispanic	9.38	18.75	0.00	0.00	3.31 (0.19) (0.34)
Age					
19-34	23.53	29.41	25.00	15.38	4.73
35-49	35.29	41.18	25.00	30.77	(0.58)
50-64	17.65	11.76	0.00	30.77	(0.69)
65+	23.53	17.65	50.00	23.08	
Education					
HS or <	17.24	7.14	0.00	36.36	7.34
Some College	34.48	50.00	50.00	9.09	(0.12)
BA+	48.28	42.86	50.00	54.55	(0.13)
Kids in HH					
Yes	25.81	33.33	25.00	16.67	0.97 (0.62)
No	74.19	66.67	75.00	83.33	(0.73)

Table C.2: Political characteristics of LGB respondents by cover design treatment.

	Total	Inclusive	Default	No Cover Image	X ² (p-value) (Fisher's Exact)
Political Party					
Democrat	50.00	43.75	66.67	54.55	4.51
Republican	10.00	12.50	33.33	0.00	(0.34)
Independent/Other	40.00	43.75	0.00	45.45	(0.37)
Political Ideology					
Very Liberal	24.14	20.00	33.33	27.27	
Liberal	34.48	46.67	0.00	27.27	11.25
Moderate	31.03	26.67	33.33	36.36	(0.19)
Conservative	6.90	6.67	0.00	9.09	(0.46)
Very Conservative	3.45	0.00	33.33	0.00	
2012 Presidential Vote					
Obama	71.88	75.00	50.00	75.00	4.97
Romney	6.25	6.25	25.00	0.00	(0.55)
Other	3.13	6.25	0.00	0.00	(0.55)
Did Not Vote	18.75	12.50	25.00	25.00	

Table C.3: Religious characteristics of LGB respondents by cover design treatment.

	Total	Inclusive	Default	No Cover Image	X ² (p-value) (Fisher's Exact)
Religion					
Protestant	37.50	25.00	50.00	50.00	
Catholic	12.50	12.50	0.00	16.67	10.63 (0.10)
Other	15.63	6.25	50.00	16.67	(0.10)
None	34.38	56.26	0.00	16.67	
Born-Again Christian					
Yes	35.48	31.25	50.00	36.36	0.50 (0.78)
No	64.52	68.75	50.00	63.64	(0.88)
Religious Attendance					
Several Times a Week	0.00	0.00	0.00	0.00	
Once a Week	3.13	0.00	25.00	0.00	
Once a Month to Nearly Every Week	18.75	18.75	25.00	16.67	13.07 (0.11)
About Once a Year to Several Times a Year	31.25	31.25	0.00	41.67	(0.22)
Less than Once a Year	12.50	6.25	0.00	25.00	
Never	34.38	43.75	50.00	16.67	
Religious Influence					
Very Much	9.38	12.50	25.00	0.00	
Quite a Bit	21.88	6.25	50.00	33.33	12.15 (0.15)
Some	34.38	31.25	25.00	41.67	(0.06)
A Little	3.13	0.00	0.00	8.33	
None/Not Religious	31.25	50.00	0.00	16.67	

Table C.4: Other characteristics of LGB respondents by cover design treatment.

	Total	Inclusive	Default	No Cover Image	X ² (p-value) (Fisher's Exact)
LGB Relative/Friend/Co-Worker					
Yes	82.35	82.35	75.00	84.62	0.19 (0.91)
No	17.65	17.65	25.00	15.38	(1.00)
Geography					
Rural	5.88	11.76	0.00	0.00	2.13 (0.35)
Urban	94.12	88.24	100.00	100.00	(0.61)

Table C.5: Demographic characteristics of LGB respondents by question wording treatment.

	Total	Inclusive	Typical	X² (p-value) (Fisher's Exact)
Sex				
Male	52.94	53.33	52.63	0.002 (0.97)
Female	47.06	46.67	47.37	(1.00)
Race				
White	87.10	86.67	87.50	0.005 (0.95)
Nonwhite	12.90	13.33	12.50	(1.00)
Ethnicity				0.52 (0.47)
Hispanic^a	9.38	13.33	5.88	(0.59)
Age				
19-34	23.53	33.33	15.79	5.61 (0.13)
35-49	35.29	46.67	26.32	(0.14)
50-64	17.65	13.33	21.05	
65+	23.53	6.67	36.84	
Education				
HS or < Some College	17.24	21.43	13.33	0.45 (0.80)
BA+	34.48	35.71	33.33	(0.89)
BA+	48.28	42.86	53.33	
Kids in HH				
Yes	25.81	26.67	25.00	0.01 (0.92)
No	74.19	73.33	75.00	(1.00)

Table C.6: Political characteristics of LGB respondents by question wording treatment.

	Total	Inclusive	Typical	X² (p-value) (Fisher's Exact)
Political Party				
Democrat	50.00	46.67	53.33	4.40 (0.11)
Republican	10.00	0.00	20.00	(0.14)
Independent/Other	40.00	53.33	26.67	
Political Ideology				
Very Liberal	24.14	26.67	21.43	4.11 (0.39)
Liberal	34.48	33.33	35.71	(0.51)
Moderate	31.03	40.00	21.43	
Conservative	6.90	0.00	14.29	
Very Conservative	3.45	0.00	7.14	
2012 Presidential Vote				
Obama	71.88	80.00	64.71	2.93 (0.40)
Romney	6.25	0.00	11.76	(0.62)
Other	3.13	0.00	5.88	
Did Not Vote	18.75	20.00	17.65	

Table C.7: Religious characteristics of LGB respondents by question wording treatment.

	Total	Inclusive	Typical	X^2 (p-value) (Fisher's Exact)
Religion				
Protestant	37.50	26.67	47.06	1.51
Catholic	12.50	13.33	11.76	(0.68)
Other	15.63	20.00	11.76	(0.68)
None	34.38	40.00	29.41	
Born-Again Christian				
Yes	35.48	33.33	37.50	0.06
No	64.52	66.67	62.50	(0.81) (1.00)
Religious Attendance				
Several Times a Week	0.00	0.00	0.00	
Once a Week	3.13	0.00	5.88	
Once a Month to Nearly Every Week	18.75	6.67	29.41	6.84 (0.15)
About Once a Year to Several Times a Year	31.25	33.33	29.41	(0.13)
Less than Once a Year Never	12.50 34.38	6.67 53.33	17.65 17.65	
Religious Influence				
Very Much	9.38	6.67	11.76	
Quite a Bit	21.88	33.33	11.76	3.00
Some	34.38	33.33	35.29	(0.56)
A Little	3.13	0.00	5.88	(0.64)
None/Not Religious	31.25	26.67	35.29	

Table C.8: Other characteristics of LGB respondents by question wording treatment.

	Total	Inclusive	Typical	X^2 (p-value) (Fisher's Exact)
LGB Relative/Friend/Co-worker				
Yes	82.35	93.33	73.68	2.23
No	17.65	6.67	26.32	(0.14) (0.20)
Geography				
Urban	94.12	93.33	94.74	0.03
Rural	5.88	6.67	5.29	(0.86) (1.00)

**APPENDIX D: WEIGHTED COMPOSITION ANALYSES BY EXPERIMENTAL
TREATMENT**

Table D.1: Demographic characteristics of NASIS respondents by cover design treatment (weighted percentages).

	Total	Inclusive	Default	No Cover Image	$F_{R-S, Pearson}$ (p-value)
Sex					
Male	49.13	49.04	48.94	49.38	0.01
Female	50.87	50.96	51.06	50.62	(0.99)
Race					
White	94.13	96.24	92.34	93.65	1.87
Nonwhite	5.87	3.76	7.66	6.35	(0.15)
Ethnicity					
Hispanic	3.23	4.31	3.1	2.34	0.80
Not Hispanic	96.77	95.69	96.90	97.66	(0.45)
Age					
19-34	22.00	25.07	17.89	22.54	
35-49	29.09	28.81	31.45	27.39	1.81
50-64	27.95	25.97	25.95	31.45	(0.10)
65+	20.96	20.15	24.71	18.63	
Education					
HS or <	18.53	19.85	19.35	16.56	1.34
Some College	36.43	31.96	38.09	39.29	(0.25)
BA+	45.04	48.19	42.56	44.16	
Kids in HH					
Yes	40.15	39.52	42.19	39.07	0.34
No	59.85	60.48	57.81	60.93	(0.71)

Table D.2: Political characteristics of NASIS respondents by cover design treatment (weighted percentages).

	Total	Inclusive	Default	No Cover Image	$F_{R-S, Pearson}$ (p-value)
Political Ideology					
Very Liberal	4.00	3.17	2.01	6.29	
Liberal	16.12	15.99	21.33	12.18	2.44
Moderate	37.68	36.27	35.72	40.50	(0.01)
Conservative	32.52	33.03	32.78	31.85	
Very Conservative	9.69	11.53	8.16	9.18	
Political Party					
Democrat	25.86	24.73	29.29	24.15	1.05
Republican	41.66	42.31	42.14	40.66	(0.38)
Independent/Other	32.48	32.96	28.57	35.20	
2012 Presidential Vote					
Obama	35.50	36.52	34.85	35.06	
Romney	46.80	45.71	46.93	47.74	
Other	2.26	2.88	2.21	1.70	
Did Not Vote	15.44	14.89	16.00	15.50	

Table D.3: Religious characteristics of NASIS respondents by cover design treatment (weighted percentages).

	Total	Inclusive	Default	No Cover Image	$F_{R-S, Pearson}$ (p-value)
Religion					
Protestant	50.99	49.84	52.65	50.69	
Catholic	28.10	28.12	27.04	28.97	0.81
Other	6.03	4.53	7.54	6.19	(0.56)
None	14.88	17.51	12.77	14.15	
Born-Again Christian					
Yes	25.96	27.61	23.70	26.28	0.64
No	74.04	72.39	76.30	73.72	(0.53)
Religious Attendance					
Several Times a Week	5.06	4.48	4.54	6.02	
Once a Week	28.56	30.93	27.38	27.30	
Once a Month to Nearly Every Week	19.54	20.05	22.33	16.77	0.80
About Once a Year to Several Times a Year	24.82	22.86	25.55	26.06	(0.63)
Less than Once a Year	9.70	8.78	8.43	11.60	
Never	12.33	12.90	11.77	12.25	
Religious Influence					
Very Much	31.78	31.69	32.28	31.45	
Quite a Bit	26.46	23.87	29.38	26.49	
Some	20.50	21.36	19.58	20.45	0.50
A Little	9.15	9.17	8.85	9.38	(0.86)
None/Not Religious	12.11	13.91	9.91	12.23	

Table D.4: Other characteristics of NASIS respondents by cover design treatment (weighted percentages).

	Total	Inclusive	Default	No Cover Image	$F_{R-S, Pearson}$ (p-value)
LGB Relative/Friend/Co-Worker					
Yes	46.94	49.37	43.82	47.22	0.99
No	53.06	50.63	56.18	52.78	(0.37)
Geography					
Rural	17.58	18.10	16.50	18.00	0.19
Urban	82.42	81.90	83.50	82.00	(0.83)

Table D.5: Demographic characteristics of NASIS respondents by question wording treatment (weighted percentages).

	Total	Inclusive	Typical	$F_{R-S, Pearson}$ (p-value)
Sex				
Male	49.13	46.54	51.58	2.56
Female	50.87	53.46	48.42	(0.11)
Race				
White	94.13	95.28	93.01	1.93
Not White/2+ Races	5.87	4.72	6.99	(0.16)
Ethnicity				0.23
Hispanic	3.23	3.55	2.93	(0.63)
Not Hispanic	96.77	96.45	97.07	
Age				
19-34	22.00	21.66	22.33	
35-49	29.09	30.28	27.96	0.65
50-64	27.95	26.22	29.58	(0.56)
65+	20.96	21.84	20.13	
Education				
HS or <	18.53	18.77	18.29	0.41
Some College	36.43	37.59	35.31	(0.67)
BA+	45.04	43.64	46.40	
Kids in HH				
Yes	40.15	39.71	40.57	0.07
No	59.85	60.29	59.43	(0.79)

Table D.6: Political characteristics of NASIS respondents by question wording treatment (weighted percentages).

	Total	Inclusive	Typical	$F_{R-S, Pearson}$ (p-value)
Political Party				
Democrat	25.86	25.07	26.62	2.68
Republican	41.66	38.98	44.25	(0.07)
Independent/Other	32.48	35.95	29.13	
Political Ideology				
Very Liberal	4.00	4.79	3.24	
Liberal	16.12	15.58	16.63	1.54
Moderate	37.68	38.66	36.75	(0.19)
Conservative	32.52	33.39	31.69	
Very Conservative	9.69	7.58	11.69	
2012 Presidential Vote				
Obama	35.50	35.94	35.08	
Romney	46.80	45.52	48.01	0.30
Other	2.26	2.63	1.91	(0.82)
Did Not Vote	15.44	15.91	15.00	

Table D.7: Religious characteristics of NASIS respondents by question wording treatment (weighted percentages).

	Total	Inclusive	Typical	$F_{R-S, Pearson}$ (p-value)
Born-Again Christian				
Yes	25.96	24.34	27.48	1.26
No	74.04	75.66	72.52	(0.26)
Religion				
Has a Religious Affiliation	85.12	82.35	87.75	4.66
None	14.88	17.65	12.25	(0.03)
Protestant	50.99	50.68	51.29	
Catholic	28.10	25.40	30.67	2.15
Other	6.03	6.28	5.79	(0.09)
None	14.88	17.65	12.25	
Religious Attendance				
Several Times a Week	5.06	5.81	4.34	
Once a Week	28.56	27.98	29.12	
Once a Month to Nearly Every Week	19.54	16.94	22.00	1.42
About Once a Year to Several Times a Year	24.82	24.95	24.69	(0.21)
Less than Once a Year	9.70	10.28	9.14	
Never	12.33	14.04	10.71	
Religious Influence				
Very Much	31.78	30.98	32.53	
Quite a Bit	26.46	25.94	26.95	
Some	20.50	20.91	20.11	0.62
A Little	9.15	8.50	9.77	(0.64)
None/Not Religious	12.11	13.66	10.64	

Table D.8: Other characteristics of NASIS respondents by question wording treatment (weighted percentages).

	Total	Inclusive	Typical	$F_{R-S, Pearson}$ (p-value)
LGB Relative/Friend/Co-worker				
Yes	46.94	45.05	48.71	1.34
No	53.06	54.95	51.29	(0.25)
Geography				
Urban	82.42	82.09	82.72	0.07
Rural	17.58	17.91	17.28	(0.79)
Sexual Orientation				
LGB	2.78	3.47	2.15	1.34
Non-LGB	97.22	96.53	97.85	(0.25)

**APPENDIX E: COMPOSITION AND VISUAL CONTEXT EFFECTS PAIRWISE
COMPARISONS OF COVER DESIGN TREATMENT**

Table E.1: Demographic characteristics of NASIS respondents, no cover image treatment vs. default treatment (unweighted percentages).

	No Cover Image	Default	χ^2 (p-value)
Sex			
Male	42.73	43.27	0.03
Female	57.27	56.73	(0.86)
Race			
White	95.09	93.64	1.01
Nonwhite	4.91	6.36	(0.32)
Ethnicity			
Hispanic	1.62	2.30	0.63
Not Hispanic	98.38	97.70	(0.43)
Age			
19-34	11.30	10.14	
35-49	18.09	18.66	6.67
50-64	37.22	31.03	(0.08)
65+	33.39	40.16	
Education			
HS or <	21.43	23.58	1.07
Some College	36.84	34.11	(0.59)
BA+	41.73	42.32	
Kids in HH			
Yes	26.89	27.43	0.04
No	73.11	72.57	(0.85)

Table E.2: Demographic characteristics of NASIS respondents, no image treatment vs. inclusive treatment (unweighted percentages).

	No Cover Image	Inclusive	χ^2 (p-value)
Sex			
Male	42.73	40.00	0.85
Female	57.27	60.00	(0.36)
Race			
White	95.09	96.67	1.67
Nonwhite	4.91	3.33	(0.20)
Ethnicity			
Hispanic	1.62	2.87	1.93
Not Hispanic	98.38	97.13	(0.16)
Age			
19-34	11.30	12.78	
35-49	18.09	20.00	4.66
50-64	37.22	31.11	(0.20)
65+	33.39	36.11	
Education			
HS or <	21.43	21.48	
Some College	36.84	33.79	1.23
BA+	41.73	44.73	(0.54)
Kids in HH			
Yes	26.89	28.88	0.52
No	73.11	71.12	(0.47)

Table E.3: Demographic characteristics of NASIS respondents, default treatment vs. inclusive treatment (unweighted percentages).

	Default	Inclusive	X² (p-value)
Sex			
Male	43.27	40.00	1.12
Female	56.73	60.00	(0.29)
Race			
White	93.64	96.67	4.95
Nonwhite	6.36	3.33	(0.03)
Ethnicity			
Hispanic	2.30	2.87	0.32
Not Hispanic	97.70	97.13	(0.57)
Age			
19-34	10.14	12.78	
35-49	18.66	20.00	2.91
50-64	31.03	31.11	(0.41)
65+	40.16	36.11	
Education			
HS or <	23.58	21.48	0.82
Some College	34.11	33.79	(0.67)
BA+	42.32	44.73	
Kids in HH			
Yes	27.43	28.88	0.25
No	72.57	71.12	(0.62)

Table E.4: Political characteristics of NASIS respondents, no cover image treatment vs. default treatment (unweighted percentages).

	No Cover Image	Default	X² (p-value)
Political Party			
Democrat	27.21	31.02	4.24 (0.12)
Republican	41.54	43.38	
Independent/Other	31.25	25.60	
Political Ideology			
Very Liberal	5.06	2.22	15.55 (0.004)
Liberal	12.36	20.22	
Moderate	38.76	35.56	
Conservative	34.83	33.56	
Very Conservative	8.99	8.44	
2012 Presidential Vote			
Obama	38.83	37.58	0.24 (0.97)
Romney	47.54	48.38	
Other	1.89	1.73	
Did Not Vote	11.74	12.31	

Table E.5: Political characteristics of NASIS respondents, no cover image treatment vs. inclusive treatment (unweighted percentages).

	No Cover Image	Inclusive	X² (p-value)
Political Party			
Democrat	27.21	26.25	0.39 (0.82)
Republican	41.54	43.44	
Independent/Other	31.25	30.31	
Political Ideology			
Very Liberal	5.06	2.95	6.53 (0.16)
Liberal	12.36	14.76	
Moderate	38.76	35.04	
Conservative	34.83	35.83	
Very Conservative	8.99	11.42	
2012 Presidential Vote			
Obama	38.83	36.79	0.51 (0.92)
Romney	47.54	48.92	
Other	1.89	2.15	
Did Not Vote	11.74	12.13	

Table E.6: Political characteristics of NASIS respondents, default treatment vs. inclusive treatment (unweighted percentages).

	Default	Inclusive	X² (p-value)
Political Party			
Democrat	31.02	26.25	3.87 (0.14)
Republican	43.38	43.44	
Independent/Other	25.60	30.31	
Political Ideology			
Very Liberal	2.22	2.95	7.07 (0.13)
Liberal	20.22	14.76	
Moderate	35.56	35.04	
Conservative	33.56	35.83	
Very Conservative	8.44	11.42	
2012 Presidential Vote			
Obama	37.58	36.79	1.04 (0.79)
Romney	48.38	48.92	
Other	1.73	2.15	
Did Not Vote	12.31	12.13	

Table E.7: Religious characteristics of NASIS respondents, no cover image treatment vs. default treatment (unweighted percentages).

	No Cover Image	Default	X ² (p-value)
Religion			
Protestant	53.92	57.20	
Catholic	29.85	26.48	2.25
Other	4.66	5.72	(0.52)
None	11.57	10.59	
Born-Again Christian			
Yes	27.59	25.27	0.69
No	72.41	74.73	(0.41)
Religious Attendance			
Several Times a Week	5.63	6.37	
Once a Week	30.49	29.94	
Once a Month to Nearly Every Week	17.97	20.59	4.48
About Once a Year to Several Times a Year	24.14	22.93	(0.48)
Less than Once a Year	10.53	7.43	
Never	11.25	12.74	
Religious Influence			
Very Much	33.69	37.55	
Quite a Bit	27.96	29.11	
Some	21.33	18.35	3.02
A Little	7.89	6.75	(0.55)
None/Not Religious	9.14	8.23	

Table E.8: Religious characteristics of NASIS respondents, no cover image treatment vs. inclusive treatment (unweighted percentages).

	No Cover Image	Inclusive	X ² (p-value)
Religion			
Protestant	53.92	56.53	
Catholic	29.85	27.46	0.85
Other	4.66	4.48	(0.84)
None	11.57	11.50	
Born-Again Christian			
Yes	27.59	29.61	0.52
No	72.41	70.39	(0.47)
Religious Attendance			
Several Times a Week	5.63	6.35	
Once a Week	30.49	32.31	
Once a Month to Nearly Every Week	17.97	21.35	5.12
About Once a Year to Several Times a Year	24.14	20.00	(0.40)
Less than Once a Year	10.53	8.65	
Never	11.25	11.35	
Religious Influence			
Very Much	33.69	37.45	
Quite a Bit	27.96	26.05	
Some	21.33	19.96	1.85
A Little	7.89	7.22	(0.76)
None/Not Religious	9.14	9.32	

Table E.9: Religious characteristics of NASIS respondents, default treatment vs. inclusive treatment (unweighted percentages).

	Default	Inclusive	X ² (p-value)
Religion			
Protestant	57.20	56.53	
Catholic	26.48	27.46	1.04
Other	5.72	4.48	(0.79)
None	10.59	11.50	
Born-Again Christian			
Yes	25.27	29.61	2.25
No	74.73	70.39	(0.13)
Religious Attendance			
Several Times a Week	6.37	6.35	
Once a Week	29.94	32.31	
Once a Month to Nearly Every Week	20.59	21.35	2.36
About Once a Year to Several Times a Year	22.93	20.00	(0.80)
Less than Once a Year	7.43	8.65	
Never	12.74	11.35	
Religious Influence			
Very Much	37.55	37.45	
Quite a Bit	29.11	26.05	
Some	18.35	19.96	1.60
A Little	6.75	7.22	(0.81)
None/Not Religious	8.23	9.32	

Table E.10: Other characteristics of NASIS respondents, no cover image treatment vs. default treatment (unweighted percentages).

	No Cover Image	Default	χ^2 (p-value)
LGB Relative/Friend/Co-worker			
Yes	43.85	40.79	1.00
No	56.15	59.21	(0.32)
Geography			
Rural	19.44	17.90	0.41
Urban	80.56	82.10	(0.52)

Table E.11: Other characteristics of NASIS respondents, no cover image treatment vs. inclusive treatment (unweighted percentages).

	No Cover Image	Inclusive	χ^2 (p-value)
LGB Relative/Friend/Co-worker			
Yes	43.85	44.38	0.03
No	56.15	55.62	(0.86)
Geography			
Rural	19.44	18.06	0.34
Urban	80.56	81.94	(0.56)

Table E.12: Other characteristics of NASIS respondents, default treatment vs. default treatment (unweighted percentages).

	Default	Inclusive	χ^2 (p-value)
LGB Relative/Friend/Co-worker			
Yes	40.79	44.38	1.33
No	59.21	55.62	(0.25)
Geography			
Rural	17.90	18.06	0.004
Urban	82.10	81.94	(0.95)

Table E.13: Views of LGB issues of NASIS respondents, no cover image treatment vs. default treatment (unweighted percentages).

	No Cover Image	Default	X² (p-value)
Feelings toward Gay Men and Lesbians			
Very Favorable	10.20	8.18	
Favorable	21.29	25.37	
Neither Favorable nor Unfavorable	40.43	41.72	11.73 (0.02)
Unfavorable	15.92	9.85	
Very Unfavorable	12.16	14.88	
Gay Marriage			
Favor	35.89	33.47	
Favor Civil Unions Only	20.36	19.37	1.22 (0.54)
Oppose	43.75	47.16	
Defense of Marriage Act (DOMA)			
Favor	55.82	55.53	0.01
Oppose	44.18	44.47	(0.93)
Adoption Rights			
Favor	51.55	48.92	0.70
Oppose	48.45	51.08	(0.40)
Laws to Protect LGB from Housing Discrimination			
Favor	69.09	73.08	1.95
Oppose	30.91	26.92	(0.16)
Laws to Protect LGB from Job Discrimination			
Favor	73.41	76.28	1.11
Oppose	26.59	23.72	(0.29)

Table E.14: Views of LGB issues of NASIS respondents, no cover image treatment vs. inclusive treatment (unweighted percentages).

	No Cover Image	Inclusive	X² (p-value)
Feelings toward Gay Men and Lesbians			
Very Favorable	10.20	11.57	
Favorable	21.29	20.87	
Neither Favorable nor Unfavorable	40.43	40.99	3.44 (0.49)
Unfavorable	15.92	12.52	
Very Unfavorable	12.16	14.04	
Gay Marriage			
Favor	35.89	37.76	
Favor Civil Unions Only	20.36	17.92	1.11 (0.57)
Oppose	43.75	44.32	
Defense of Marriage Act (DOMA)			
Favor	55.82	51.49	1.99
Oppose	44.18	48.51	(0.16)
Adoption Rights			
Favor	51.55	51.45	0.001
Oppose	48.45	48.55	(0.97)
Laws to Protect LGB from Housing Discrimination			
Favor	69.09	69.32	0.01
Oppose	30.91	30.68	(0.94)
Laws to Protect LGB from Job Discrimination			
Favor	73.41	71.51	0.48
Oppose	26.59	28.49	(0.49)

Table E.15: Views of LGB issues of NASIS respondents, default treatment vs. inclusive treatment (unweighted percentages).

	Default	Inclusive	X² (p-value)
Feelings toward Gay Men and Lesbians			
Very Favorable	8.18	11.57	
Favorable	25.37	20.87	6.84
Neither Favorable nor Unfavorable	41.72	40.99	(0.14)
Unfavorable	9.85	12.52	
Very Unfavorable	14.88	14.04	
Gay Marriage			
Favor	33.47	37.76	2.00
Favor Civil Unions Only	19.37	17.92	(0.37)
Oppose	47.16	44.32	
Defense of Marriage Act (DOMA)			
Favor	55.53	51.49	1.59
Oppose	44.47	48.51	(0.21)
Adoption Rights			
Favor	48.92	51.45	0.63
Oppose	51.08	48.55	(0.43)
Laws to Protect LGB from Housing Discrimination			
Favor	73.08	69.32	1.68
Oppose	26.92	30.68	(0.19)
Laws to Protect LGB from Job Discrimination			
Favor	76.28	71.51	2.89
Oppose	23.72	28.49	(0.09)

Table E.16: Item nonresponse rate for the sexual orientation by cover design treatment.

	Total Sample	Inclusive	Default	No Cover Image	X² (p-value)/ F_{R-S,Peason} (p-value)
Sexual Orientation Item Nonresponse					
Unweighted	2.61	3.15	2.23	2.43	0.96 (0.62)
Weighted	1.91	2.38	1.61	1.71	0.46 (0.63)

Table E.17: Item nonresponse rate for the sexual orientation, default vs. no cover image treatments.

	Default	No Cover Image	X² (p-value)/ F_{R-S,Peason} (p-value)
Sexual Orientation Item Nonresponse			
Unweighted	2.23	2.43	0.05 (0.83)
Weighted	1.61	1.71	0.01 (0.91)

Table E.18: Item nonresponse rate for the sexual orientation, inclusive vs. no cover image treatments.

	Inclusive	No Cover Image	X² (p-value)/ F_{R-S,Peason} (p-value)
Sexual Orientation Item Nonresponse			
Unweighted	3.15	2.43	0.52 (0.47)
Weighted	2.38	1.71	0.58 (0.44)

Table E.19: Item nonresponse rate for the sexual orientation, inclusive vs. default treatments.

	Inclusive	Default	X² (p-value)/ <i>F</i>_{R-S, Pearson} (p-value)
Sexual Orientation Item Nonresponse			
Unweighted	3.15	2.23	0.82 (0.37)
Weighted	2.38	1.61	0.69 (0.41)

**APPENDIX F: RESULTS OF REGRESSION MODELS TO EXAMINE VISUAL
CONTEXT EFFECTS AMONG ALL NASIS RESPONDENTS**

Table F.1: OLS regression model predicting general feeling toward gay men and lesbians^a by cover design treatment (no cover treatment as base outcome) and respondent characteristics.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image (Reference)	–	–	–	–
Default	-0.0391	0.0661	-0.1688	0.0906
Inclusive	-0.0481	0.0642	-0.1740	0.0779
Sex (Male=1, Female=0)	0.2899***	0.0555	0.1809	0.3989
Age (Mean Centered)	0.0125***	0.0020	0.0087	0.0163
Education				
HS or < (Reference)	–	–	–	–
Some College	-0.0728	0.0768	-0.2236	0.0779
BA+	-0.3706***	0.0749	-0.5175	-0.2237
Married/Cohabiting (Yes=1, No=0)	0.1019 ⁺	0.0601	-0.0160	0.2199
Kids in Household (Yes=1, No=0)	0.0543	0.0678	-0.0786	0.1873
Party				
Democrat (Reference)	–	–	–	–
Republican	0.2381**	0.0795	0.0822	0.3940
Independent/Other	0.1572*	0.0763	0.0076	0.3068
Political Ideology				
Very Conservative	0.6382***	0.1521	-0.8255	-0.2287
Conservative	0.2827***	0.0866	-0.3915	-0.0515
Moderate (Reference)	–	–	–	–
Liberal	-0.2215*	0.0704	0.1445	0.4208
Very Liberal	-0.5271**	0.1045	0.4332	0.8432
Religion (Yes=1, None=0)	0.0371	0.0881	-0.1358	0.2099
Born Again Christian (Yes=1, No=0)	0.4470***	0.0625	0.3244	0.5696
Know LGB Person (Yes=1, No=0)	-0.4461***	0.0566	-0.5571	-0.3350
Intercept	2.7644***	0.1305	2.5083	3.0205
R²	0.3494			
n	1213			

Note. ^aCoded as Very Favorable=1, Favorable=2, Neither favorable nor unfavorable=3, Unfavorable=4, Very unfavorable=5. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table F.2: Ordinal regression model predicting general feeling toward gay men and lesbians^a by respondent characteristics and cover design treatment.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image (Reference)	–	–	–	–
Default	-0.141	0.134	-0.403	0.121
Inclusive	-0.156	0.130	-0.411	0.099
Sex (Male=1, Female=0)	0.569***	0.114	0.346	0.792
Age (Mean Centered)	0.026***	0.004	0.018	0.034
Education				
HS or < (Reference)	–	–	–	–
Some College	-0.080	0.157	-0.386	0.227
BA+	-0.692***	0.154	-0.994	-0.390
Married/Cohabiting (Yes=1, No=0)	0.186	0.122	-0.054	0.425
Kids in Household (Yes=1, No=0)	0.138	0.137	-0.130	0.407
Party				
Democrat (Reference)	–	–	–	–
Republican	0.520***	0.161	0.206	0.835
Independent/Other	0.378*	0.154	0.076	0.679
Political Ideology				
Very Liberal	-1.422***	0.321	-2.051	-0.792
Liberal	-0.600***	0.178	-0.949	-0.250
Moderate (Reference)	–	–	–	–
Conservative	0.555***	0.141	0.277	0.832
Very Conservative	1.278***	0.220	0.847	1.710
Religion (Yes=1, None=0)	0.011	0.178	-0.337	0.359
Born Again Christian (Yes=1, No=0)	0.871***	0.129	0.618	1.124
Know LGB Person (Yes=1, No=0)	-0.898***	0.118	-1.128	-0.667
Cut 1	-2.576	0.281	-3.126	-2.025
Cut 2	-0.617	0.267	-1.140	-0.094
Cut 3	1.742	0.270	1.212	2.272
Cut 4	2.770	0.279	2.224	3.316
Pseudo R²			1213	
n			0.1488	

Note. ^aCoded as Very Favorable=1, Favorable=2, Neither favorable nor unfavorable=3, Unfavorable=4, Very unfavorable=5. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table F.3: Multinomial regression model predicting views about same-sex marriage by cover design treatment (no cover image treatment as base outcome) and respondent characteristics.

	Favor				Civil Unions Only			
	Coefficient	Standard Error	95% Confidence Interval		Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound			Lower Bound	Upper Bound
Cover Design								
No Cover Image (Reference)	–	–	–	–	–	–	–	–
Default	-0.2134	0.2156	-0.6358	0.2091	-0.1389	0.2014	-0.5337	0.2559
Inclusive	0.3002	0.2116	-0.1145	0.7149	-0.1269	0.2019	-0.5227	0.2689
Sex (Male=1, Female=0)	-0.4502*	0.1813	-0.8056	-0.0948	-0.2890 ⁺	0.1734	-0.6289	0.0508
Age (Mean Centered)	-0.0439***	0.0069	-0.0573	-0.0304	-0.0123 ⁺	0.0063	-0.0247	0.0001
Education								
HS or < (Reference)	–	–	–	–	–	–	–	–
Some College	0.3531	0.2475	-0.1320	0.8383	0.6313*	0.2539	0.1336	1.1289
BA+	0.6793**	0.2468	0.1956	1.1631	1.1953***	0.2470	0.7111	1.6795
Married/Cohabiting (Yes=1, No=0)	-0.5498**	0.1987	-0.9393	-0.1602	-0.5815**	0.1889	-0.9517	-0.2113
Kids in Household (Yes=1, No=0)	-0.3771 ⁺	0.2224	-0.8131	0.0588	-0.1495	0.2180	-0.5768	0.2779
Party								
Democrat (Reference)	–	–	–	–	–	–	–	–
Republican	-0.7959***	0.2476	-1.2812	-0.3107	-0.5213*	0.2551	-1.0213	-0.0213
Independent/Other	-0.4444 ⁺	0.2418	-0.9182	0.0295	-0.0872	0.2595	-0.5959	0.4215

Table F.3 Continued...

Political Ideology									
Very Conservative	-2.5910***	0.6030	0.0719	2.4357	-0.7284*	0.7936	-1.5886	1.5222	
Conservative	-1.3656***	0.2775	0.1816	1.2694	-0.0333	0.3568	-1.1839	0.2147	
Moderate (Reference)	—	—	—	—	—	—	—	—	
Liberal	0.7255**	0.2251	-1.8069	-0.9243	-0.4846	0.2061	-0.4372	0.3706	
Very Liberal	1.2538*	0.5057	-3.5901	-1.6079	-0.0332	0.3183	-1.3522	-0.1046	
Religion (Yes=1, None=0)	-1.2938***	0.3331	-1.9467	-0.6409	-0.2910	0.3937	-1.0706	0.4727	
Born Again Christian (Yes=1, No=0)	-1.6321***	0.2233	-2.0697	-1.1945	-0.8395***	0.1896	-1.2110	-0.4679	
Know LGB Person (Yes=1, No=0)	1.4325***	0.1812	1.0774	1.7876	0.6928***	0.1769	0.3460	1.0396	
Intercept	1.7872***	0.4500	0.9052	2.6692	-0.0868	0.5064	-1.0794	0.9057	
Pseudo R²	0.2719								
n	1201								

Note. ^aCoded as Favor=1, Favor Civil Unions Only=2, Oppose=3; Oppose is the reference category. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table F.4: Logistic regression predicting views about DOMA^a by cover design treatment (no cover image treatment as base outcome) and respondent characteristics.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image (Reference)	–	–	–	–
Default	-0.0816	0.1738	-0.4221	0.2590
Inclusive	-0.4091*	0.1698	-0.7419	-0.0764
Sex (Male=1, Female=0)	0.3133*	0.1459	0.0272	0.5993
Age (Mean Centered)	0.0176**	0.0052	0.0074	0.0278
Education				
HS or < (Reference)	–	–	–	–
Some College	-0.0556	0.2008	-0.4491	0.3380
BA+	-0.0433	0.1982	-0.4317	0.3451
Married/Cohabiting (Yes=1, No=0)	0.0865	0.1577	-0.2226	0.3955
Kids in Household (Yes=1, No=0)	0.1324	0.1787	-0.2180	0.4827
Party				
Democrat (Reference)	–	–	–	–
Republican	0.6904**	0.2002	0.2979	1.0829
Independent/Other	0.5555**	0.1950	0.1733	0.9376
Political Ideology				
Very Conservative	1.5310***	0.6327	-3.1319	-0.6518
Conservative	1.1016***	0.2178	-0.7104	0.1433
Moderate (Reference)	–	–	–	–
Liberal	-0.2836	0.1759	0.7568	1.4464
Very Liberal	-1.8919**	0.3078	0.9277	2.1343
Religion (Yes=1, None=0)	0.9390***	0.2531	0.4430	1.4351
Born Again Christian (Yes=1, No=0)	0.7230***	0.1683	0.3932	1.0528
Know LGB Person (Yes=1, No=0)	-0.7092***	0.1447	-0.9929	-0.4256
Intercept	-1.3696***	0.3569	-2.0691	-0.6700
Pseudo R²	0.2388			
n	1177			

Note. ^aCoded as Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table F.5: Logistic regression predicting views about allowing gay and lesbian couples to adopt children^a by cover design treatment (no cover image treatment as base outcome) and respondent characteristics.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image (Reference)	–	–	–	–
Default	-0.0703	0.1803	-0.4237	0.2831
Inclusive	0.2209	0.1766	-0.1254	0.5671
Sex (Male=1, Female=0)	-0.4154**	0.1511	-0.7114	-0.1193
Age (Mean Centered)	-0.0363***	0.0057	-0.0475	-0.0251
Education				
HS or < (Reference)	–	–	–	–
Some College	0.4920*	0.2091	0.0821	0.9019
BA+	0.9328***	0.2078	0.5255	1.3400
Married/Cohabiting (Yes=1, No=0)	-0.3436*	0.1666	-0.6701	-0.0171
Kids in Household (Yes=1, No=0)	-0.2728	0.1884	-0.6421	0.0965
Party				
Democrat (Reference)	–	–	–	–
Republican	-0.6263**	0.2125	-1.0428	-0.2097
Independent/Other	-0.4624*	0.2111	-0.8761	-0.0486
Political Ideology				
Very Conservative	-1.9656***	0.6022	0.2822	2.6429
Conservative	-0.8144***	0.2481	-0.0307	0.9419
Moderate (Reference)	–	–	–	–
Liberal	0.4556 ⁺	0.1793	-1.1657	-0.4630
Very Liberal	1.4625*	0.3272	-2.6069	-1.3243
Religion (Yes=1, None=0)	-0.5931*	0.2748	-1.1317	-0.0545
Born Again Christian (Yes=1, No=0)	-1.2205***	0.1741	-1.5618	-0.8792
Know LGB Person (Yes=1, No=0)	1.0212***	0.1511	0.7250	1.3173
Intercept	1.0955**	0.3746	0.3614	1.8296
Pseudo R²	0.3006			
n	1187			

Note. ^aCoded as Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table F.6: Logistic regression model predicting views about protections for gay men and lesbians from housing discrimination^a by cover design treatment (no cover image treatment as base outcome) and respondent characteristics.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image (Reference)	–	–	–	–
Default	0.3195 ⁺	0.1757	-0.0247	0.6638
Inclusive	0.0736	0.1670	-0.2538	0.4009
Sex (Male=1, Female=0)	-0.3123*	0.1453	-0.5971	-0.0276
Age (Mean Centered)	-0.0164**	0.0054	-0.0269	-0.0058
Education				
HS or < (Reference)	–	–	–	–
Some College	0.2588	0.1917	-0.1170	0.6347
BA+	0.5741**	0.1904	0.2010	0.9472
Married/Cohabiting (Yes=1, No=0)	-0.2988 ⁺	0.1635	-0.6193	0.0216
Kids in Household (Yes=1, No=0)	-0.1402	0.1865	-0.5057	0.2253
Party				
Democrat (Reference)	–	–	–	–
Republican	-0.5427*	0.2134	-0.9609	-0.1245
Independent/Other	-0.3020	0.2173	-0.7278	0.1239
Political Ideology				
Very Conservative	-1.0083***	0.6355	-0.2869	2.2043
Conservative	-0.2726	0.2571	-0.4876	0.5204
Moderate (Reference)	–	–	–	–
Liberal	0.0164	0.1780	-0.6215	0.0764
Very Liberal	0.9587	0.2497	-1.4977	-0.5189
Religion (Yes=1, None=0)	-0.4345	0.2916	-1.0060	0.1370
Born Again Christian (Yes=1, No=0)	-0.7200***	0.1529	-1.0197	-0.4203
Know LGB Person (Yes=1, No=0)	0.7454***	0.1524	0.4468	1.0441
Intercept	1.7200***	0.3893	0.9570	2.4831
Pseudo R²			0.1380	
n			1196	

Note. ^aCoded as Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table F.7: Logistic regression model predicting views about protections for gay men and lesbians from job discrimination^a by cover design treatment (no cover image treatment as base outcome) and respondent characteristics.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image (Reference)	–	–	–	–
Default	0.2662	0.1837	-0.0938	0.6262
Inclusive	-0.0755	0.1720	-0.4127	0.2617
Sex (Male=1, Female=0)	-0.3808*	0.1504	-0.6755	-0.0860
Age (Mean Centered)	-0.0172**	0.0056	-0.0282	-0.0062
Education				
HS or < (Reference)	–	–	–	–
Some College	0.4040*	0.1969	0.0180	0.7899
BA+	0.6209	0.1943	0.2401	1.0017
Married/Cohabiting (Yes=1, No=0)	-0.3911	0.1719	-0.7280	-0.0542
Kids in Household (Yes=1, No=0)	-0.2658	0.1924	-0.6429	0.1113
Party				
Democrat (Reference)	–	–	–	–
Republican	-0.5198*	0.2239	-0.9586	-0.0809
Independent/Other	-0.3578	0.2278	-0.8043	0.0886
Political Ideology				
Very Conservative	-1.1032***	0.6338	-0.4356	2.0489
Conservative	-0.2147	0.2752	-0.4056	0.6733
Moderate (Reference)	–	–	–	–
Liberal	0.1339	0.1850	-0.5773	0.1478
Very Liberal	0.8066	0.2516	-1.5963	-0.6101
Religion (Yes=1, None=0)	-0.3642	0.2999	-0.9519	0.2236
Born Again Christian (Yes=1, No=0)	-0.6692***	0.1570	-0.9769	-0.3615
Know LGB Person (Yes=1, No=0)	0.5823***	0.1578	0.2730	0.8916
Intercept	2.0127***	0.4036	1.2216	2.8038
Pseudo R²			0.1328	
n			1196	

Note. ^aCoded as Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table F.8: OLS regression model predicting general feeling toward gay men and lesbians^a by cover design treatment (default treatment as base outcome) and respondent characteristics.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image	0.0391	0.0661	-0.0906	0.1688
Default (Reference)	–			
Inclusive	-0.0089	0.0661	-0.1387	0.1208
Sex (Male=1, Female=0)	0.2899***			
Age (Mean Centered)	0.0125***	0.0555	0.1809	0.3989
Education		0.0020	0.0087	0.0163
HS or < (Reference)	–			
Some College	-0.0728			
BA+	-0.3706***	0.0768	-0.2236	0.0779
Married/Cohabiting (Yes=1, No=0)	0.1019 ⁺	0.0749	-0.5175	-0.2237
Kids in Household (Yes=1, No=0)	0.0543	0.0601	-0.0160	0.2199
Party		0.0678	-0.0786	0.1873
Democrat (Reference)	–			
Republican	0.2381***			
Independent/Other	0.1572*	0.0795	0.0822	0.3940
Political Ideology		0.0763	0.0076	0.3068
Very Conservative	0.6382***			
Conservative	0.2827***	0.1521	-0.8255	-0.2287
Moderate (Reference)	–	0.0866	-0.3915	-0.0515
Liberal	-0.2215**			
Very Liberal	-0.5271***	0.0704	0.1445	0.4208
Religion (Yes=1, None=0)	0.0371	0.1045	0.4332	0.8432
Born Again Christian (Yes=1, No=0)	0.4470***	0.0881	-0.1358	0.2099
Know LGB Person (Yes=1, No=0)	-0.4461***	0.0625	0.3244	0.5696
Intercept	2.7271***	0.0566	-0.5571	-0.3350
R²	0.3494			
n	1213			

Note. ^aCoded as Very Favorable=1, Favorable=2, Neither favorable nor unfavorable=3, Unfavorable=4, Very unfavorable=5. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table F.9: OLS regression model predicting general feeling toward gay men and lesbians^a by respondents characteristics and cover design treatment.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image	0.141	0.134	-0.121	0.403
Default (Reference)	–	–	–	–
Inclusive	-0.015	0.135	-0.280	0.249
Sex (Male=1, Female=0)	0.569***	0.114	0.346	0.792
Age (Mean Centered)	0.026***	0.004	0.018	0.034
Education				
HS or < (Reference)	–	–	–	–
Some College	-0.080	0.157	-0.386	0.227
BA+	-0.692***	0.154	-0.994	-0.390
Married/Cohabiting (Yes=1, No=0)	0.186	0.122	-0.054	0.425
Kids in Household (Yes=1, No=0)	0.138	0.137	-0.130	0.407
Party				
Democrat (Reference)	–	–	–	–
Republican	0.520***	0.161	0.206	0.835
Independent/Other	0.378*	0.154	0.076	0.679
Political Ideology				
Very Liberal	-1.422***	0.321	-2.051	-0.792
Liberal	-0.600***	0.178	-0.949	-0.250
Moderate (Reference)	–	–	–	–
Conservative	0.555***	0.141	0.277	0.832
Very Conservative	1.278***	0.220	0.847	1.710
Religion (Yes=1, None=0)	0.011	0.178	-0.337	0.359
Born Again Christian (Yes=1, No=0)	0.871***	0.129	0.618	1.124
Know LGB Person (Yes=1, No=0)	-0.898***	0.118	-1.128	-0.667
Cut 1	-2.435	0.280	-2.984	-1.886
Cut 2	-0.476	0.266	-0.998	0.046
Cut 3	1.883	0.272	1.349	2.416
Cut 4	2.911	0.281	2.360	3.461
R²/Pseudo R²			0.1488	
n			1213	

Note. ^aCoded as Very Favorable=1, Favorable=2, Neither favorable nor unfavorable=3, Unfavorable=4, Very unfavorable=5. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table F.10: Multinomial regression model predicting views about same-sex marriage by cover design treatment (default treatment as base outcome) and respondents characteristics.

	Favor				Civil Unions Only			
	Coefficient	Standard Error	95% Confidence Interval		Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound			Lower Bound	Upper Bound
Cover Design								
No Cover Image	0.2134	0.2156	-0.2091	0.6358	0.1389	0.2014	-0.2559	0.5337
Default (Reference)	–	–	–	–	–	–	–	–
Inclusive	0.5135*	0.2180	0.0862	0.9408	0.0120	0.2092	-0.3980	0.4219
Sex (Male=1, Female=0)	-0.4502**	0.1813	-0.8056	-0.0948	-0.2890 ⁺	0.1734	-0.6289	0.0508
Age (Mean Centered)	-0.0439***	0.0069	-0.0573	-0.0304	-0.0123 ⁺	0.0063	-0.0247	0.0001
Education								
HS or < (Reference)	–	–	–	–	–	–	–	–
Some College	0.3531	0.2475	-0.1320	0.8383	0.6313**	0.2539	0.1336	1.1289
BA+	0.6793**	0.2468	0.1956	1.1631	1.1953***	0.2470	0.7111	1.6795
Married/Cohabiting (Yes=1, No=0)	-0.5498**	0.1987	-0.9393	-0.1602	-0.5815**	0.1889	-0.9517	-0.2113
Kids in Household (Yes=1, No=0)	-0.3771 ⁺	0.2224	-0.8131	0.0588	-0.1495	0.2180	-0.5768	0.2779
Party								
Democrat (Reference)	–	–	–	–	–	–	–	–
Republican	-0.7959***	0.2476	-1.2812	-0.3107	-0.5213*	0.2551	-1.0213	-0.0213
Independent/Other	-0.4444 ⁺	0.2418	-0.9182	0.0295	-0.0872	0.2595	-0.5959	0.4215

Table F.10 Continued...

Political Ideology									
Very Conservative	-2.5990***	0.6030	0.0719	2.4357	-0.7284*	0.7936	-1.5886	1.5222	
Conservative	-1.3656***	0.2775	0.1816	1.2694	-0.0333	0.3568	-1.1839	0.2147	
Moderate (Reference)	–				–	–	–	–	
Liberal	0.7255**	0.2251	-1.8069	-0.9243	-0.4846	0.2061	-0.4372	0.3706	
Very Liberal	0.6030*	0.5057	-3.5901	-1.6079	-0.0332	0.3183	-1.3522	-0.1046	
Religion (Yes=1, None=0)	-1.2938***	0.3331	-1.9467	-0.6409	-0.2990	0.3937	-1.0706	0.4727	
Born Again Christian (Yes=1, No=0)	-1.6321***	0.2233	-2.0697	-1.1945	-0.8395***	0.1896	-1.2110	-0.4679	
Know LGB Person (Yes=1, No=0)	1.4325***	0.1812	1.0774	1.7876	0.6928***	0.1769	0.3460	1.0396	
Intercept	1.5739***	0.4445	0.7026	2.4451	-0.2257	0.5035	-1.2126	0.7611	
Pseudo R²	0.2719								
n	1201								

Note. ^aCoded as Favor=1, Favor Civil Unions Only=2, Oppose=3; Oppose is the reference category. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table F.11: Logistic regression predicting views about DOMA^a by cover design treatment (default treatment as base outcome) and respondent characteristics.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image	0.0816	0.1738	-0.2590	0.4221
Default (Reference)	–	–	–	–
Inclusive	-0.3276 ⁺	0.1740	-0.6687	0.0136
Sex (Male=1, Female=0)	0.3133*	0.1459	0.0272	0.5993
Age (Mean Centered)	0.0176***	0.0052	0.0074	0.0278
Education				
HS or < (Reference)	–	–	–	–
Some College	-0.0556	0.2008	-0.4491	0.3380
BA+	-0.0433	0.1982	-0.4317	0.3451
Married/Cohabiting (Yes=1, No=0)	0.0865	0.1577	-0.2226	0.3955
Kids in Household (Yes=1, No=0)	0.1324	0.1787	-0.2180	0.4827
Party				
Democrat (Reference)	–	–	–	–
Republican	0.6904***	0.2002	0.2979	1.0829
Independent/Other	0.5555**	0.1950	0.1733	0.9376
Political Ideology				
Very Conservative	1.5310***	0.6327	-3.1319	-0.6518
Conservative	1.1016***	0.2178	-0.7104	0.1433
Moderate (Reference)	–	–	–	–
Liberal	-0.2836	0.1759	0.7568	1.4464
Very Liberal	-1.8919**	0.3078	0.9277	2.1343
Religion (Yes=1, None=0)	0.9390***	0.2531	0.4430	1.4351
Born Again Christian (Yes=1, No=0)	0.7230***	0.1683	0.3932	1.0528
Know LGB Person (Yes=1, No=0)	-0.7092***	0.1447	-0.9929	-0.4256
Intercept	-1.4511***	0.3554	-2.1477	-0.7546
Pseudo R ²	0.2388			
n	1177			

Note. ^aCoded Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table F.12: Logistic regression predicting views about allowing gay and lesbian couples to adopt children^a by cover design treatment (default treatment as base outcome) and respondent characteristics.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image	0.0703	0.1803	-0.2831	0.4237
Default (Reference)	–	–	–	–
Inclusive	0.2912	0.1820	-0.0655	0.6479
Sex (Male=1, Female=0)	-0.4154**	0.1511	-0.7114	-0.1193
Age (Mean Centered)	-0.0363***	0.0057	-0.0475	-0.0251
Education				
HS or < (Reference)	–	–	–	–
Some College	0.4920*	0.2091	0.0821	0.9019
BA+	0.9328***	0.2078	0.5255	1.3400
Married/Cohabiting (Yes=1, No=0)	-0.3436*	0.1666	-0.6701	-0.0171
Kids in Household (Yes=1, No=0)	-0.2728	0.1884	-0.6421	0.0965
Party				
Democrat (Reference)	–	–	–	–
Republican	-0.6263**	0.2125	-1.0428	-0.2097
Independent/Other	-0.4624*	0.2111	-0.8761	-0.0486
Political Ideology				
Very Conservative	-1.9656***	0.6022	0.2822	2.6429
Conservative	-0.8144***	0.2481	-0.0307	0.9419
Moderate (Reference)	–	–	–	–
Liberal	0.4556 ⁺	0.1793	-1.1657	-0.4630
Very Liberal	1.4625*	0.3272	-2.6069	-1.3243
Religion (Yes=1, None=0)	-0.5931*	0.2748	-1.1317	-0.0545
Born Again Christian (Yes=1, No=0)	-1.2205***	0.1741	-1.5618	-0.8792
Know LGB Person (Yes=1, No=0)	1.0212***	0.1511	0.7250	1.3173
Intercept	1.0252**	0.3716	0.2969	1.7534
Pseudo R²	0.3006			
n	1187			

Note. ^aCoded as Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table F.13: Logistic regression model predicting views about protections for gay men and lesbians from housing discrimination^a by cover design treatment (default treatment as base outcome) and respondent characteristics.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image	-0.3195 ⁺	0.1757	-0.6638	0.0247
Default (Reference)	–	–	–	–
Inclusive	-0.2460	0.1760	-0.5909	0.0990
Sex (Male=1, Female=0)	-0.3123*	0.1453	-0.5971	-0.0276
Age (Mean Centered)	-0.0164**	0.0054	-0.0269	-0.0058
Education				
HS or < (Reference)	–	–	–	–
Some College	0.2588	0.1917	-0.1170	0.6347
BA+	0.5741**	0.1904	0.2010	0.9472
Married/Cohabiting (Yes=1, No=0)	-0.2988 ⁺	0.1635	-0.6193	0.0216
Kids in Household (Yes=1, No=0)	-0.1402	0.1865	-0.5057	0.2253
Party				
Democrat (Reference)	–	–	–	–
Republican	-0.5427**	0.2134	-0.9609	-0.1245
Independent/Other	-0.3020	0.2173	-0.7278	0.1239
Political Ideology				
Very Conservative	-1.0083***	0.6355	-0.2869	2.2043
Conservative	-0.2726	0.2571	-0.4876	0.5204
Moderate (Reference)	–	–	–	–
Liberal	0.0164	0.1780	-0.6215	0.0764
Very Liberal	0.9587	0.2497	-1.4977	-0.5189
Religion (Yes=1, None=0)	-0.4345	0.2916	-1.0060	0.1370
Born Again Christian (Yes=1, No=0)	-0.7200***	0.1529	-1.0197	-0.4203
Know LGB Person (Yes=1, No=0)	0.7454***	0.1524	0.4468	1.0441
Intercept	2.0395***	0.3915	1.2722	2.8069
Pseudo R²	0.1380			
n	1196			

Note. ^aCoded as Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table F.14: Logistic regression model predicting views about protections for gay men and lesbians from job discrimination^a by cover design treatment (default treatment as base outcome) and respondent characteristics.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image	-0.2662	0.1837	-0.6262	0.0938
Default (Reference)	–	–	–	–
Inclusive	-0.3417 ⁺	0.1819	-0.6982	0.0148
Sex (Male=1, Female=0)	-0.3808*	0.1504	-0.6755	-0.0860
Age (Mean Centered)	-0.0172**	0.0056	-0.0282	-0.0062
Education				
HS or < (Reference)	–	–	–	–
Some College	0.4040*	0.1969	0.0180	0.7899
BA+	0.6209***	0.1943	0.2401	1.0017
Married/Cohabiting (Yes=1, No=0)	-0.3911*	0.1719	-0.7280	-0.0542
Kids in Household (Yes=1, No=0)	-0.2658	0.1924	-0.6429	0.1113
Party				
Democrat (Reference)	–	–	–	–
Republican	-0.5198*	0.2239	-0.9586	-0.0809
Independent/Other	-0.3578	0.2278	-0.8043	0.0886
Political Ideology				
Very Conservative	-1.1032***	0.6338	-0.4356	2.0489
Conservative	-0.2147	0.2752	-0.4056	0.6733
Moderate (Reference)	–	–	–	–
Liberal	0.1339	0.1850	-0.5773	0.1478
Very Liberal	0.8066	0.2516	-1.5963	-0.6101
Religion (Yes=1, None=0)	-0.3642	0.2999	-0.9519	0.2236
Born Again Christian (Yes=1, No=0)	-0.6695***	0.1570	-0.9769	-0.3615
Know LGB Person (Yes=1, No=0)	0.5823***	0.1578	0.2730	0.8916
Intercept	2.2789***	0.4053	1.4846	3.0732
Pseudo R²			0.1328	
n			1196	

Note. ^aCoded as Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

**APPENDIX G: RESULTS OF REGRESSION MODELS TO EXAMINE VISUAL
CONTEXT EFFECTS BY POLITICAL PARTY AFFILIATION**

Table G.1: OLS regression model predicting general feeling toward gay men and lesbians^a by cover design treatment (no cover image treatment as base outcome) and respondent characteristics among Democrats and Independents.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image (Reference)	–	–	–	–
Default	0.0386	0.0878	-0.1338	0.2110
Inclusive	-0.0056	0.0853	-0.1731	0.1619
Sex (Male=1, Female=0)	0.2980***	0.0729	0.1548	0.4412
Age (Mean Centered)	0.0143***	0.0026	0.0093	0.0194
Education				
HS or < (Reference)	–	–	–	–
Some College	-0.1141	0.1013	-0.3130	0.0848
BA+	-0.3803***	0.0984	-0.5735	-0.1872
Married/Cohabiting (Yes=1, No=0)	0.0532	0.0777	-0.0995	0.2058
Kids in Household (Yes=1, No=0)	0.0952	0.0868	-0.0752	0.2655
Political Ideology				
Very Liberal	-0.6591***	0.1609	-0.9751	-0.3431
Liberal	-0.2729**	0.0894	-0.4484	-0.0974
Moderate (Reference)	–	–	–	–
Conservative	0.3886***	0.0991	0.1939	0.5832
Very Conservative	0.5703**	0.1914	0.1945	0.9461
Religion (Yes=1, None=0)	-0.0077	0.0968	-0.1978	0.1825
Born Again Christian (Yes=1, No=0)	0.4378***	0.0888	0.2635	0.6121
Know LGB Person (Yes=1, No=0)	-0.4897***	0.0756	-0.6381	-0.3413
Intercept	2.9106***	0.1500	2.6161	3.2051
R²	0.3533			
n	686			

Note. ^aCoded as Very Favorable=1, Favorable=2, Neither favorable nor unfavorable=3, Unfavorable=4, Very unfavorable=5. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.2: Ordinal regression model predicting general feeling toward gay men and lesbians^a by cover design treatment (no cover image treatment as base outcome) and respondent characteristics among Democrats and Independents.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image (Reference)	–	–	–	–
Default	0.022	0.178	-0.327	0.371
Inclusive	-0.122	0.175	-0.464	0.220
Sex (Male=1, Female=0)	0.587***	0.150	0.294	0.880
Age (Mean Centered)	0.030***	0.005	0.019	0.040
Education				
HS or < (Reference)	–	–	–	–
Some College	-0.166	0.206	-0.571	0.239
BA+	-0.699***	0.203	-1.097	-0.301
Married/Cohabiting (Yes=1, No=0)	0.113	0.158	-0.197	0.423
Kids in Household (Yes=1, No=0)	0.213	0.177	-0.134	0.560
Political Ideology				
Very Liberal	-1.665***	0.342	-2.336	-0.993
Liberal	-0.690***	0.186	-1.054	-0.326
Moderate (Reference)	–	–	–	–
Conservative	0.753***	0.201	0.359	1.147
Very Conservative	1.240**	0.422	0.413	2.067
Religion (Yes=1, None=0)	-0.081	0.196	-0.465	0.303
Born Again Christian (Yes=1, No=0)	0.881***	0.184	0.520	1.241
Know LGB Person (Yes=1, No=0)	-0.982***	0.159	-1.294	-0.670
Cut 1	-2.825	0.330	-3.471	-2.178
Cut 2	-0.919	0.310	-1.526	-0.312
Cut 3	1.396	0.313	0.782	2.010
Cut 4	2.448	0.330	1.802	3.094
Pseudo R²			0.1511	
n			686	

Note. ^aCoded as Very Favorable=1, Favorable=2, Neither favorable nor unfavorable=3, Unfavorable=4, Very unfavorable=5. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.3: Multinomial regression model predicting views about same-sex marriage by cover design treatment (no cover image treatment as base outcome) and respondent characteristics among Democrats and Independents.

	Favor				Civil Unions Only			
	Coefficient	Standard Error	95% Confidence Interval		Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound			Lower Bound	Upper Bound
Cover Design								
No Cover Image (Reference)	–	–	–	–	–	–	–	–
Default	-0.3643	0.2769	-0.9071	0.1785	-0.3156	0.2883	-0.8806	0.2494
Inclusive	0.2751	0.2797	-0.2732	0.8234	-0.2366	0.2956	-0.8159	0.3428
Sex (Male=1, Female=0)	-0.5117	0.2339	-0.9702	-0.0532	-0.2679*	0.2494	-0.7567	0.2210
Age (Mean Centered)	-0.0439***	0.0091	-0.0617	-0.0260	-0.0135***	0.0095	-0.0322	0.0052
Education								
HS or < (Reference)	–	–	–	–	–	–	–	–
Some College	0.4423	0.3095	-0.1644	1.0490	0.7470	0.3502	0.0606	1.4335
BA+	0.8277**	0.3106	0.2190	1.4364	1.4412	0.3436	0.7679	2.1146
Married/Cohabiting (Yes=1, No=0)	-0.3675	0.2542	-0.8657	0.1308	-0.3947	0.2678	-0.9197	0.1302
Kids in Household (Yes=1, No=0)	-0.2845	0.2946	-0.8619	0.2929	0.0768	0.3094	-0.5297	0.6832
Political Ideology								
Very Liberal	1.8193*	0.8196	0.2128	3.4258	0.4746	0.9748	-1.4359	2.3851
Liberal	0.9414***	0.2928	0.3676	1.5152	-0.6329	0.3917	-1.4007	0.1348
Moderate (Reference)	–	–	–	–	–	–	–	–
Conservative	-1.2454***	0.3230	-1.8785	-0.6123	-0.0922	0.2832	-0.6473	0.4629
Very Conservative	-2.7501*	1.0768	-4.8606	-0.6395	0.0800	0.4967	-0.8936	1.0536
Religion (Yes=1, None=0)	-1.1200**	0.3833	-1.8713	-0.3687	-0.2896	0.4560	-1.1833	0.6042
Born Again Christian (Yes=1, No=0)	-1.8140***	0.2928	-2.3880	-1.2400	-0.7286**	0.2743	-1.2662	-0.1911
Know LGB Person (Yes=1, No=0)	1.4689***	0.2401	0.9983	1.9396	0.7118**	0.2617	0.1988	1.2247
Intercept	1.1655*	0.5107	0.1646	2.1665	-0.4607	0.6046	-1.6457	0.7243
Pseudo R²	0.2644							
n	681							

Note. ^aCoded as Favor=1, Favor Civil Unions Only=2, Oppose=3; Oppose is the reference category. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.4: Logistic regression predicting views about DOMA^a by cover design treatment (no cover image treatment as base outcome) and respondent characteristics among Democrats and Independents.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image (Reference)	–	–	–	–
Default	-0.0520	0.2230	-0.4891	0.3851
Inclusive	-0.5529*	0.2250	-0.9940	-0.1119
Sex (Male=1, Female=0)	0.1654	0.1891	-0.2052	0.5361
Age (Mean Centered)	0.0237***	0.0069	0.0102	0.0373
Education				
HS or < (Reference)	–	–	–	–
Some College	0.1156	0.2577	-0.3896	0.6207
BA+	0.1624	0.2528	-0.3330	0.6578
Married/Cohabiting (Yes=1, No=0)	-0.2332	0.2031	-0.6314	0.1649
Kids in Household (Yes=1, No=0)	0.0903	0.2338	-0.3679	0.5485
Political Ideology				
Very Liberal	-2.1694**	0.7533	-3.6458	-0.6930
Liberal	-0.6292**	0.2295	-1.0790	-0.1794
Moderate (Reference)	–	–	–	–
Conservative	1.1511***	0.2536	0.6540	1.6482
Very Conservative	1.3294**	0.5095	0.3308	2.3280
Religion (Yes=1, None=0)	0.7754**	0.2904	0.2062	1.3446
Born Again Christian (Yes=1, No=0)	0.7474***	0.2254	0.3056	1.1891
Know LGB Person (Yes=1, No=0)	-0.7360***	0.1890	-1.1065	-0.3654
Intercept	-0.6487	0.4078	-1.4479	0.1505
Pseudo R²			0.2079	
n			669	

Note. ^aCoded as Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.5: Logistic regression predicting views about allowing gay and lesbian couples to adopt children^a by cover design treatment (no cover image treatment as base outcome) and respondent characteristics among Democrats and Independents.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image (Reference)	–	–	–	–
Default	-0.2335	0.2445	-0.7127	0.2456
Inclusive	0.2021	0.2458	-0.2797	0.6839
Sex (Male=1, Female=0)	-0.5922**	0.2066	-0.9971	-0.1873
Age (Mean Centered)	-0.0316***	0.0079	-0.0471	-0.0160
Education				
HS or < (Reference)	–	–	–	–
Some College	0.3962	0.2727	-0.1382	0.9307
BA+	0.9435***	0.2750	0.4045	1.4825
Married/Cohabiting (Yes=1, No=0)	-0.3071	0.2249	-0.7478	0.1337
Kids in Household (Yes=1, No=0)	-0.3211	0.2611	-0.8329	0.1906
Political Ideology				
Very Liberal	1.6717*	0.7888	0.1257	3.2177
Liberal	0.5753*	0.2651	0.0557	1.0949
Moderate (Reference)	–	–	–	–
Conservative	-0.9415***	0.2578	-1.4468	-0.4362
Very Conservative	-1.7555**	0.5556	-2.8446	-0.6665
Religion (Yes=1, None=0)	-0.7477**	0.3320	-1.3984	-0.0970
Born Again Christian (Yes=1, No=0)	-1.4850***	0.2466	-1.9682	-1.0017
Know LGB Person (Yes=1, No=0)	1.2178***	0.2132	0.8000	1.6356
Intercept	1.1214*	0.4496	0.2403	2.0025
Pseudo R²		0.3004		
n		677		

Note. ^aCoded as Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.6: Logistic regression model predicting views about protections for gay men and lesbians from housing discrimination^a by cover design treatment (no cover image treatment as base outcome) and respondent characteristics among Democrats and Independents.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image (Reference)	–	–	–	–
Default	0.1309	0.2551	-0.3691	0.6308
Inclusive	0.0678	0.2498	-0.4218	0.5575
Sex (Male=1, Female=0)	-0.4045 ⁺	0.2116	-0.8191	0.0101
Age (Mean Centered)	-0.0165*	0.0081	-0.0323	-0.0008
Education				
HS or < (Reference)	–	–	–	–
Some College	0.4703 ⁺	0.2747	-0.0680	1.0087
BA+	0.6059*	0.2717	0.0733	1.1384
Married/Cohabiting (Yes=1, No=0)	-0.5686*	0.2412	-1.0414	-0.0958
Kids in Household (Yes=1, No=0)	-0.0794	0.2683	-0.6052	0.4463
Political Ideology				
Very Liberal	0.9038	0.7619	-0.5894	2.3970
Liberal	0.0854	0.2846	-0.4724	0.6432
Moderate (Reference)	–	–	–	–
Conservative	-0.6201*	0.2548	-1.1195	-0.1208
Very Conservative	-1.6389***	0.4593	-2.5391	-0.7388
Religion (Yes=1, None=0)	-0.6013 ⁺	0.3634	-1.3135	0.1110
Born Again Christian (Yes=1, No=0)	-0.7827***	0.2315	-1.2364	-0.3289
Know LGB Person (Yes=1, No=0)	0.6796**	0.2253	0.2379	1.1213
Intercept	2.0581***	0.4956	1.0867	3.0295
Pseudo R²	681			
n	0.1507			

Note. ^aCoded as Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.7: Logistic regression model predicting views about protections for gay men and lesbians from job discrimination^a by cover design treatment (no cover image treatment as base outcome) and respondent characteristics among Democrats and Independents.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image (Reference)	–	–	–	–
Default	0.1895	0.2662	-0.3322	0.7112
Inclusive	-0.0068	0.2555	-0.5076	0.4941
Sex (Male=1, Female=0)	-0.4903*	0.2188	-0.9191	-0.0615
Age (Mean Centered)	-0.0146 ⁺	0.0082	-0.0307	0.0015
Education				
HS or < (Reference)	–	–	–	–
Some College	0.2975	0.2835	-0.2582	0.8531
BA+	0.4659 ⁺	0.2808	-0.0844	1.0163
Married/Cohabiting (Yes=1, No=0)	-0.4308 ⁺	0.2461	-0.9131	0.0514
Kids in Household (Yes=1, No=0)	-0.1472	0.2729	-0.6822	0.3877
Political Ideology				
Very Liberal	0.8394	0.7614	-0.6529	2.3317
Liberal	0.2387	0.3001	-0.3494	0.8268
Moderate (Reference)	–	–	–	–
Conservative	-0.4308	0.2626	-0.9456	0.0840
Very Conservative	-1.3398**	0.4498	-2.2215	-0.4582
Religion (Yes=1, None=0)	-0.4350	0.3631	-1.1466	0.2767
Born Again Christian (Yes=1, No=0)	-0.9049***	0.2349	-1.3653	-0.4444
Know LGB Person (Yes=1, No=0)	0.6404**	0.2342	0.1813	1.0994
Intercept	2.1225***	0.5034	1.1358	3.1092
Pseudo R²			0.1315	
n			681	

Note. ^aCoded as Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.8: OLS regression model predicting general feeling toward gay men and lesbians^a by cover design treatment (default treatment as base outcome) and respondent characteristics among Democrats and Independents.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image	-0.0386	0.0878	-0.2110	0.1338
Default (Reference)	–	–	–	–
Inclusive	-0.0442	0.0878	-0.2165	0.1282
Sex (Male=1, Female=0)	0.2980***	0.0729	0.1548	0.4412
Age (Mean Centered)	0.0143***	0.0026	0.0093	0.0194
Education				
HS or < (Reference)	–	–	–	–
Some College	-0.1141	0.1013	-0.3130	0.0848
BA+	-0.3803***	0.0984	-0.5735	-0.1872
Married/Cohabiting (Yes=1, No=0)	0.0532	0.0777	-0.0995	0.2058
Kids in Household (Yes=1, No=0)	0.0952	0.0868	-0.0752	0.2655
Political Ideology				
Very Liberal	-0.6591***	0.1609	-0.9751	-0.3431
Liberal	-0.2729**	0.0894	-0.4484	-0.0974
Moderate (Reference)	–	–	–	–
Conservative	0.3886***	0.0991	0.1939	0.5832
Very Conservative	0.5703**	0.1914	0.1945	0.9461
Religion (Yes=1, None=0)	-0.0077	0.0968	-0.1978	0.1825
Born Again Christian (Yes=1, No=0)	0.4378***	0.0888	0.2635	0.6121
Know LGB Person (Yes=1, No=0)	-0.4897***	0.0756	-0.6381	-0.3413
Intercept	2.9492***	0.1494	2.6558	3.2425
R²	0.3533			
n	686			

Note. ^aCoded as Very Favorable=1, Favorable=2, Neither favorable nor unfavorable=3, Unfavorable=4, Very unfavorable=5. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.9: Ordinal regression model predicting general feeling toward gay men and lesbians^a by respondents characteristics and cover design treatment among Democrats and Independents.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image	-0.022	0.178	-0.371	0.327
Default (Reference)				
Inclusive	-0.144	0.179	-0.494	0.206
Sex (Male=1, Female=0)	0.587***	0.150	0.294	0.880
Age (Mean Centered)	0.030***	0.005	0.019	0.040
Education				
HS or < (Reference)				
Some College	-0.166	0.206	-0.571	0.239
BA+	-0.699***	0.203	-1.097	-0.301
Married/Cohabiting (Yes=1, No=0)	0.113	0.158	-0.197	0.423
Kids in Household (Yes=1, No=0)	0.213	0.177	-0.134	0.560
Political Ideology				
Very Liberal	-1.665***	0.342	-2.336	-0.993
Liberal	-0.690***	0.186	-1.054	-0.326
Moderate (Reference)				
Conservative	0.753***	0.201	0.359	1.147
Very Conservative	1.240***	0.422	0.413	2.067
Religion (Yes=1, None=0)	-0.081	0.196	-0.465	0.303
Born Again Christian (Yes=1, No=0)	0.881***	0.184	0.520	1.241
Know LGB Person (Yes=1, No=0)	-0.982***	0.159	-1.294	-0.670
Cut 1	-2.847	0.329	-3.491	-2.202
Cut 2	-0.941	0.309	-1.546	-0.336
Cut 3	1.374	0.314	0.759	1.989
Cut 4	2.426	0.330	1.779	3.072
Pseudo R²			0.1511	
n			686	

Note. ^aCoded as Very Favorable=1, Favorable=2, Neither favorable nor unfavorable=3, Unfavorable=4, Very unfavorable=5. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.10: Multinomial regression model predicting views about same-sex marriage by cover design treatment (default treatment as base outcome) and respondents characteristics among Democrats and Independents.

	Favor				Civil Unions Only			
	Coefficient	Standard Error	95% Confidence Interval		Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound			Lower Bound	Upper Bound
Cover Design								
No Cover Image Default (Reference)	0.3643	0.2769	-0.1785	0.9071	0.3156	0.2883	-0.2494	0.8806
Inclusive	0.6394*	0.2861	0.0786	1.2003	0.0791	0.3075	-0.5236	0.6817
Sex (Male=1, Female=0)	-0.5117*	0.2339	-0.9702	-0.0532	-0.2679	0.2494	-0.7567	0.2210
Age (Mean Centered)	-0.0439***	0.0091	-0.0617	-0.0260	-0.0135	0.0095	-0.0322	0.0052
Education								
HS or < (Reference)	–	–	–	–	–	–	–	–
Some College	0.4423	0.3095	-0.1644	1.0490	0.7470*	0.3502	0.0606	1.4335
BA+	0.8277**	0.3106	0.2190	1.4364	1.4412	0.3436	0.7679	2.1146
Married/Cohabiting (Yes=1, No=0)	-0.3675	0.2542	-0.8657	0.1308	-0.3947	0.2678	-0.9197	0.1302
Kids in Household (Yes=1, No=0)	-0.2845	0.2946	-0.8619	0.2929	0.0768	0.3094	-0.5297	0.6832
Political Ideology								
Very Liberal	1.8193*	0.8196	0.2128	3.4258	0.4746	0.9748	-1.4359	2.3851
Liberal	0.9414***	0.2928	0.3676	1.5152	-0.6329	0.3917	-1.4007	0.1348
Moderate (Reference)	–	–	–	–	–	–	–	–
Conservative	-1.2454***	0.3230	-1.8785	-0.6123	-0.0922	0.2832	-0.6473	0.4629
Very Conservative	-2.7501*	1.0768	-4.8606	-0.6395	0.0800	0.4967	-0.8936	1.0536
Religion (Yes=1, None=0)	-1.1200**	0.3833	-1.8713	-0.3687	-0.2896	0.4560	-1.1833	0.6042
Born Again Christian (Yes=1, No=0)	-1.8140***	0.2928	-2.3880	-1.2400	-0.7286**	0.2743	-1.2662	-0.1911
Know LGB Person (Yes=1, No=0)	1.4689***	0.2401	0.9983	1.9396	0.7118**	0.2617	0.1988	1.2247
Intercept	0.8012	0.5028	-0.1842	1.7866	-0.7764	0.5991	-1.9506	0.3979
Pseudo R²	0.2644							
n	681							

Note. ^aCoded as Favor=1, Favor Civil Unions Only=2, Oppose=3; Oppose is the reference category. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.11: Logistic regression predicting views about DOMA^a by cover design treatment (default treatment as base outcome) and respondent characteristics among Democrats and Independents.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image	0.0520	0.2230	-0.3851	0.4891
Default (Reference)	–	–	–	–
Inclusive	-0.5009*	0.2306	-0.9529	-0.0490
Sex (Male=1, Female=0)	0.1654	0.1891	-0.2052	0.5361
Age (Mean Centered)	0.0237***	0.0069	0.0102	0.0373
Education				
HS or < (Reference)	–	–	–	–
Some College	0.1156	0.2577	-0.3896	0.6207
BA+	0.1624	0.2528	-0.3330	0.6578
Married/Cohabiting (Yes=1, No=0)	-0.2332	0.2031	-0.6314	0.1649
Kids in Household (Yes=1, No=0)	0.0903	0.2338	-0.3679	0.5485
Political Ideology				
Very Liberal	-2.1694**	0.7533	-3.6458	-0.6930
Liberal	-0.6292**	0.2295	-1.0790	-0.1794
Moderate (Reference)	–	–	–	–
Conservative	1.1511***	0.2536	0.6540	1.6482
Very Conservative	1.3294**	0.5095	0.3308	2.3280
Religion (Yes=1, None=0)	0.7754**	0.2904	0.2062	1.3446
Born Again Christian (Yes=1, No=0)	0.7474***	0.2254	0.3056	1.1891
Know LGB Person (Yes=1, No=0)	-0.7360***	0.1890	-1.1065	-0.3654
Intercept	-0.7007 ⁺	0.4051	-1.4948	0.0934
Pseudo R²			0.2079	
n			669	

Note. ^aCoded Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.12: Logistic regression predicting views about allowing gay and lesbian couples to adopt children^a by cover design treatment (default treatment as base outcome) and respondent characteristics among Democrats and Independents.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image	0.2335	0.2445	-0.2456	0.7127
Default (Reference)	–	–	–	–
Inclusive	0.4356 ⁺	0.2533	-0.0608	0.9321
Sex (Male=1, Female=0)	-0.5922**	0.2066	-0.9971	-0.1873
Age (Mean Centered)	-0.0316***	0.0079	-0.0471	-0.0160
Education				
HS or < (Reference)	–	–	–	–
Some College	0.3962	0.2727	-0.1382	0.9307
BA+	0.9435***	0.2750	0.4045	1.4825
Married/Cohabiting (Yes=1, No=0)	-0.3071	0.2249	-0.7478	0.1337
Kids in Household (Yes=1, No=0)	-0.3211	0.2611	-0.8329	0.1906
Political Ideology				
Very Liberal	1.6717*	0.7888	0.1257	3.2177
Liberal	0.5753*	0.2651	0.0557	1.0949
Moderate (Reference)	–	–	–	–
Conservative	-0.9415***	0.2578	-1.4468	-0.4362
Very Conservative	-1.7555**	0.5556	-2.8446	-0.6665
Religion (Yes=1, None=0)	-0.7477*	0.3320	-1.3984	-0.0970
Born Again Christian (Yes=1, No=0)	-1.4850***	0.2466	-1.9682	-1.0017
Know LGB Person (Yes=1, No=0)	1.2178***	0.2132	0.8000	1.6356
Intercept	0.8878*	0.4406	0.0243	1.7514
Pseudo R²	0.3004			
n	677			

Note. ^aCoded as Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.13: Logistic regression model predicting views about protections for gay men and lesbians from housing discrimination^a by cover design treatment (default treatment as base outcome) and respondent characteristics among Democrats and Independents.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image	-0.1309	0.2551	-0.6308	0.3691
Default (Reference)	–	–	–	–
Inclusive	-0.0630	0.2596	-0.5719	0.4458
Sex (Male=1, Female=0)	-0.4045 ⁺	0.2116	-0.8191	0.0101
Age (Mean Centered)	-0.0165*	0.0081	-0.0323	-0.0008
Education				
HS or < (Reference)	–	–	–	–
Some College	0.4703 ⁺	0.2747	-0.0680	1.0087
BA+	0.6059*	0.2717	0.0733	1.1384
Married/Cohabiting (Yes=1, No=0)	-0.5686*	0.2412	-1.0414	-0.0958
Kids in Household (Yes=1, No=0)	-0.0794	0.2683	-0.6052	0.4463
Political Ideology				
Very Liberal	0.9038	0.7619	-0.5894	2.3970
Liberal	0.0854	0.2846	-0.4724	0.6432
Moderate (Reference)	–	–	–	–
Conservative	-0.6201*	0.2548	-1.1195	-0.1208
Very Conservative	-1.6389***	0.4593	-2.5391	-0.7388
Religion (Yes=1, None=0)	-0.6013 ⁺	0.3634	-1.3135	0.1110
Born Again Christian (Yes=1, No=0)	-0.7827***	0.2315	-1.2364	-0.3289
Know LGB Person (Yes=1, No=0)	0.6796**	0.2253	0.2379	1.1213
Intercept	2.1890***	0.4933	1.2221	3.1559
Pseudo R²	0.1507			
n	681			

Note. ^aCoded as Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.14: Logistic regression model predicting views about protections for gay men and lesbians from job discrimination^a by cover design treatment (default treatment as base outcome) and respondent characteristics among Democrats and Independents.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image	-0.1895	0.2662	-0.7112	0.3322
Default (Reference)	–	–	–	–
Inclusive	-0.1963	0.2682	-0.7219	0.3293
Sex (Male=1, Female=0)	-0.4903*	0.2188	-0.9191	-0.0615
Age (Mean Centered)	-0.0146 ⁺	0.0082	-0.0307	0.0015
Education				
HS or < (Reference)	–	–	–	–
Some College	0.2975	0.2835	-0.2582	0.8531
BA+	0.4659 ⁺	0.2808	-0.0844	1.0163
Married/Cohabiting (Yes=1, No=0)	-0.4308 ⁺	0.2461	-0.9131	0.0514
Kids in Household (Yes=1, No=0)	-0.1472	0.2729	-0.6822	0.3877
Political Ideology				
Very Liberal	0.8394	0.7614	-0.6529	2.3317
Liberal	0.2387	0.3001	-0.3494	0.8268
Moderate (Reference)	–	–	–	–
Conservative	-0.4308	0.2626	-0.9456	0.0840
Very Conservative	-1.3398**	0.4498	-2.2215	-0.4582
Religion (Yes=1, None=0)	-0.4350	0.3631	-1.1466	0.2767
Born Again Christian (Yes=1, No=0)	-0.9049***	0.2349	-1.3653	-0.4444
Know LGB Person (Yes=1, No=0)	0.6404**	0.2342	0.1813	1.0994
Intercept	2.3120***	0.5011	1.3298	3.2942
Pseudo R²	0.1315			
n	681			

Note. ^aCoded as Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.15: OLS regression model predicting general feeling toward gay men and lesbians^a by cover design treatment (no cover image treatment as base outcome) and respondent characteristics among Republicans.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image (Reference)	–	–	–	–
Default	-0.1636	0.1015	-0.3629	0.0358
Inclusive	-0.0914	0.0989	-0.2856	0.1029
Sex (Male=1, Female=0)	0.3104***	0.0862	0.1410	0.4798
Age (Mean Centered)	0.0093**	0.0030	0.0034	0.0152
Education				
HS or < (Reference)	–	–	–	–
Some College	-0.0014	0.1184	-0.2340	0.2311
BA+	-0.2958*	0.1162	-0.5242	-0.0674
Married/Cohabiting (Yes=1, No=0)	0.1314	0.0974	-0.0598	0.3227
Kids in Household (Yes=1, No=0)	0.0078	0.1098	-0.2079	0.2235
Political Ideology				
Very Liberal	0.6268	0.4810	-0.3182	1.5719
Liberal	-0.1345	0.2774	-0.6795	0.4106
Moderate (Reference)	–	–	–	–
Conservative	0.2178*	0.1056	0.0102	0.4253
Very Conservative	0.6620***	0.1365	0.3939	0.9301
Religion (Yes=1, None=0)	-0.0275	0.2184	-0.4566	0.4015
Born Again Christian (Yes=1, No=0)	0.4422***	0.0893	0.2668	0.6177
Know LGB Person (Yes=1, No=0)	-0.3793***	0.0869	-0.5500	-0.2086
Intercept	3.0436***	0.2442	2.5639	3.5233
R²	0.2406			
n	527			

Note. ^aCoded as Very Favorable=1, Favorable=2, Neither favorable nor unfavorable=3, Unfavorable=4, Very unfavorable=5. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.16: Ordinal regression model predicting general feeling toward gay men and lesbians^a by cover design treatment (no cover image treatment as base outcome) and respondent characteristics among Republicans.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image (Reference)	–	–	–	–
Default	-0.419*	0.206	-0.823	-0.015
Inclusive	-0.152	0.198	-0.539	0.236
Sex (Male=1, Female=0)	0.615***	0.177	0.268	0.962
Age (Mean Centered)	0.019***	0.006	0.007	0.031
Education				
HS or < (Reference)	–	–	–	–
Some College	0.080	0.240	-0.390	0.550
BA+	-0.556*	0.236	-1.019	-0.093
Married/Cohabiting (Yes=1, No=0)	0.224	0.198	-0.165	0.612
Kids in Household (Yes=1, No=0)	0.052	0.220	-0.379	0.483
Political Ideology				
Very Liberal	1.313	1.008	-0.663	3.290
Liberal	-0.337	0.598	-1.509	0.835
Moderate (Reference)	–	–	–	–
Conservative	0.430*	0.211	0.017	0.843
Very Conservative	1.326***	0.279	0.779	1.873
Religion (Yes=1, None=0)	-0.231	0.447	-1.107	0.645
Born Again Christian (Yes=1, No=0)	0.844***	0.183	0.485	1.203
Know LGB Person (Yes=1, No=0)	-0.761***	0.177	-1.107	-0.414
Cut 1	-3.611	0.564	-4.716	-2.506
Cut 2	-1.340	0.509	-2.338	-0.343
Cut 3	1.087	0.506	0.095	2.080
Cut 4	2.094	0.514	1.087	3.101
Pseudo R²			0.0978	
n			527	

Note. ^aCoded as Very Favorable=1, Favorable=2, Neither favorable nor unfavorable=3, Unfavorable=4, Very unfavorable=5. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.17: Multinomial regression model predicting views about same-sex marriage by cover design treatment (no cover image treatment as base outcome) and respondent characteristics among Republicans.

	Favor				Civil Unions Only			
	Coefficient	Standard Error	95% Confidence Interval		Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound			Lower Bound	Upper Bound
Cover Design								
No Cover Image (Reference)	–	–	–	–	–	–	–	–
Default	0.0375	0.3545	-0.6574	0.7323	0.0377	0.2890	-0.5286	0.6041
Inclusive	0.2440	0.3412	-0.4249	0.9128	-0.0454	0.2842	-0.6025	0.5117
Sex (Male=1, Female=0)	-0.4651	0.2949	-1.0430	0.1128	-0.4006	0.2479	-0.8865	0.0854
Age (Mean Centered)	-0.0408***	0.0106	-0.0615	-0.0201	-0.0104	0.0085	-0.0271	0.0062
Education								
HS or < (Reference)	–	–	–	–	–	–	–	–
Some College	0.2241	0.4135	-0.5863	1.0345	0.5489**	0.3714	-0.1790	1.2768
BA+	0.4148	0.4184	-0.4052	1.2349	1.0160**	0.3587	0.3130	1.7191
Married/Cohabiting (Yes=1, No=0)	-0.7308*	0.3314	-1.3804	-0.0812	-0.7222	0.2737	-1.2587	-0.1857
Kids in Household (Yes=1, No=0)	-0.3815	0.3565	-1.0802	0.3171	-0.3759	0.3193	-1.0016	0.2499
Political Ideology								
Very Liberal	0.2600	1.2228	-2.1366	2.6565	-11.6336	427.7079	-849.9258	826.6586
Liberal	0.3250	0.8176	-1.2776	1.9275	0.7471	0.7915	-0.8043	2.2985
Moderate (Reference)	–	–	–	–	–	–	–	–
Conservative	-1.5549***	0.3211	-2.1842	-0.9256	0.0089	0.3213	-0.6210	0.6387
Very Conservative	-2.6496***	0.5906	-3.8072	-1.4920	-1.1192*	0.4551	-2.0111	-0.2272
Religion (Yes=1, None=0)	-1.4449*	0.6595	-2.7374	-0.1524	-0.0879	0.7969	-1.6499	1.4741
Born Again Christian (Yes=1, No=0)	-1.3052***	0.3540	-1.9990	-0.6114	-0.9796***	0.2691	-1.5071	-0.4522
Know LGB Person (Yes=1, No=0)	1.4743***	0.2974	0.8914	2.0571	0.6998**	0.2484	0.2130	1.1866
Intercept	1.4546 ⁺	0.7596	-0.0342	2.9434	-0.5464	0.8817	-2.2746	1.1818
Pseudo R²	0.1916							
n	520							

Note. ^aCoded as Favor=1, Favor Civil Unions Only=2, Oppose=3; Oppose is the reference category. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.18: Logistic regression predicting views about DOMA^a by cover design treatment (no cover image treatment as base outcome) and respondent characteristics among Republicans.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image (Reference)	–	–	–	–
Default	-0.2078	0.2759	-0.7485	0.3329
Inclusive	-0.1975	0.2685	-0.7238	0.3289
Sex (Male=1, Female=0)	0.6706**	0.2380	0.2042	1.1370
Age (Mean Centered)	0.0040	0.0080	-0.0116	0.0196
Education				
HS or < (Reference)	–	–	–	–
Some College	-0.3136	0.3269	-0.9544	0.3271
BA+	-0.2451	0.3270	-0.8860	0.3957
Married/Cohabiting (Yes=1, No=0)	0.4629 ⁺	0.2530	-0.0330	0.9587
Kids in Household (Yes=1, No=0)	0.1424	0.2902	-0.4264	0.7112
Political Ideology				
Very Liberal	-1.8937	1.1985	-4.2428	0.4554
Liberal	0.4364	0.6534	-0.8442	1.7170
Moderate (Reference)	–	–	–	–
Conservative	1.2038***	0.2576	0.6989	1.7086
Very Conservative	1.8372***	0.4045	1.0444	2.6300
Religion (Yes=1, None=0)	0.9538 ⁺	0.5232	-0.0716	1.9793
Born Again Christian (Yes=1, No=0)	0.7539**	0.2611	0.2422	1.2656
Know LGB Person (Yes=1, No=0)	-0.7507***	0.2330	-1.2074	-0.2940
Intercept	-1.0559 ⁺	0.6040	-2.2397	0.1279
Pseudo R²			0.1609	
n			508	

Note. ^aCoded as Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.19: Logistic regression predicting views about allowing gay and lesbian couples to adopt children^a by cover design treatment (no cover image treatment as base outcome) and respondent characteristics among Republicans.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image (Reference)	–	–	–	–
Default	0.1626	0.2695	-0.3656	0.6907
Inclusive	0.2066	0.2595	-0.3021	0.7152
Sex (Male=1, Female=0)	-0.2738	0.2234	-0.7115	0.1640
Age (Mean Centered)	-0.0387***	0.0082	-0.0547	-0.0227
Education				
HS or < (Reference)	–	–	–	–
Some College	0.6284 ⁺	0.3311	-0.0205	1.2774
BA+	0.8540**	0.3265	0.2141	1.4939
Married/Cohabiting (Yes=1, No=0)	-0.4122	0.2565	-0.9149	0.0905
Kids in Household (Yes=1, No=0)	-0.1767	0.2778	-0.7213	0.3678
Political Ideology				
Very Liberal	0.8252	1.0632	-1.2586	2.9090
Liberal	0.3370	0.6686	-0.9735	1.6475
Moderate (Reference)	–	–	–	–
Conservative	-0.7686**	0.2618	-1.2816	-0.2555
Very Conservative	-2.1004***	0.4177	-2.9191	-1.2817
Religion (Yes=1, None=0)	-0.0425	0.5266	-1.0746	0.9896
Born Again Christian (Yes=1, No=0)	-0.9519***	0.2490	-1.4399	-0.4639
Know LGB Person (Yes=1, No=0)	0.8557***	0.2217	0.4212	1.2901
Intercept	-0.1824	0.5990	-1.3564	0.9916
Pseudo R²			0.2085	
n			510	

Note. ^aCoded as Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.20: Logistic regression model predicting views about protections for gay men and lesbians from housing discrimination^a by cover design treatment (no cover image treatment as base outcome) and respondent characteristics among Republicans.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image (Reference)	–	–	–	–
Default	0.5456*	0.2457	0.0640	1.0272
Inclusive	0.1377	0.2303	-0.3137	0.5892
Sex (Male=1, Female=0)	-0.2831	0.2041	-0.6832	0.1170
Age (Mean Centered)	-0.0151*	0.0073	-0.0295	-0.0007
Education				
HS or < (Reference)	–	–	–	–
Some College	-0.0306	0.2744	-0.5685	0.5073
BA+	0.4117	0.2706	-0.1187	0.9422
Married/Cohabiting (Yes=1, No=0)	-0.0372	0.2337	-0.4953	0.4210
Kids in Household (Yes=1, No=0)	-0.2257	0.2680	-0.7510	0.2996
Political Ideology				
Very Liberal	0.8061	1.2046	-1.5548	3.1670
Liberal	-0.6401	0.6349	-1.8845	0.6042
Moderate (Reference)	–	–	–	–
Conservative	-0.0251	0.2537	-0.5223	0.4721
Very Conservative	-0.7308*	0.3195	-1.3570	-0.1046
Religion (Yes=1, None=0)	0.1223	0.5264	-0.9093	1.1540
Born Again Christian (Yes=1, No=0)	-0.7151***	0.2077	-1.1222	-0.3081
Know LGB Person (Yes=1, No=0)	0.7351***	0.2106	0.3223	1.1478
Intercept	0.3626	0.5816	-0.7774	1.5025
Pseudo R²			0.0914	
n			515	

Note. ^aCoded as Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.21: Logistic regression model predicting views about protections for gay men and lesbians from job discrimination^a by cover design treatment (no cover image treatment as base outcome) and respondent characteristics among Republicans.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image (Reference)	–	–	–	–
Default	0.3880	0.2553	-0.1124	0.8883
Inclusive	-0.1222	0.2356	-0.5840	0.3397
Sex (Male=1, Female=0)	-0.3210	0.2096	-0.7319	0.0899
Age (Mean Centered)	-0.0181*	0.0077	-0.0333	-0.0030
Education				
HS or < (Reference)	–	–	–	–
Some College	0.4858 ⁺	0.2777	-0.0584	1.0301
BA+	0.6800*	0.2734	0.1441	1.2159
Married/Cohabiting (Yes=1, No=0)	-0.3687	0.2477	-0.8541	0.1168
Kids in Household (Yes=1, No=0)	-0.3650	0.2775	-0.9089	0.1789
Political Ideology				
Very Liberal	0.5366	1.2022	-1.8197	2.8930
Liberal	-0.2425	0.6788	-1.5729	1.0878
Moderate (Reference)	–	–	–	–
Conservative	-0.0894	0.2662	-0.6112	0.4324
Very Conservative	-1.0303**	0.3259	-1.6692	-0.3915
Religion (Yes=1, None=0)	0.0461	0.5620	-1.0554	1.1476
Born Again Christian (Yes=1, No=0)	-0.4975*	0.2119	-0.9129	-0.0821
Know LGB Person (Yes=1, No=0)	0.5020*	0.2168	0.0771	0.9268
Intercept	0.8924	0.6155	-0.3139	2.0988
Pseudo R²			0.0936	
n			515	

Note. ^aCoded as Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.22: OLS regression model predicting general feeling toward gay men and lesbians^a by cover design treatment (default treatment as base outcome) and respondent characteristics among Republicans.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image	0.1636	0.1015	-0.0358	0.3629
Default (Reference)	–	–	–	–
Inclusive	0.0722	0.1023	-0.1287	0.2731
Sex (Male=1, Female=0)	0.3104***	0.0862	0.1410	0.4798
Age (Mean Centered)	0.0093**	0.0030	0.0034	0.0152
Education				
HS or < (Reference)	–	–	–	–
Some College	-0.0014*	0.1184	-0.2340	0.2311
BA+	-0.2958	0.1162	-0.5242	-0.0674
Married/Cohabiting (Yes=1, No=0)	0.1314	0.0974	-0.0598	0.3227
Kids in Household (Yes=1, No=0)	0.0078	0.1098	-0.2079	0.2235
Political Ideology				
Very Liberal	0.6268	0.4810	-0.3182	1.5719
Liberal	-0.1345	0.2774	-0.6795	0.4106
Moderate (Reference)	–	–	–	–
Conservative	0.2178*	0.1056	0.0102	0.4253
Very Conservative	0.6620***	0.1365	0.3939	0.9301
Religion (Yes=1, None=0)	-0.0275	0.2184	-0.4566	0.4015
Born Again Christian (Yes=1, No=0)	0.4422***	0.0893	0.2668	0.6177
Know LGB Person (Yes=1, No=0)	-0.3793***	0.0869	-0.5500	-0.2086
Intercept	2.8800***	0.2446	2.3994	3.3606
R²	0.2406			
n	527			

Note. ^aCoded as Very Favorable=1, Favorable=2, Neither favorable nor unfavorable=3, Unfavorable=4, Very unfavorable=5. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.23: Ordinal regression model predicting general feeling toward gay men and lesbians^a by respondents characteristics and cover design treatment among Republicans.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image	0.419*	0.206	0.015	0.823
Default (Reference)				
Inclusive	0.267	0.211	-0.145	0.680
Sex (Male=1, Female=0)	0.615***	0.177	0.268	0.962
Age (Mean Centered)	0.019***	0.006	0.007	0.031
Education				
HS or < (Reference)				
Some College	0.080	0.240	-0.390	0.550
BA+	-0.556*	0.236	-1.019	-0.093
Married/Cohabiting (Yes=1, No=0)	0.224	0.198	-0.165	0.612
Kids in Household (Yes=1, No=0)	0.052	0.220	-0.379	0.483
Political Ideology				
Very Liberal	1.313	1.008	-0.663	3.290
Liberal	-0.337	0.598	-1.509	0.835
Moderate (Reference)				
Conservative	0.430*	0.211	0.017	0.843
Very Conservative	1.326***	0.279	0.779	1.873
Religion (Yes=1, None=0)	-0.231	0.447	-1.107	0.645
Born Again Christian (Yes=1, No=0)	0.844***	0.183	0.485	1.203
Know LGB Person (Yes=1, No=0)	-0.761***	0.177	-1.107	-0.414
Cut 1	-3.192	0.557	-4.284	-2.100
Cut 2	-0.921	0.504	-1.908	0.066
Cut 3	1.506	0.507	0.513	2.499
Cut 4	2.513	0.516	1.503	3.524
Pseudo R²			0.0978	
n			527	

Note. ^aCoded as Very Favorable=1, Favorable=2, Neither favorable nor unfavorable=3, Unfavorable=4, Very unfavorable=5. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.24: Multinomial regression model predicting views about same-sex marriage by cover design treatment (default treatment as base outcome) and respondents characteristics among Republicans.

	Favor				Civil Unions Only			
	Coefficient	Standard Error	95% Confidence Interval		Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound			Lower Bound	Upper Bound
Cover Design								
No Cover Image	-0.0375	0.3545	-0.7323	0.6574	-0.0377	0.2890	-0.6041	0.5286
Default (Reference)	–	–	–	–	–	–	–	–
Inclusive	0.2065	0.3525	-0.4843	0.8974	-0.0831	0.2941	-0.6596	0.4934
Sex (Male=1, Female=0)	-0.4651	0.2949	-1.0430	0.1128	-0.4006	0.2479	-0.8865	0.0854
Age (Mean Centered)	-0.0408***	0.0106	-0.0615	-0.0201	-0.0104	0.0085	-0.0271	0.0062
Education								
HS or < (Reference)	–	–	–	–	–	–	–	–
Some College	0.2241	0.4135	-0.5863	1.0345	0.5489	0.3714	-0.1790	1.2768
BA+	0.4148	0.4184	-0.4052	1.2349	1.0160**	0.3587	0.3130	1.7191
Married/Cohabiting (Yes=1, No=0)	-0.7308*	0.3314	-1.3804	-0.0812	-0.7222**	0.2737	-1.2587	-0.1857
Kids in Household (Yes=1, No=0)	-0.3815	0.3565	-1.0802	0.3171	-0.3759	0.3193	-1.0016	0.2499
Political Ideology								
Very Liberal	0.2600	1.2228	-2.1366	2.6565	-11.6336	427.7079	-849.9258	826.6586
Liberal	0.3250	0.8176	-1.2776	1.9275	0.7471	0.7915	-0.8043	2.2985
Moderate (Reference)	–	–	–	–	–	–	–	–
Conservative	-1.5549***	0.3211	-2.1842	-0.9256	0.0089	0.3213	-0.6210	0.6387
Very Conservative	-2.6496***	0.5906	-3.8072	-1.4920	-1.1192	0.4551	-2.0111	-0.2272
Religion (Yes=1, None=0)	-1.4449*	0.6595	-2.7374	-0.1524	-0.0879	0.7969	-1.6499	1.4741
Born Again Christian (Yes=1, No=0)	-1.3052***	0.3540	-1.9990	-0.6114	-0.9796***	0.2691	-1.5071	-0.4522
Know LGBT Person (Yes=1, No=0)	1.4743***	0.2974	0.8914	2.0571	0.6998**	0.2484	0.2130	1.1866
Intercept	1.4920*	0.7517	0.0187	2.9654	-0.5087	0.8864	-2.2459	1.2285
Pseudo R²	0.1916							
n	520							

Note. ^aCoded as Favor=1, Favor Civil Unions Only=2, Oppose=3; Oppose is the reference category. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.25: Logistic regression predicting views about DOMA^a by cover design treatment (default treatment as base outcome) and respondent characteristics among Republicans.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image	0.2078	0.2759	-0.3329	0.7485
Default (Reference)	–	–	–	–
Inclusive	0.0103	0.2764	-0.5314	0.5521
Sex (Male=1, Female=0)	0.6706**	0.2380	0.2042	1.1370
Age (Mean Centered)	0.0040	0.0080	-0.0116	0.0196
Education				
HS or < (Reference)	–	–	–	–
Some College	-0.3136	0.3269	-0.9544	0.3271
BA+	-0.2451	0.3270	-0.8860	0.3957
Married/Cohabiting (Yes=1, No=0)	0.4629 ⁺	0.2530	-0.0330	0.9587
Kids in Household (Yes=1, No=0)	0.1424	0.2902	-0.4264	0.7112
Political Ideology				
Very Liberal	-1.8937	1.1985	-4.2428	0.4554
Liberal	0.4364	0.6534	-0.8442	1.7170
Moderate (Reference)	–	–	–	–
Conservative	1.2038***	0.2576	0.6989	1.7086
Very Conservative	1.8372***	0.4045	1.0444	2.6300
Religion (Yes=1, None=0)	0.9538 ⁺	0.5232	-0.0716	1.9793
Born Again Christian (Yes=1, No=0)	0.7539**	0.2611	0.2422	1.2656
Know LGB Person (Yes=1, No=0)	-0.7507***	0.2330	-1.2074	-0.2940
Intercept	-1.2637*	0.6063	-2.4520	-0.0754
Pseudo R²			0.1609	
n			508	

Note. ^aCoded Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.26: Logistic regression predicting views about allowing gay and lesbian couples to adopt children^a by cover design treatment (default treatment as base outcome) and respondent characteristics among Republicans.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image	-0.1626	0.2695	-0.6907	0.3656
Default (Reference)	–	–	–	–
Inclusive	0.0440	0.2669	-0.4792	0.5672
Sex (Male=1, Female=0)	-0.2738	0.2234	-0.7115	0.1640
Age (Mean Centered)	-0.0387***	0.0082	-0.0547	-0.0227
Education				
HS or < (Reference)	–	–	–	–
Some College	0.6284 ⁺	0.3311	-0.0205	1.2774
BA+	0.8540**	0.3265	0.2141	1.4939
Married/Cohabiting (Yes=1, No=0)	-0.4122	0.2565	-0.9149	0.0905
Kids in Household (Yes=1, No=0)	-0.1767	0.2778	-0.7213	0.3678
Political Ideology				
Very Liberal	0.8252	1.0632	-1.2586	2.9090
Liberal	0.3370	0.6686	-0.9735	1.6475
Moderate (Reference)	–	–	–	–
Conservative	-0.7686**	0.2618	-1.2816	-0.2555
Very Conservative	-2.1004***	0.4177	-2.9191	-1.2817
Religion (Yes=1, None=0)	-0.0425	0.5266	-1.0746	0.9896
Born Again Christian (Yes=1, No=0)	-0.9519***	0.2490	-1.4399	-0.4639
Know LGB Person (Yes=1, No=0)	0.8557***	0.2217	0.4212	1.2901
Intercept	-0.0199	0.6035	-1.2027	1.1630
Pseudo R ²		0.2085		
n		510		

Note. ^aCoded as Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.27: Logistic regression model predicting views about protections for gay men and lesbians from housing discrimination^a by cover design treatment (default treatment as base outcome) and respondent characteristics among Republicans.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image	-0.5456*	0.2457	-1.0272	-0.0640
Default (Reference)	–	–	–	–
Inclusive	-0.4079 ⁺	0.2458	-0.8897	0.0739
Sex (Male=1, Female=0)	-0.2831	0.2041	-0.6832	0.1170
Age (Mean Centered)	-0.0151*	0.0073	-0.0295	-0.0007
Education				
HS or < (Reference)	–	–	–	–
Some College	-0.2831	0.2041	-0.6832	0.1170
BA+	-0.0151	0.0073	-0.0295	-0.0007
Married/Cohabiting (Yes=1, No=0)	-0.2831	0.2041	-0.6832	0.1170
Kids in Household (Yes=1, No=0)	-0.0151	0.0073	-0.0295	-0.0007
Political Ideology				
Very Liberal	0.8061	1.2046	-1.5548	3.1670
Liberal	-0.6401	0.6349	-1.8845	0.6042
Moderate (Reference)	–	–	–	–
Conservative	-0.0251	0.2537	-0.5223	0.4721
Very Conservative	-0.7308*	0.3195	-1.3570	-0.1046
Religion (Yes=1, None=0)	0.1223	0.5264	-0.9093	1.1540
Born Again Christian (Yes=1, No=0)	-0.7151***	0.2077	-1.1222	-0.3081
Know LGB Person (Yes=1, No=0)	0.7351***	0.2106	0.3223	1.1478
Intercept	0.9082	0.5868	-0.2420	2.0583
Pseudo R²	0.0914			
n	515			

Note. ^aCoded as Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

Table G.28: Logistic regression model predicting views about protections for gay men and lesbians from job discrimination^a by cover design treatment (default treatment as base outcome) and respondent characteristics among Republicans.

	Coefficient	Standard Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Cover Design				
No Cover Image	-0.3880	0.2553	-0.8883	0.1124
Default (Reference)	–	–	–	–
Inclusive	-0.5101*	0.2530	-1.0060	-0.0143
Sex (Male=1, Female=0)	-0.3210	0.2096	-0.7319	0.0899
Age (Mean Centered)	-0.0181*	0.0077	-0.0333	-0.0030
Education				
HS or < (Reference)	–	–	–	–
Some College	0.4858 ⁺	0.2777	-0.0584	1.0301
BA+	0.6800*	0.2734	0.1441	1.2159
Married/Cohabiting (Yes=1, No=0)	-0.3687	0.2477	-0.8541	0.1168
Kids in Household (Yes=1, No=0)	-0.3650	0.2775	-0.9089	0.1789
Political Ideology				
Very Liberal	0.5366	1.2022	-1.8197	2.8930
Liberal	-0.2425	0.6788	-1.5729	1.0878
Moderate (Reference)	–	–	–	–
Conservative	-0.0894	0.2662	-0.6112	0.4324
Very Conservative	-1.0303**	0.3259	-1.6692	-0.3915
Religion (Yes=1, None=0)	0.0461	0.5620	-1.0554	1.1476
Born Again Christian (Yes=1, No=0)	-0.4975*	0.2119	-0.9129	-0.0821
Know LGB Person (Yes=1, No=0)	0.5020*	0.2168	0.0771	0.9268
Intercept	1.2804*	0.6216	0.0620	2.4988
Pseudo R²			0.0936	
n			515	

Note. ^aCoded as Favor=1, Oppose=0. ⁺p<0.10, *p<0.05, **p<0.01, ***p<0.001

**APPENDIX H: VIEWS ABOUT LGB ISSUES AMONG NON-LGB NASIS
RESPONDENTS**

Table H.1: Views about LGB issues among non-LGB and LGB NASIS respondents (weighted percentages, imputed dataset).^a

	Non-LGB		LGB	
	Percentage	Standard Error	Percentage	Standard Error
General Feeling toward Gay Men and Lesbians				
Very Favorable	10.85	1.05	50.99	10.20
Favorable	22.62	1.31	22.53	7.64
Neither Favorable nor Unfavorable	41.55	1.57	10.26	6.08
Unfavorable	12.59	1.05	8.72	4.53
Very Unfavorable	12.39	1.02	7.50	4.09
Same-Sex Marriage				
Favor	39.27	1.58	74.92	8.06
Favor Civil Unions Only	20.02	1.26	5.42	4.36
Oppose	40.71	1.52	19.65	6.99
DOMA				
Favor	52.12	1.63	13.40	6.48
Oppose	47.88	1.63	86.60	6.48
Adoption by Gay and Lesbian Couples				
Favor	54.81	1.56	79.70	7.01
Oppose	45.19	1.56	20.30	7.01
Protection from Housing Discrimination				
Favor	71.33	1.44	80.76	7.42
Oppose	28.67	1.44	19.24	7.42
Protection from Job Discrimination				
Favor	26.00	1.39	82.97	6.91
Oppose	74.00	1.39	17.03	6.91

Note. n=1608. ^aNon-LGB=96.75%, LGB=3.25%.

**APPENDIX I: WEIGHTED AND IMPUTED DEMOGRAPHIC, POLITICAL,
AND RELIGIOUS CHARACTERISTICS OF NASIS RESPONDENTS**

Table I.1: Demographic characteristics of NASIS respondents (weighted and imputed).

	Percent	SE	95% CI	
			Lower Bound	Upper Bound
Sex				
Female	50.86	1.57	47.79	53.93
Male	49.14	1.57	46.07	52.21
Race				
Not White	6.11	0.82	4.50	7.72
White	93.89	0.82	92.28	95.50
Ethnicity				
Not Hispanic	96.68	0.68	95.35	98.02
Hispanic	3.32	0.68	1.98	4.65
Marital Status				
Not Married	23.56	1.31	21.00	26.13
Married/Cohabiting	76.44	1.31	73.87	79.00
Age				
19-34	22.00	1.52	19.02	24.98
35-49	29.09	1.54	26.07	32.10
50-64	27.95	1.24	25.52	30.38
65+	20.96	0.99	19.02	22.90
Education				
HS or <	19.01	1.19	16.67	21.35
Some College	36.26	1.56	33.19	39.32
BA+	44.74	1.55	41.70	47.78
Kids in Household				
No Kids	60.54	1.61	57.38	63.70
Kids	39.46	1.61	36.30	42.62

Note. n=1,608.

Table I.2: Other characteristics of NASIS respondents (weighted and imputed).

	Percent	SE	95% CI	
			Lower Bound	Upper Bound
Nebraska Region				
Omaha and Lincoln	47.55	1.25	45.10	50.00
Rest of the state	52.45	1.25	50.00	54.90
Sexual Orientation				
Not LGB	96.75	0.66	95.45	98.04
LGB	3.25	0.66	1.96	4.55
Know LGB Person				
Yes	46.72	1.56	43.66	49.78
No	53.28	1.56	50.22	56.34

Note. n=1,608.

Table I.3: Political party and ideology of NASIS respondents (weighted and imputed).

	Percent	SE	95% CI	
			Lower Bound	Upper Bound
Political Party				
Democrat	25.69	1.33	23.07	28.31
Republican	41.23	1.53	38.23	44.22
Independent	33.08	1.55	30.04	36.13
Political Ideology				
Very Liberal	3.98	0.69	2.62	5.34
Liberal	16.07	1.27	13.57	18.56
Moderate	37.78	1.55	34.74	40.82
Conservative	32.51	1.44	29.68	35.33
Very Conservative	9.67	0.95	7.81	11.53

Note. n=1,608.

Table I.4: Religious characteristics of NASIS respondents (weighted and imputed).

	Percent	SE	95% CI	
			Lower Bound	Upper Bound
Religion				
Protestant	50.99	1.59	47.87	54.11
Catholic	28.10	1.41	25.33	30.87
Other	6.03	0.86	4.34	7.71
None	14.88	1.26	12.42	17.35
Has a Religious Affiliation	85.22	1.24	82.79	87.65
No Religious Affiliation	14.78	1.24	12.35	17.21
Born-Again Christian				
Yes	26.01	1.37	23.31	28.70
No	73.99	1.37	71.30	76.69
Religious Attendance				
Several Times per Week	5.10	0.64	3.84	6.35
Once a Week	28.49	1.40	25.74	31.25
Nearly Weekly to Once per Month	19.67	1.25	17.22	22.11
Once to Several Days per Year	24.74	1.39	22.02	27.46
Less than Once per Year	9.76	0.99	7.82	11.69
Never	12.25	1.05	10.19	14.31
Religious Influence				
Very Much	31.76	1.42	28.97	34.55
Quite a Bit	26.35	1.37	23.67	29.04
Some	20.63	1.30	18.08	23.17
A Little	9.16	0.96	7.27	11.05
None/Do Not Attend	12.11	1.15	9.84	14.37

Note. n=1,608.

**APPENDIX J: IMPUTED VS. UNIMPUTED OPINIONS ABOUT LGB ISSUES,
NASIS 2013**

Table J.1: Views about LGB issues using imputed and unimputed NASIS 2013 data.

	Imputed	Unimputed
General Feeling toward Gay Men and Lesbians		
Very Favorable	12.15	12.20
Favorable	22.62	22.73
Neither Favorable nor Unfavorable	40.54	40.52
Unfavorable	12.46	12.43
Very Unfavorable	12.23	12.12
Same-Sex Marriage		
Favor	40.42	40.54
Favor Civil Unions Only	19.54	19.28
Oppose	40.03	40.19
DOMA		
Favor	50.86	50.55
Oppose	49.14	49.45
Adoption by Gay and Lesbian Couples		
Favor	55.62	55.87
Oppose	44.38	44.13
Protection from Housing Discrimination		
Favor	71.63	71.78
Oppose	28.37	28.22
Protection from Job Discrimination		
Favor	74.29	74.58
Oppose	25.71	25.46