

Population Review

Volume 56, Number 1, 2017

Type: Article pp. 46-67

The Color of LGB: Racial and Ethnic Variations in Conceptualizations of Sexual Minority Status

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Abstract

Recently, demographic research on sexual minorities using large-scale surveys has flourished. Yet, there has been little attention paid to whether common survey measures of sexuality – and the use of these measures – capture important racial/ethnic and sex differences, despite evidence suggesting the existence of racial and ethnic differences in how sexuality is both understood and described. This paper focuses on the intersection of race/ethnicity, sex and sexuality, and asks whether the racial/ethnic compositions of populations are sensitive to definitions of non-heterosexual populations, and whether measures of sexuality change over time, racial/ethnic group and sex. Results show that different definitions of non-heterosexual populations influence estimates of racial/ethnic compositions of groups, and that patterns of identification across age cohorts and time also vary by race/ethnicity and sex. Using different theoretical perspectives, the paper concludes with recommendations of how non-heterosexual populations should be conceptualized in future research using large-scale surveys.

Keywords

Race/ethnicity, sexuality, LGB, measurement

Introduction

In the past decade, as issues of same-sex marriage and civil rights protection have further penetrated mainstream discourse, research on sexual minorities¹ has flourished, driven in part by US government initiatives to collect more large-scale survey data on non-heterosexual populations. Studies that draw from other methodologies have long investigated the lives of non-heterosexual individuals, and from this body of work comes the insight that different racial/ethnic communities in the US form different understandings of sexualities (Bowleg 2013; Ford et al. 2007; King 2008). These differences, in turn, may impact analyses based on survey measures that form the basis of demographic inquiry.²

In quantitative work, research has begun to recognize the “ambiguity of the very definition of homosexuality” (Black 2000). Common definitions of gay male and lesbian populations are based on sexual behavior history and co-residency with same-sex partners. More recent research, however, has used definitions based on sexual orientation and attraction in attempting to identify gay men and lesbians (Albelda et al. 2009; Russell and Joyner 2001). And yet, the implications of these different definitions of sexual minority status on the racial/ethnic demographic characteristics of these population are unclear.

To address this gap in knowledge, this study explores racial/ethnic variation in common operationalizations of non-heterosexuality in large-scale data of populations in the United States. Specifically, this paper focuses on how survey researchers have defined non-heterosexual populations based on sexual activity, relationships and co-residency, and sexual attraction and identification; whether using these definitions produces similar estimates of racial/ethnic demographic; and whether these definitions are stable over racial/ethnic group and time.

Measurement of non-heterosexuality in large-scale survey research

While scholars have operationalized non-heterosexuality in various ways, the empirical and theoretical implications of these analytic choices remain unclear. Surveys that ask about various facets of sexuality and use probability samples at the state and national levels have been available for only two decades. The following sections describe how research from a number of disciplines defines and operationalizes non-heterosexuality based on survey questions from a growing number of datasets.³ The questions fall into the following categories: sexual activity, relationships and co-residency, sexual attraction and identification.

Sexual activity

Early research using large-scale datasets denoted sexual activity as a measure of non-heterosexuality. Using datasets like the General Social Survey (GSS) and National Health and Social Life Survey (NHSLs),

¹ In sexuality research, the term sexual minority, as well as non-heterosexual, can encompass a plethora of identities, including gay, lesbian, bisexual, queer, pansexual and asexual. In the context of this paper, the terms sexual minority and non-heterosexual (or non-heterosexuality) include individuals who report on questions from large-scale survey projects a same-sex sexual experience, attraction to an individual of the same sex and/or a non-heterosexual identity.

² Identifications such as gay, lesbian, bisexual, and heterosexual, which are the focus of this study, reflect only some facets of sexual identities.

³ This section discusses a number of major surveys but does not cover every available dataset. For work on available surveys, please see Coker, Austin, and Schuster's (2010) review piece of datasets which ask questions about sexuality, or the helpful website, gaydata.org (Sell 2007).

scholars identified non-heterosexual individuals as those who had same-sex sexual history. The goal of this research was primarily to estimate the size of the non-heterosexual populations (Black et al 1998; Laumann 1994) and characteristics of such populations, such as educational attainment and labor market outcomes (Black et al 1998; Black, Sanders, and Taylor 2007). Similarly, public health scholars used sexual activity measures to show a diverse spectrum of outcomes, including substance abuse and other risky behaviors (Bauer, Jairam, and Baidoobonso 2010; Chandra, Billioux, and Sionean 2012; Hallfors et al. 2004; Strathdee and Sherman 2003), depression (De Santis et al. 2008; Mays and Cochran 2001; Stall et al. 2003) and suicide (Paul et al. 2002). This operationalization may, however, be problematic. For example, it assumes a fixed relationship between non-heterosexual identification and same-sex sexual activity.

In order to disassociate sexual activity and identity, public health research commonly use the terms MSM (men who have sex with men) and WSW (women who have sex with women). However, Young and Meyer (2005) argue that the ubiquitous use of MSM and WSW in public health research “(1) undermines the self-determined sexual identity of members of sexual-minority groups, in particular people of color; (2) deflects attention from social dimensions of sexuality that are critical in understanding sexual health; and (3) obscures elements of sexual behavior that are important for public health research and intervention.” In utilizing sexual activity as the sole marker of non-heterosexuality, this body of work has not fully grappled with the problematic assumptions inherent in this choice.

Relationships and co-residency

Other research defines non-heterosexual populations solely on co-residency and relationship history, which excludes members who may identify as non-heterosexual but do not report being in a “marriage-like relationship” in one household (U.S. Census Bureau 1990, 2000). By defining non-heterosexual populations based on relationship history and co-residency, research has uncovered a large amount of demographic, social and economic information about these populations. Specifically, this body of research has estimated the size of non-heterosexual populations in various contexts (Black et al 2000; Carpenter and Gates 2008): marriage (Andersson et al. 2006; Black et al 2000; Carpenter and Gates 2008), couple formation (Jepsen and Jepsen 2002), area of residence child-rearing (Andersson et al. 2006; Black, Sanders, and Taylor 2007; Rosenfeld and Kim 2005; Rosenfeld 2007), divorce (Andersson et al. 2006), and labor market outcomes (Black, Sanders, and Taylor 2007).

Studies that identify sexual-minority individuals on the basis of their residential and relationship status are limited in that they likely underreport the prevalence of non-heterosexuality. Studies suggest, for example, that many individuals who identify as gay or lesbian are unlikely to report that they are cohabiting with a same-sex partner. Furthermore, other research shows that sexual-minority individuals are less likely than heterosexual individuals to report being part of a romantic couple. Thus, by defining heterosexuality strictly in terms of residential and relationship status, these studies may include only a limited, and also non-representative, sample of gay men and lesbian individuals.

Sexual attraction and identification

Other research relies on individuals self-reporting their sexual attraction and identification/orientation to define non-heterosexual populations. However, analyses rarely consider change over time of these faces of sexuality. In addition to sexual activity, surveys such as NHLS, the National Longitudinal Study of Adolescent Health (Add Health), and the National Survey of Family Growth (NSFG), ask respondents

about sexual attraction and identity/orientation. These surveys ask about sexual attraction, and typically ask if respondents are attracted only or mostly to men or women, or to both men and women. Response categories for questions regarding identity include heterosexual / normal / straight, homosexual, bisexual, or something else.

A number of papers use Add Health to look at the relationship between attraction or identity and same-sex relationship formations among adolescents, school violence and school outcomes (Galliher, Rostosky, and Hughes 2004; Look 2001; Russell, Driscoll, and Truong 2002; Russell and Joyner 2001; Russell, Seif, and Truong 2001). Studies using the NSFG have investigated similar relationships, as well as issues such as adoption and poverty (Albelda et al. 2009; Gates et al. 2007; Irwin and Morgenstern 2005).

This focus on sexual attraction and identification is problematic, however, in that previous research suggests that these concepts may be more fluid among gay men and (especially) lesbian populations than among heterosexual ones, or that these terms may not hold consistent meaning among all groups. Scholarship from psychology, pioneered by Baumeister (2000, 2004), argues that women's sexuality is more "plastic," or more likely to change across time, than men's sexuality. This claim is supported by a set of studies based on interviews with close to 100 young women that found considerable change in women's sexual behavior and identification over time (Diamond 1998; 2000; 2008), and another study using the first three waves of Add Health, which found that the agreement between waves of sexual attraction varied between males and females (Savin-Williams and Ream 2007).

Savin-Williams, Joyner, and Rieger (2012), using a descriptive analysis of Add Health data, found that stability in sexual orientation identity was much more common than change. Across two survey waves and six years, the authors found that overall, 82.2 and 93.8 percent of women and men, respectively, remained stable in their report of sexual orientation identity. However, the authors did not disaggregate their findings by other social dimensions, such as race/ethnicity, and did not explore regression analysis. Similar to studies that find differences in the composition of non-heterosexual populations with different operationalizations within definitions based on sexual activity or partnership and co-residency, one study found that both the racial composition of women and behavior of women who have sex with women differ significantly by their self-reported sexual identification (heterosexual, homosexual, bisexual, "something else") and partnership history (Bauer and Jairam 2008). Other work also finds that the meaning of common sexual identity labels such as "gay," "lesbian," and "bisexual" are not widely understood or prescribed to by all groups, particular adolescents (Ghaziani 2011; Green 2002; Russell, Clarke, and Clary 2009; Savin-Williams 2006).

The importance of race/ethnicity in sexuality research

Research that draws primarily from qualitative methods finds significant racial and ethnic variation in how sexuality is perceived. These differences in understandings of sexuality likely influence how individuals respond to survey questions that ask about facets of sexuality. In a qualitative study of Black self-identified gay and bisexual men, Bowleg (2013) finds that participants do not identify separately as being queer or Black, but experience these identities intersectionally. As one participant stated, "Well it's hard for me to separate. When I'm thinking of me, I'm thinking of all of them as me. Like once you've blended the cake you can't take the parts back to the main ingredients" (p.758).

Vocabularies that capture identities also vary across groups. For example, Blackburn (2005) documents how Black queer youth develop and practice a vast lexicon that describes sexuality. Other work finds that groups that may not speak English as their primary language often struggle to identify with common English terms such as “gay” or “lesbian” (King 2008; Rahman 2010). The lack of identification with mainstream vocabularies of sexualities can also stem from experiences with discrimination. For example, Alimahomed (2008) documents how queer Latinas and Asian/Pacific Islander women experience marginality within the mainstream (White, middle-class) LGBT movement and social circles. One respondent who identified as Korean and queer stated: “Gayness is very white... Being queer is being kind of hidden. It’s harder to find your place as a queer woman of color” (p.162). A Chicana respondent in a study that surveyed ninety-nine queer women on their identity as lesbians wrote that “I am disappointed the questions did not allow for diversity. I felt like I was being asked to set my Latina identity aside to respond. Why ask for identity if it's not going to be truly incorporated—all you will get is how we respond to a white questionnaire” (Eliason and Morgan 1998: 61).

Although scholars have used a variety of different measures to identify non-heterosexual populations from large-scale survey data, there has been little discussion about important racial/ethnic variation of these different operationalizations. The goal of this paper, then, is to compare these various conceptualizations of non-heterosexual populations to explore potential racial/ethnic differences. Specifically, this work asks:

1. How do different definitions of non-heterosexual population influence our estimates of racial/ethnic compositions of these groups?
2. Does the stability of these definitions, such as sexual attraction and identification, vary across race/ethnicity and sex?

Data and methods

National survey of family growth

The National Survey of Family Growth (NSFG) is a family and health survey of United States women and men, ages 15-45, with infant children. It is conducted by the National Center for Health Statistics. For this analysis, two waves were used covering 2002 and 2006 – 2010, with a total sample size of approximately 50,000 respondents.

The survey was selected for this study because it includes questions that address three common survey definitions of non-heterosexuality and samples respondents from a wide range of ages. Specifically, it includes three highly relevant questions about sexuality:

1. If participants “ever had any sexual experience of any kind with another male/female” (coded 1 if yes, 0 if no).
2. “People are different in their sexual attraction to other people. Which best describes your feelings? Are you a. only attracted to males (or females in female survey), b. mostly attracted to males, c. equally attracted to males and females, d. mostly attracted to females, e. only attracted to females, and f. Not sure.” (coded 1 for response categories b – e, coded 0 for a., and missing if f.).
3. “Do you think of yourself as heterosexual, homosexual, bisexual, or something else.” (coded 1 if homosexual, bisexual, or something else, 0 if heterosexual).

The national longitudinal study of adolescent health

The four waves of The National Longitudinal Study of Adolescent Health (Add Health) followed a cohort of adolescents in grades 7 – 12 in the 1994 – 95 school year through 2008, when the sample was aged 24 – 32 (Harris 2009; Harris et al. 2009). The primary sampling frame in Wave I was school-based, with a 70 percent response rate. A total of 132 public and private schools participated. From the schools, students were split into sex by grade strata and randomly selected to be administered in-home interviews. Oversamples were taken of Chinese, Cuban, Puerto Rican, twins, disabled, and Black youth with at least one parent having a college degree.

This survey was selected for this paper because it asks respondents a number of questions about sexuality and is longitudinal, which allows for an analysis of respondents changing aspects of their sexuality over time. Moreover, it also asks respondents for relationship histories, which can be used to identify individuals who have been in same-sex cohabiting (or non-cohabiting) relationships. To be included in this study, respondents had to have valid data for all four waves and a valid grand sample weight. Native American and Native Hawaiian / Pacific Islander were excluded from these analyses due to extremely small sample size. The analytic sample for the results presented in this paper was 9,320. Descriptive statistics on definitions of non-heterosexual populations using NSFG and Add Health can be found in the Appendix to the present document, Tables A and B.

Description of variables

This paper explores four broad definitions of sexual minority status – relationship status, sexual attraction, sexual identification, and sexual activity – and draws from two nationally representative datasets.

Relationship status

Three variables describing respondents' relationship statuses were coded from questions taken from Wave III of the National Longitudinal Study of Adolescent Health (Add Health). First, respondents who answered they were “currently involved in a sexual or romantic relationship” and indicated that their partner was of the same sex were selected. These respondents were coded 1 for the variable *same-sex partner*, all if they were in a same-sex relationship and 0 if not. The *same-sex, cohabit* variable was coded 1 if the respondent reported currently living or had in the past live together with the partner, and coded 0 if they had never lived together with their partner. The variable *same-sex partner, no cohabit* was coded inversely.

Sexual attraction

A set of variables represent sexual attractions of respondents and were coded from two questions on all four waves of Add Health that asked respondents about same-sex attraction. In Wave I, respondents were asked if “they ever had a romantic attraction to a female/male.” In subsequent waves, respondents were asked about romantic attraction since the month of the last interview. For Tables 1a – 1c, the variable for *same-sex attraction* was coded 1 if respondents indicated they were ever attracted to someone of the same sex and 0 if not. *No same-sex attraction* was coded 1 if respondents indicated that they did not have attraction to the same sex and 0 otherwise. In Table 2, the variable *same-sex attraction* comes from questions on the female and male questionnaires from cycles 6 and 7 of the National Survey of Family Growth (NSFG). This question prompted the respondents by stating that “people are different in their sexual attraction to other people. Which best describes your feelings? Are you...only attracted to males, mostly attracted to

males, equally attracted to males and females, mostly attracted to females, only attracted to females, not sure.” This variable was coded 0 if respondents indicated they were exclusively attracted to the other sex and 1 if they gave any other response.⁴

Sexual identification

On Waves III and IV of Add Health, respondents were asked to “Please choose the description that best fits how you think about yourself. 100% heterosexual (straight); mostly heterosexual (straight), but somewhat attracted to people of your own sex; bisexual (attracted to men and women equally); mostly homosexual (gay), but somewhat attracted to people of the opposite sex; 100% homosexual (gay); and not sexually attracted to either males or females. Individuals who refused to answer were excluded from the sample. This variable was coded 1 if respondents reported they were mostly heterosexual, bisexual, mostly homosexual, or 100% homosexual and coded 0 if they responded otherwise. The variable *Gay/Lesbian* was coded 1 if respondents reported being “100% homosexual” and coded 0 if they reported otherwise. The variable *Heterosexual* was coded 1 if respondents reported being 100% heterosexual and 0 if they reported otherwise. These three variables from Add Health, *Non-heterosexual Identification* and *Gay/Lesbian*, are used in Tables 1a – 1c and Tables 4a – 4d. On the NSFG, respondents were asked on cycles 6 and 7 if “you think of yourself as heterosexual, homosexual, bisexual, or something else?” The variable *Non-Heterosexual Identification* was coded 1 if respondents answered they were homosexual, bisexual, or something else, and coded 0 if they answered heterosexual. The variable *Gay/Lesbian* was coded 1 if respondents answered they were homosexual and 0 if they answered otherwise. The variable *Heterosexual* was coded 1 if respondents reported being 100% heterosexual and 0 if they reported otherwise. The NSFG variables are found in Tables 4a – 4c.

Sexual activity

One question on cycles 6 and 7 of NSFG asked respondents if they had ever had sex with males or females. This variable was coded 1 if respondents reported ever having sex with someone of the same sex and 0 if they did not.

Change in attraction

This variable used responses from the four waves of Add Health and was coded 1 if respondents ever changed their report of attraction over the four waves.

Change in identification

This variable used responses from the Waves III and IV of Add Health and was coded 1 if respondents ever changed their report of sexual identification.

A number of other variables were also used in the analyses in this work. A variable for *age cohort* separated participants from the NSFG into three 10-year categories. The oldest age group, 35 – 45 years old, served as the reference category. The variable *female* was coded 1 if female, 0 if male from both surveys, and a dummy variable was created to represent *race/ethnicity* of the respondents (categories from the NSFG are Asian, Latino, Black, American Indian, and Native Hawaiian / Pacific Islander, with White as the reference category and Asian, Latino, and Black, with White as the reference category for Add Health).

⁴ This binary variable could be constructed in a number of ways, but was coded to be a conservative match to the Add Health question asking if respondents had “ever had a romantic attraction” to members of each sex.

Analytic strategy

The analytic strategy for the results is separated by research questions, as discussed in the results section below. Using the NSFG dataset, the first two tables use descriptive and logistic regression analysis to consider how different definitions of non-heterosexuality may produce populations with different racial/ethnic compositions. Summative statistics, t-tests and proportion tests are used to compare the percent white of six definitions of non-heterosexual populations, as well as two definitions of heterosexual populations. Zero-inflated Poisson regression models, which correct for non-normal distribution, are used to explore variations in same-sex experience, attraction, and identification across different racial/ethnic groups, age-cohorts and gender. Models that introduce interaction terms are also used to explore potential variations between racial/ethnic groups and age cohorts. Predicted probabilities are then presented to indicate the overall proportion of people who have same-sex sexual experience and those who identify as non-heterosexual.

The stability of measures of sexuality uses Add Health to investigate how different definitions of non-heterosexuality are related to the likelihood of change in individual identity and attraction over time. Logistic regression is used to indicate whether or not individuals changed their report of sexual attraction between any given waves of Add Health, with measures of attraction available for all four waves of data and measures of identification available for the third and fourth waves.

Results

The first research question asks how the racial/ethnic compositions of populations vary depending on the definitions used to identify these populations. Overall, there are differences depending on the definition. Table 1 (next page) shows summative statistics on the percent white by six definitions of non-heterosexual populations (same-sex partner, cohabit; same-sex, no cohabit; same-sex partner, all; same-sex attraction; non-heterosexual identification; gay/lesbian identification) and two definitions of heterosexual populations (no same-sex attraction, heterosexual identification). Figure 1 (next page) shows 95 percent confidence intervals for each point estimate for the mean percent white for each definition in Table 1. The confidence interval for the percent white of four definitions of non-heterosexual populations – cohabiting with same-sex partner, having any same-sex partner, reporting any same-sex attraction, and identifying as non-heterosexual – does not overlap with the confidence intervals for the two definitions of heterosexual populations, suggesting that non-heterosexual populations defined by these operationalizations have higher percentages of whites than heterosexual populations. However, the 95 percent confidence intervals for the two other definitions of non-heterosexual populations – same-sex, non-cohabiting relationships and identifying as gay or lesbian – do overlap with the confidence intervals of the definitions of heterosexual sexual population. This evidence suggests that different definitions of non-heterosexual populations result in racial/ethnically different groups, when compared with definitions of heterosexual populations.

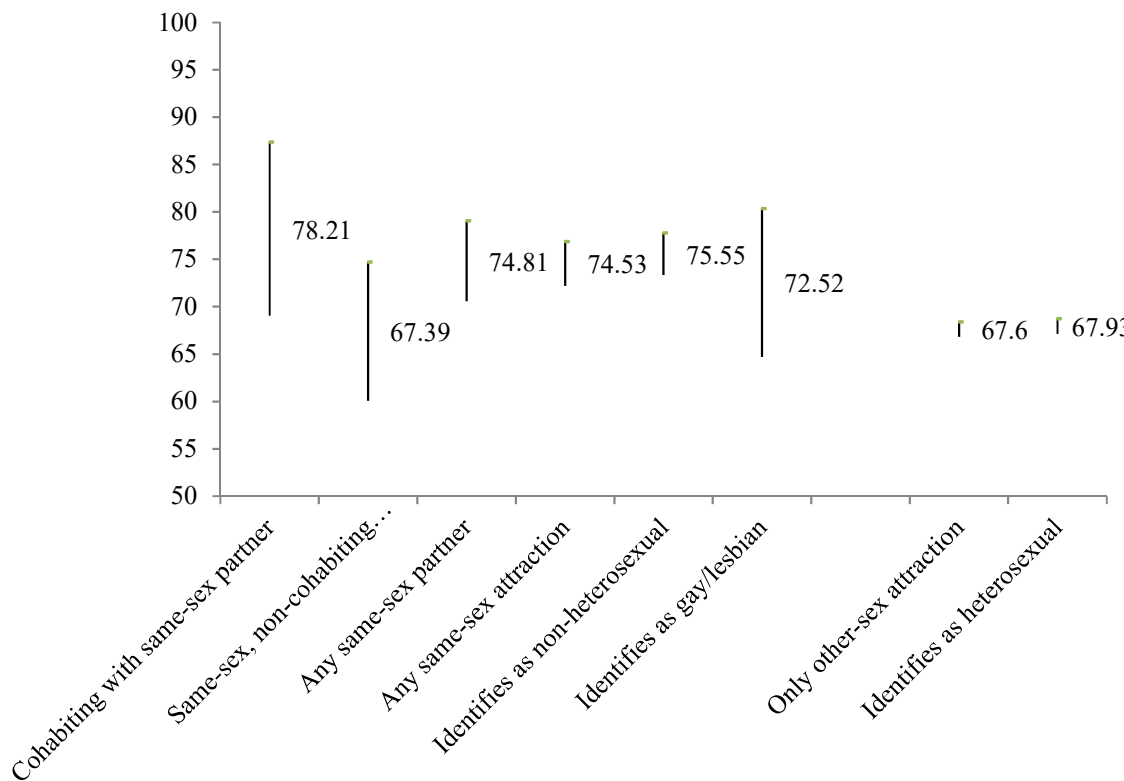
Table 1. Summative Statistics of Percent White, by Different Definitions of Gay/Lesbian and Heterosexual Populations

	Percent	SD	N
<i>Non-heterosexual populations</i>			
Cohabiting with same-sex partner	78.21	41.55	78
Same-sex, non-cohabiting relationship	67.39	47.03	158
Any same-sex partner	74.81	43.46	401
Any same-sex attraction	74.53	43.59	1323
Identifies as non-heterosexual	75.55	43	1415
Identifies as gay/lesbian	72.52	44.82	125
<i>Heterosexual populations</i>			
Only other-sex attraction	67.6	46.8	12,999
Identifies as heterosexual	67.93	46.68	12,706

Note: Percentages and standard deviations are weighted. Ns are unweighted.

Source: The National Survey of Family Growth, 2002 and 2006-2010.

Figure 1. Means of Percent White with 95% Confidence Intervals, by Different Definitions of Gay / Lesbian and Heterosexual Populations



From Table 1 and Figure 1, there is evidence that racial/ethnic compositions differ, depending on definitions of non-heterosexual populations, in comparison with heterosexual populations. In order to understand how

Table 2. Odds Ratios of Zero-Inflated Poisson Regression Models of Same-Sex Experience, Attraction, and Queer Identification, by Gender, Race/Ethnicity, and Age Cohort

	Same-sex sex experience		Same-sex attraction		Non-hetero. identification	
	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)
Age cohort (base: 35 – 45 y.o.)						
25 – 34 y.o.	1.16 (0.123)	1.19 (0.128)	1.18** (0.095)	1.35*** (0.131)	1.28** (0.149)	1.57** (0.354)
15 – 24 y.o.	1.04 (0.118)	1.06 (0.119)	1.47*** (0.129)	1.55*** (0.155)	1.68*** (0.174)	3.30*** (0.736)
Same-sex sex experience			8.87*** (0.638)	8.82*** (0.631)	5.02*** (0.625)	12.04*** (2.044)
Same-sex attraction					42.84*** (9.365)	69.99*** (16.076)
Female	2.41*** (0.252)	2.44*** (0.266)	1.73*** (0.149)	1.74*** (0.147)	0.61*** (0.051)	0.39*** (0.071)
Race/ethnicity (base: White)						
Asian	0.24*** (0.083)	0.38* (0.200)	1.78*** (0.307)	3.03*** (0.841)	0.94 (0.182)	1.21 (0.569)
Latino	0.38*** (0.056)	0.32*** (0.091)	0.95 (0.085)	1.45* (0.303)	1.23 (0.217)	1.35 (0.711)
Black	0.80** (0.086)	0.54** (0.132)	0.88** (0.055)	0.76 (0.178)	1.09 (0.122)	4.65*** (1.833)
Ethnicity-Age Interactions						
Asian X 25 – 34 y.o.		0.23* (0.170)		0.49* (0.179)		0.88 (0.642)
Asian X 15 – 24 y.o.		0.63 (0.486)		0.29*** (0.116)		0.55 (0.482)
Latino X 25 – 34 y.o.		1.14 (0.399)		0.50*** (0.127)		1.52 (1.023)
Latino X 15 – 24 y.o.		1.45 (0.465)		0.60 (0.200)		0.85 (0.428)
Black X 25 – 34 y.o.		1.46 (0.430)		0.87 (0.242)		0.53 (0.309)
Black X 15 – 24 y.o.		1.93** (0.505)		1.43 (0.382)		0.10*** (0.044)
Observations	13,373	13,373	13,343	13,343	13,244	13,244

Note: *** p<0.01, ** p<0.05, * p<0.1

Note: Model 1a is negative binomial regression model, models 3b is a logistic regression model.

Source: National Survey of Family Growth, 2002 and 2006-2010.

different definitions of non-heterosexuality impact our understanding of the characteristics of non-heterosexual populations, the extent to which non-heterosexuality is evenly distributed across different racial/ethnic groups is explored. Table 2 uses zero-inflated Poisson regression models to focus on patterns

among different racial/ethnic and age cohorts of report on three facets of sexuality: same-sex experience (Models 1a and 1b), same-sex attraction (Models 2a and 2b), and non-heterosexual identification (Models 3a and 3b). The first model in each specification compares younger cohorts, 15 – 24 year olds and 25 – 34 year olds with the oldest cohort, individuals ages 35 – 45, and also includes variables for the sex and race/ethnicity of respondents. Model 2a also controls for same-sex sexual experience, and Model 3a includes variables for both same-sex sex experience and attraction. The second model for each outcome introduces an interaction between race/ethnicity and age cohort.

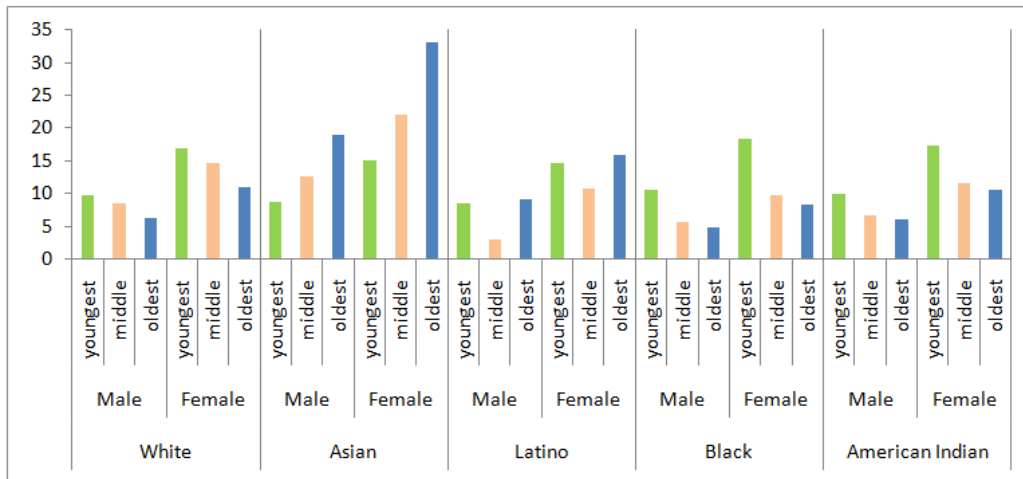
Overall, these models provide more evidence that racial/ethnic composition may vary by definition of non-heterosexuality. For example, from Model 1a, Asian Americans and Latinos have much lower odds than Whites of same-sex sexual experience (76 percent and 62 percent, respectively), but Asian Americans have 78 percent higher odds of reporting same-sex attraction than Whites, net of same-sex activity (Model 2a).

Regardless of the definition used, non-heterosexual populations are more female than male. This is consistent with prior research, which suggests that non-heterosexuality is more common among females than among males (Diamond 2000). That said, the relative representation of these groups does vary by definition. Females, for example, have more than twice the odds of having a same-sex sexual experience, but only 73 percent higher odds of same-sex attraction (Models 1a and 2a, respectively). After controlling for same-sex experience and attraction, however, women actually are less likely than men to identify as non-heterosexual (with 39 percent lower odds) (Model 3a).

Interaction models also show how the consequences of these different definitions vary simultaneously across race/ethnicity and age cohorts. For ease of interpretation, Figures 2 and 3 (next page) show predicted probabilities of same-sex attraction and non-heterosexual identity by age cohort, gender, and race/ethnicity, respectively. Figure 2 shows that the younger cohorts of Whites, Blacks, and American Indians are more likely to have same-sex attractions, net of same-sex sexual history. However, this pattern is reversed for Asian Americans: for example, 19 percent of the oldest Asian male cohort reports same-sex attraction, which is 10 points greater than the youngest cohort. Figure 3 shows that patterns in sexual identity across age cohorts also are different between Blacks and other groups. For Whites, Asian Americans, Latinos, and American Indians, the youngest cohorts have much higher odds of reporting a non-heterosexual identity, net of same-sex sexual experience and attraction. This may be consistent with the notion that modern society is more accepting of non-heterosexual identities than previous generations, as suggested by both scholarly work and popular news outlets (Connelly 2012; Loftus 2001). For example, 5 percent of the youngest White women report a non-heterosexual identity, which is more than twice the percent of their oldest counterparts. However, older Blacks have higher odds than younger Blacks of reporting a non-heterosexual identity.

Another measurement concern in trying to define sexual minority status is the stability of definitions across time. The second research question explores whether patterns of stability of sexual attraction and identification in a nationally representative sample of young adults over a 14-year period are the same across racial/ethnic groups. Table 3 (p.58) shows odds ratios from logistic regression models of change in

Figure 2. Predicted Probabilities of Same Sex Attraction by Age Cohort, Gender, and Race/Ethnicity

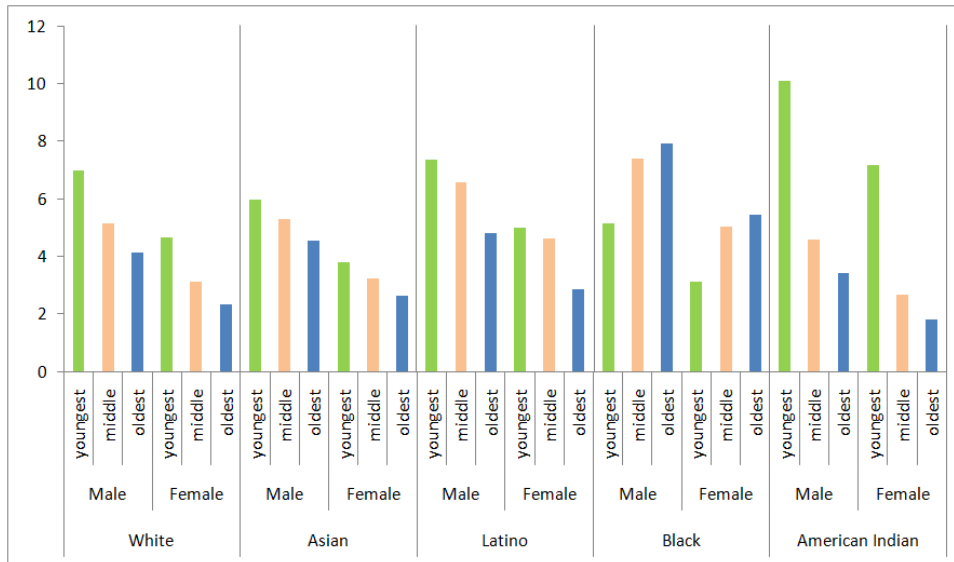


Note: Predicted probabilities were estimated from Table 2, model 2b.

Note: With the exception of race/ethnicity, age cohort, and gender specifications, other variables are set to mean or proportion.

Source: National Survey of Family Growth, 2002 and 2006-2010.

Figure 3. Predicted Probabilities of Non-Heterosexual Identity by Age Cohort, Gender, and Race/Ethnicity



Note: Predicted probabilities were estimated from Table 2, model 3b.

Note: With the exception of race/ethnicity, age cohort, and gender specifications, other variables are set to mean or proportion.

Source: National Survey of Family Growth, 2002 and 2006-2010.

sexual attraction (Models 1a and 1b) and identification (Models 2a and 2b) of individuals followed over time. Models 1a and 2a include variables representing whether the respondent is female and race/ethnicity of respondents. Models 1b and 2b introduce interactions between whether the respondent is female and race/ethnicity. Overall, females have much higher odds of changing sexual attraction (50 percent higher odds from Model 1a) and identification (3 times higher odds from Model 2a) than men. However, patterns also vary by racial/ethnic group, sex, and their intersection. Asian Americans are less likely to change reports of sexual attraction over time. And while women have higher odds of changing reports of sexual

attraction than men, Black women have lower odds of changing their reports of sexual attraction than Black men.

Table 3. Odds Ratios from Logistic Regression Models Showing Change in Sexual Attraction and Identification Over Time

	Change in Attraction		Change in Identification	
	(1a)	(1b)	(2a)	(2b)
Female	1.49*** (0.117)	1.70*** (0.176)	3.03*** (0.272)	3.12*** (0.352)
Race/Ethnicity				
Asian	0.64* (0.153)	0.62 (0.230)	0.82 (0.172)	0.99 (0.318)
Latino	1.20 (0.149)	1.45** (0.268)	0.80 (0.116)	0.60* (0.158)
Black	0.93 (0.098)	1.32* (0.213)	0.85 (0.114)	1.20 (0.270)
Interaction				
Female X Asian		1.07 (0.446)		0.74 (0.315)
Female X Latino		0.71 (0.179)		1.49 (0.385)
Female X Black		0.52*** (0.103)		0.60** (0.138)
Observations	9,416	9,416	9,416	9,416

*** p<0.01, ** p<0.05, * p<0.1

Note: Model 5 is an ordered logistic regression which shows direction in sexual identification, from wave III to wave IV. The variable was coded such that positive change reflects a less heterosexual identity.

Note: American Indians and Native Hawaiian / Pacific Islander were excluded from the analysis due to small sample size.

Source: Waves III and IV of the National Longitudinal Study of Adolescent Health.

Discussion

The main results of this paper show that the racial/ethnic composition of non-heterosexual populations varies significantly, depending on whether these individuals are identified by their sexual behavior, attraction, identity, relationship history or residential status (e.g., cohabiting with a same-sex partner). These different definitions of non-heterosexuality also lead to different estimates of the extent to which racial/ethnic, gender, and age cohorts report sexual minority status. Another complication is the finding that many respondents report different sexual attraction and identity over time, and that these patterns also vary by gender and race/ethnicity, which points to the limits of cross sectional data. Taken together, the findings of this study suggest that large-scale surveys, as well as research using data from these surveys, should consider how the vocabulary of sexuality is not universal and may bias results.

So how can researchers who use large-scale survey data characterize a population that is so difficult to define? Empirical studies from psychology, sociology and anthropology have long argued that the many facets of sexuality are dynamic and vary across global contexts and by many other characteristics

(Blackwood 1986; Blumstein and Schwartz 1976a, 1976b; Goode and Haber 1977; Herdt 1984). Other scholars argue that survey questions, and research that stems from these questions, can essentialize categories of sexuality. Valocchi (2005) argues that survey items are insufficient indicators that cannot capture real or objective social processes, and Gamson and Moon (2004) challenge researchers to be mindful of the ways social categories of sexuality may obfuscate the wide spectrum of situations in which people live. Seidman (1996) states that limited response categories make it difficult to “observe the incongruities between classification systems and individuals’ actual behaviors and even harder to develop alternative classification schemes in the process of the research”, and that “identities are always multiple or at best composites with literally an infinite number of ways in which ‘identity-components’ (e.g., sexual orientation, race, class, nationality, gender, age, able-ness) can intersect or combine”. These arguments form the foundation of Queer theory, which traces its origins from scholarship in the humanities (Fuss 1991) but is now used in the social sciences. Queer theory challenges the “assumption that homosexual theory and politics has its object ‘the homosexual’ as a stable, unified, and identifiable human type...Identity constructions function as templates defining selves and behaviors and therefore exclud[e] a range of possible ways to frame the self, body, desires, actions, and social relations (Seidman 1996).” Moreover, “identities are always on uncertain ground, entailing displacements of identification and knowing” (Stein and Plummer 1996), and “sexual identities, desires, and categories are fluid and dynamic (Gamson and Moon 2004).” Distinct from much research on sexual fluidity, work that relies on Queer theory often challenges the meaning of social categories of sexuality and argues that categories such as ‘gay’ and ‘lesbian’ may reflect a variety of meaning to individuals.

Researchers have long understood the existence of a cultural lag in efforts to operationalize complex facets of sexuality using relatively short survey questions. In light of this consideration, it is imperative that future research addresses methodological concerns explored in this paper. Here, I propose three recommendations. First, research should compare the outcome of interest among populations derived from multiple measures of non-heterosexuality. Since more surveys today contain questions that capture multiple facets of sexuality – sexual experience, attraction, identification, relationship history and cohabitation – scholars can strengthen and broaden arguments if patterns are consistent across these measures, while also avoiding the unintentional association of behaviors with identities (such as defining non-heterosexual populations only by sexual history or cohabitation). If there are different patterns depending on definition, researchers can theorize why there are differences between groups, or why certain groups are not captured by certain definitions. For example, Schilt and Bratter (2015), in an effort to understand how individuals might identify with a transgender category on the US Census, survey attendees at transgender and genderqueer conferences. They find that “gender identity validation,” a term the authors use to describe the process through which individuals “who identified as male or female...felt others viewed them as unequivocally male or female,” shapes the decision to select the transgender category on a survey. Individuals who experienced greater gender identity validation by others were less likely to select the transgender category than those who experienced less gender identity validation. In the context of this study, survey researchers can examine vocabulary that LGB people of color use to describe their sexuality, and how factors such as social networks, media consumption, and interactions with larger LGB-advocacy groups may shape identification patterns.

Second, the intersection, not just the disaggregation, of sexuality, gender, and race/ethnicity should be incorporated into research designs by using interactions between gender and race/ethnicity. Prior qualitative

research from a number of disciplines suggests that common measures of sexuality may vary uniquely by gender and/or race and ethnicity (Diamond 2008; Green 2007; Rust 2000; Seidman 1996). This variation is supported by results in this paper that show statistically significant interaction terms.⁵ It is likely that broad and singular definitions of non-heterosexual populations – even defining non-heterosexuality using questions that ask respondents about sexual identification – will exclude many populations.

Third, researchers should bear in mind the constructed nature of sexuality when interpreting their results. Results from this paper can be used as an illustration of this final point. For most groups, net of same-sex sexual experience and attraction, younger people express more often a non-heterosexual identity (though individuals are more likely to report same-sex attraction and identity when they are slightly older than when they are younger). One explanation may be that society is becoming more accepting of sexual minorities. However, once interactions are introduced between race/ethnicity and age cohorts, the patterns for Blacks are reversed: the youngest Black cohort has significantly lower predicted probabilities of identifying as non-heterosexual than older cohorts. A simple explanation may be that Black communities are socially conservative and young Black sexual minorities may face more discrimination than their peers from other racial/ethnic backgrounds. Indeed, some research explores how Black men are “on the DL,” or “down low,” a term which is used often to describe individuals who are not “out of the closet” or publically disclose an often gay identity (Ford et al. 2007).⁶ This explanation may also potentially explain why older Blacks, who have had more time to negotiate their sexuality, are more willing to embrace a non-heterosexual identity. However, this interpretation imposes a universal definition of sexual identity that is confounded with sexual behavior: individuals who have sex with members of the same sex are gay or lesbian, and that these young Black individuals do not embrace these identities due to social pressures. It may be the case, however, that different notions of sexuality exist among different groups.

As more large-scale survey data asks about facets of sexuality, researchers must be reflective and cautious of measures and interpretations of findings. There is a growing body of literature that analyzes and critiques common measures of other social categories, such as race and ethnicity, and cautions against research that may rely on essentialist arguments with these definitions (Hirschman, Alba, and Farley 2000; Kaplan and Bennett 2003; Zuberi 2001). In the same vein, researchers must be reflective of how they define non-heterosexual populations, if different definitions are comparable and share similar patterns of outcomes of interest, and discuss their findings within the bounds of the limitations of the ability of surveys to capture complex notions of sexuality.

⁵ Small sample sizes are of concern when interactions are introduced; however, this is becoming less of an issue with datasets that can be stacked, therefore resulting in greater sample sizes.

⁶ There are also misleading notions, both in popular culture and academia, that misleadingly associates individuals who are labeled as “DL” with higher incidence of risk sexual behavior (Bond et al. 2009).

References

- Albelda, R., MV Badgett, A. Schneebaum, and G. Gates. 2009. "Poverty in the Lesbian, Gay, and Bisexual."
- Alimahomed, Sabrina. "Thinking outside the rainbow: Women of color redefining queer politics and identity." *Social Identities* 16, no. 2 (2010): 151-168.
- Bauer, G.R., J.A. Jairam, and S.M. Baidoobonso. 2010. "Sexual Health, Risk Behaviors, and Substance Use in Heterosexual-Identified Women With Female Sex Partners: 2002 US National Survey of Family Growth." *Sexually Transmitted Diseases* 37(9):531.
- Bauer, GR, and JA Jairam. 2008. "Are lesbians really women who have sex with women (WSW)? Methodological concerns in measuring sexual orientation in health research." *Women & Health* 48(4):383–408.
- Baumeister, R.F. 2004. "Gender and erotic plasticity: Sociocultural influences on the sex drive." *Sexual and Relationship Therapy* 19(2):133–139.
- Baumeister, R.F. 2000. "Gender differences in erotic plasticity: The female sex drive as socially flexible and responsive." *Psychological Bulletin* 126(3):347.
- Black, D.A., S.G. Sanders, and L.J. Taylor. 2007. "The economics of lesbian and gay families." *The Journal of Economic Perspectives* 21(2):53–70.
- Blackburn, Mollie V. "Agency in Borderland Discourses: Examining Language Use in a Community Center With Black Queer Youth." *Teachers College Record* 107, no. 1 (2005): 89-113.
- Blackwood, E. 1986. *The Many Faces of Homosexuality: Anthropological Approaches to Homosexual Behavior*. Routledge.
- Bond, L. et al. 2009. "Black men who have sex with men and the association of down-low identity with HIV risk behavior." *American Journal of Public Health* 99(S1):S92.
- Bowleg, Lisa. "'Once you've blended the cake, you can't take the parts back to the main ingredients': Black gay and bisexual men's descriptions and experiences of intersectionality." *Sex Roles* 68, no. 11-12 (2013): 754-767.
- Carpenter, C., and G.J. Gates. 2008. "Gay and lesbian partnership: evidence from California." *Demography* 45(3):573–590.
- Chandra, A., V.G. Billioux, and C. Sionean. 2012. "HIV Risk-Related Behaviors in the United States Household Population Aged 15–44 Years: Data from the National Survey of Family Growth, 2002 and 2006–2010." *National Health Statistics Reports* 46.

Clatts, M.C., L.A. Goldsamt, and H. Yi. 2005. "Drug and sexual risk in four men who have sex with men populations: evidence for a sustained HIV epidemic in New York City." *Journal of Urban Health* 82:9–17.

Coker, T.R., S.B. Austin, and M.A. Schuster. 2010. "The health and health care of lesbian, gay, and bisexual adolescents." *Annual Review of Public Health* 31:457–477.

Connelly, Marjorie. 2012. "Poll Finds Support for Contraceptive Policy and Gay Couples." *The New York Times*, February 14 Retrieved March 28, 2012 (<http://www.nytimes.com/2012/02/15/us/politics/poll-finds-support-for-contraception-policy-and-gay-couples.html>).

Diamond, LM. 2008. "Female bisexuality from adolescence to adulthood: Results from a 10-year longitudinal study." *Developmental Psychology* 44(1):5–14. Retrieved June 7, 2011.

Ford, C.L., K.D. Whetten, S.A. Hall, J.S. Kaufman, and A.D. Thrasher. 2007. "Black sexuality, social construction, and research targeting 'The Down Low' ('The DL')." *Annals of Epidemiology* 17(3):209–216.

Fuss, D. 1991. *Inside/out: Lesbian theories, gay theories*. Psychology Press.

Eliason, Michele J., and Kris S. Morgan. "Lesbians define themselves: Diversity in lesbian identification." *International journal of sexuality and gender studies* 3, no. 1 (1998): 47-63.

Galliher, Renee Vickerman, Sharon Scales Rostosky, and Hannah K. Hughes. 2004. "School Belonging, Self-Esteem, and Depressive Symptoms in Adolescents: An Examination of Sex, Sexual Attraction Status, and Urbanicity." *Journal of Youth and Adolescence* 33(3):235–245. Retrieved March 27, 2012.

Gamson, J., and D. Moon. 2004. "The sociology of sexualities: queer and beyond." *Annual Review of Sociology* 30:47–64.

Gates, G. J. 2012. *LGBT Identity: A Demographer's Perspective*, 45 Loy. L.A. L. Rev. 693. Available at: <http://digitalcommons.lmu.edu/llr/vol45/iss3/2>

Gates, G.J., MV Badgett, J.E. Macomber, and K. Chambers. 2007. "Adoption and foster care by gay and lesbian parents in the United States."

Ghaziani, A. 2011. "Post-Gay Collective Identity Construction." *Social Problems* 8(1):99–125. Retrieved June 13, 2011.

Green, A. I. 2002. "Gay but not queer: Toward a post-queer study of sexuality." *Theory and Society* 31(4):521–545.

Green, A. I. 2007. "Queer Theory and Sociology: Locating the Subject and the Self in Sexuality Studies*." *Sociological Theory* 25(1):26–45.

Hallfors, D.D. et al. 2004. "Adolescent depression and suicide risk:: Association with sex and drug behavior." *American Journal of Preventive Medicine* 27(3):224–231.

Harris, K.M. et al. 2009. "The National Longitudinal Study of Adolescent Health: Research Design [WWW document]. URL: <http://www.cpc.unc.edu/projects/addhealth/design>."

Harris, Kathleen Mullan. 2009. "The National Longitudinal Study of Adolescent Health (Add Health), Waves I & II, 1994–1996; Wave III, 2001–2002; Wave IV, 2007–2009 [machine-readable data file and documentation]. Chapel Hill, NC: Carolina Population Center, University of North Carolina at Chapel Hill."

Hirschman, C., R. Alba, and R. Farley. 2000. "The meaning and measurement of race in the US Census: Glimpses into the future." *Demography* 37(3):381–393.

Irwin, T.W., and J. Morgenstern. 2005. "Drug-use patterns among men who have sex with men presenting for alcohol treatment: Differences in ethnic and sexual identity." *Journal of Urban Health* 82:127–133.

Jepsen, L.K., and C.A. Jepsen. 2002. "An empirical analysis of the matching patterns of same-sex and opposite-sex couples." *Demography* 39(3):435–453.

Kaplan, J.B., and T. Bennett. 2003. "Use of race and ethnicity in biomedical publication." *JAMA: the journal of the American Medical Association* 289(20):2709–2716.

King, Brian W. "'Being gay guy, that is the advantage': queer Korean language learning and identity construction." *Journal of Language, Identity, and Education* 7, no. 3-4 (2008): 230-252.

Loftus, Jeni. 2001. "America's Liberalization in Attitudes toward Homosexuality, 1973 to 1998." *American Sociological Review* 66(5):762–782. Retrieved March 28, 2012.

Look, F. 2001. "Same-sex romantic attraction and experiences of violence in adolescence." *Journal Information* 91(6).

Mays, V. M., and S. D Cochran. 2001. "Mental health correlates of perceived discrimination among lesbian, gay, and bisexual adults in the United States." *American Journal of Public Health* 91(11):1869.

Paul, J. P et al. 2002. "Suicide attempts among gay and bisexual men: lifetime prevalence and antecedents." *American Journal of Public Health* 92(8):1338.

Rahman, Momin. "Queer as intersectionality: Theorizing gay Muslim identities." *Sociology* 44, no. 5 (2010): 944-961.

Rosenfeld, M.J. 2007. *The age of independence: Interracial unions, same-sex unions, and the changing American family*. Harvard Univ Pr.

Rosenfeld, M.J., and B.S. Kim. 2005. "The independence of young adults and the rise of interracial and same-sex unions." *American Sociological Review* 70(4):541–562.

- Russell, S.T., T.J. Clarke, and J. Clary. 2009. "Are teens 'post-gay'? Contemporary adolescents' sexual identity labels." *Journal of Youth and Adolescence* 38(7):884–890.
- Russell, S.T., A.K. Driscoll, and N. Truong. 2002. "Adolescent same-sex romantic attractions and relationships: Implications for substance use and abuse." *Journal Information* 92(2).
- Russell, S.T., and K. Joyner. 2001. "Adolescent sexual orientation and suicide risk: Evidence from a national study." *Journal Information* 91(8).
- Russell, S.T., H. Seif, and N.L. Truong. 2001. "School outcomes of sexual minority youth in the United States: Evidence from a national study." *Journal of Adolescence* 24(1):111–127.
- Rust, P.C. 2000. *Bisexuality in the United States: A Social Science Reader*. Columbia Univ Pr.
- De Santis, J.P., J.M. Colin, E.P. Vasquez, and G.C. McCain. 2008. "The relationship of depressive symptoms, self-esteem, and sexual behaviors in a predominantly Hispanic sample of men who have sex with men." *American Journal of Men's Health* 2(4):314–321.
- Savin-Williams, R. C. 2006. *The New Gay Teenager*. Harvard Univ Pr.
- Savin-Williams, R. C, K. Joyner, and G. Rieger. 2012. "Prevalence and Stability of Self-Reported Sexual Orientation Identity During Young Adulthood." *Archives of Sexual Behavior* 1–8.
- Savin-Williams, R.C., and G.L. Ream. 2007. "Prevalence and stability of sexual orientation components during adolescence and young adulthood." *Archives of Sexual Behavior* 36(3):385–394.
- Schilt, Kristen, and Jenifer Bratter. "From Multiracial to Transgender? Assessing Attitudes toward Expanding Gender Options on the US Census." *TSQ: Transgender Studies Quarterly* 2, no. 1 (2015): 77-100.
- Seidman, S. 1996. *Queer Theory/Sociology*. Wiley-Blackwell.
- Sell, R. 2007. "*GayData.org: Data Sources*."
- Stall, R. et al. 2001. "Alcohol use, drug use and alcohol-related problems among men who have sex with men: the Urban Men's Health Study." *Addiction* 96(11):1589–1601.
- Stall, R. et al. 2003. "Association of co-occurring psychosocial health problems and increased vulnerability to HIV/AIDS among urban men who have sex with men." *Journal Information* 93(6).
- Strathdee, S.A., and S.G. Sherman. 2003. "The role of sexual transmission of HIV infection among injection and non-injection drug users." *Journal of Urban Health* 80.

U.S. Census Bureau. 1990. "U.S. Census, 1990."

U.S. Census Bureau. 2000. "U.S. Census, 2000."

Valocchi, S. 2005. "Not Yet Queer Enough." *Gender & Society* 19(6):750.

Zuberi, T. 2001. *Thicker than Blood: How Racial Statistics Lie*. Univ of Minnesota Pr.

Appendix

Table A. Summary Statistics from the National Survey of Family Growth, 2002, 2006 – 2010

	Any same-sex activity			Any same-sex attraction		Identifies as non-heterosexual		Identifies as gay / lesbian	
	N	Percent	Standard Deviation	Percent	Standard Deviation	Percent	Standard Deviation	Percent	Standard Deviation
White	13,736	10.05	30.07	12.31	32.86	4.47	20.67	1.33	11.45
Asian	821	2.41	15.34	13.57	34.27	2.45	15.48	1.32	11.42
Latino	1403	3.89	19.34	8.26	27.54	3.02	17.11	0.86	9.24
Black	4185	8.42	27.78	10.74	30.97	4.57	20.90	1.60	12.55
<i>Male</i>									
White	3856	5.77	23.33	6.53	24.70	3.28	17.81	1.70	12.92
Asian	302	3.13	17.44	12.52	33.15	3.46	18.31	2.61	15.96
Latino	629	3.92	19.42	8.33	27.65	2.95	16.93	0.72	8.44
Black	1017	3.18	17.56	5.46	22.75	2.73	16.31	1.82	13.38
<i>Female</i>									
White	9880	14.51	35.22	18.33	38.70	5.72	23.22	0.94	9.66
Asian	519	1.68	12.86	14.63	35.40	1.42	11.86	2.60	15.86
Latino	774	3.86	19.27	8.19	27.44	3.08	17.29	1.01	10.00
Black	3168	12.82	33.44	15.16	35.87	6.11	23.96	1.42	11.82

Note: All percent averages and standard deviations are weighted. Ns are not weighted.

Table B. Summary Statistics from the National Longitudinal Study of Adolescent Health

	Cohabiting with same-sex partner			Same-sex, non-cohabiting relationship	
	N	Percent	Standard Deviation	Percent	Standard Deviation
White	8133	1.57	12.45	2.09	14.31
Asian	829	1.33	11.45	2.53	15.72
Latino	2299	2.44	15.42	3.35	18.00
Black	2979	1.61	12.59	2.58	15.87

Note: All percent averages and standard deviations are weighted. Ns are not weighted.