

## “She can’t help it, she was born that way”: Adolescents’ beliefs about the origins of homosexuality and sexual prejudice

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**Título:** “No puede evitarlo, nació así”. Las creencias de los adolescentes sobre el origen de la homosexualidad y el prejuicio sexual.

**Resumen:** En este trabajo se examinaron las creencias de los adolescentes (N=1069) sobre el origen de la homosexualidad y cómo estas creencias se relacionan con sus juicios y razonamientos acerca de la homosexualidad, su grado de bienestar al interactuar con adolescentes gays y lesbianas, y sus juicios y razonamiento sobre la manera en que deben ser tratados. A partir del análisis de clases latente se establecieron cuatro perfiles sobre las creencias acerca del origen de la homosexualidad: elección/socialización temprana, elección, socialización y origen biológico. Los resultados muestran que los adolescentes que se basan en la socialización para explicar el origen de la homosexualidad tienden a evaluarla negativamente, se sienten menos cómodos al interactuar con iguales gays y lesbianas, y no suelen considerar que la exclusión y las burlas hacia gays y lesbianas sean algo negativo. En cambio, los adolescentes que utilizan argumentos biológicos tienden en menor medida a evaluar la homosexualidad como algo negativo, se sienten más cómodos al interactuar con gays y lesbianas y es más probable que evalúen la exclusión y las burlas como algo negativo. Además, los resultados muestran que las creencias sobre el origen se relacionan también con el tipo de razonamiento (moral, convencional, personal) que emplean los adolescentes ante estas cuestiones.

**Palabras clave:** Prejuicio sexual; creencias; adolescentes; homosexualidad.

**Abstract:** This paper examined differences in American adolescents’ ( $n = 1069$ ) beliefs about the origins of homosexuality and how these beliefs related to adolescents’ judgments and reasoning about homosexuality, their comfort interacting with lesbian and gay peers, and their judgments and reasoning about the treatment of lesbian and gay peers. Using Latent Class Analysis four origins cluster profiles were determined (choice/early socialization, choice, socialization, and biological). Results provide evidence that adolescents endorsing socialization beliefs about the origins of homosexuality were more likely to evaluate homosexuality as wrong, least comfortable interacting with lesbian and gay peers, and least likely to evaluate exclusion and teasing a lesbian or gay peer as wrong. Conversely, adolescent endorsing biological beliefs were least likely to evaluate homosexuality as wrong, most comfortable interacting with lesbian and gay peers, and most likely to evaluate exclusion and teasing as wrong. Further, the results provide evidence that origins beliefs were also related to the type of reasoning (moral, conventional, personal) that adolescents bring to bear on these issues.

**Key words:** Sexual prejudice; beliefs; adolescents; homosexuality.

### Introduction

Negative attitudes about gay and lesbian people are quite prevalent in our society (Baker & Fishbein, 1998; Bochenek & Brown, 2001; Marsiglio, 1993; Morrison, McLeod, Morrison, & Anderson, 1997; Price, 1982; Rivers & D’Augelli, 2001; Van de Ven, 1994) and are related to a number of factors such as an individuals’ gender (Herek 1988; 1994; Kite, 1994; Whitley, 1988), gender role attitudes (Herek, 1988), religious fundamentalism (Herek, 1987; Wood & Bartowski, 2004), political conservatism (Wood & Bartowski, 2004); and a host of other factors (for a review, see Herek 1994). More recently, particularly with the advent of research on the biological and genetic origins of sexual orientation, researches have also been investigating the relationship between individuals’ beliefs about the etiology of homosexuality and sexual prejudice (Haslam & Levy, 2006; Hegarty, 2002; Hegarty & Pratto, 2001; Jayratne, Ybarra, Sheldon, et al, 2006; Sheldon, Pfeffer, Jayaratne, et al, 2007). Overwhelmingly, this research provides evidence that individuals who believe homosexuality is biological or genetic, and therefore immutable, hold more favorable attitudes about lesbian and gay people (Haslam & Levy, 2006; Hegarty, 2002; Hegarty & Pratto, 2001). Conversely, individuals who believe homosexuality is

a lifestyle choice or learned, and therefore mutable, hold more negative attitudes about lesbian and gay people (Haslam & Levy, 2006; Hegarty, 2002; Hegarty & Pratto, 2001). This research, however, has been conducted solely with college age and adult samples.

Research on the development of sexual prejudice in adolescence provides some evidence that older adolescents are more likely than younger adolescents to believe that homosexuality is biological or genetic and that older adolescents exhibit lower levels of sexual prejudice than younger adolescents on some but not all measures of prejudice (Horn, 2006). To our knowledge, no one has investigated the relationship between beliefs about the origins of homosexuality and sexual prejudice in adolescence, a time when individuals may be forming these beliefs. In this paper, we sought to investigate the relationship between beliefs about the origins of homosexuality and sexual prejudice in adolescence.

While there is considerable consistency in results across studies investigating the relationships between beliefs about the origins of homosexuality (beliefs) and individuals’ attitudes about lesbian and gay people, very few of the studies measure beliefs in the same way. Studies utilize measures related to biological or genetic origins (Hegarty & Golden, 2008; Jayratne, Ybarra, Sheldon, et al, 2006; Sheldon, Pfeffer, Jayaratne, et al, 2007), controllability (Whitley, 1990), mutability (Hegarty, 2002; Hegarty & Pratto, 2001), and/or fundamentalness or essentialness (Haslam & Levy 2006; Hegarty, 2002) of sexual orientation. Despite this diversity in measures, however, most studies utilized theoretically deter-

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mined items regarding beliefs (based on attribution theory or essentialism) and tended to compare beliefs related to the immutability of sexual orientation (e.g. sexual orientation is not something that can change, biological, genetic) to beliefs related to sexual orientation as a lifestyle choice (e.g. sexual orientation can be controlled or changed). In a qualitative study investigating individuals' lay theories about the etiology of sexual orientation, however, Sheldon and colleagues (2007) found that individuals held a diversity of beliefs about the origins of sexual orientation, such as genetics, upbringing, trauma or abuse, influence of other homosexuals, and choice. This research suggests that individuals' theories about the origins of homosexuality are more multifaceted than the biological/choice continuum and that these beliefs may be differentially related to individuals' attitudes. In fact, Hegarty (2002) suggests that relying on a single item or unidimensional beliefs scale severely limits our understanding of the complex ways in which beliefs influence individuals' attitudes about sexual orientation.

Another limitation of the extant research on sexual orientation beliefs is that individuals are categorized as endorsing either one type of belief (biological) or another (choice). While it may be the case that individuals' beliefs coalesce around one type of etiological factor, it is also likely that individuals may hold more than one belief (early upbringing and choice) or that they may even endorse conflicting beliefs (biological and choice). Given the limits of the current research, we do not know the influence of holding multiple beliefs about the origins of sexual orientation on attitudes about lesbian and gay people. Adolescents may be particularly likely to hold multiple and even conflicting beliefs due to the fact that most young people are just beginning to develop an understanding of their own and others' sexuality, to learn about sexual orientation, and to form opinions about the origins of sexual orientation during this developmental period. Due to this, in the current study, we included a variety of beliefs regarding the origins of homosexuality (e.g. biological, parental socialization, choice) and allowed adolescents to choose multiple items that accurately reflected their beliefs.

In addition to predominantly utilizing unidimensional measures of sexual orientation beliefs, most of the extant research also utilizes unidimensional measures of attitudes about lesbian and gay people. In fact, in a majority of studies, investigators used the Attitudes Toward Lesbians and Gays (Herek, 1984) measure. While this is a highly reliable and valid measure (Herek, 1984), Horn (2006, 2008; Horn & Szalacha, 2009) and others (Haddock, & Zanna, 1994; Kite & Whitley, 1994; Herek, 2000; Simon, 1998; Strand, 1998; Van de Ven, 1994) have argued that unidimensional measures tend to conflate distinct types of sexual prejudice. These investigators provide evidence that sexual prejudice is a multifaceted phenomenon and that demographic and contextual factors differentially relate to the various dimensions of sexual prejudice. Further, Horn (Horn, 2006, 2008; Horn, Szalacha, & Drill, 2008) provides evidence that different dimen-

sions of sexual prejudice draw upon distinct domains of social reasoning (Turiel, 1983, 1998). For example, in a study investigating adolescents' beliefs about the acceptability of homosexuality (is it wrong or all right), as well as their judgments regarding excluding or teasing a gay and lesbian peer, Horn, Szalacha, & Drill (2008) found that individuals' utilized predominantly moral reasoning (e.g. statements about harm to individuals and fairness) in making their judgments about exclusion and teasing, but were much more likely to use conventional reasoning (e.g. against the rules of my religion), informational assumptions (e.g. homosexuality is disgusting/unnatural), and stereotypes (e.g. gay people caused AIDS to exist) in making their judgments regarding the acceptability of homosexuality (wrongness).

Because of the predominant use of a single measure of attitudes in studies investigating sexual orientation beliefs and attitudes, however, we do not know how sexual orientation beliefs relate to different dimensions of sexual prejudice. It could be the case that individuals' beliefs about the acceptability of homosexuality are strongly related to their beliefs about the etiology of homosexuality, but that these beliefs relate less to individuals' judgments regarding the treatment of individuals. In a public opinion poll study utilizing the Oklahoma City Survey, Wood and Bukowski (2004) found that biological beliefs about the origins of homosexuality predicted individuals' gay stereotypes and their support for gay rights, but not their homophobia (a measure of the desire to maintain social and physical distance for lesbian and gay people) providing some support for the idea that sexual orientation beliefs may be related to some measures of sexual prejudice but not others. To investigate this, in the current study, we included a number of measures of sexual prejudice. These measures included judgments about the acceptability of homosexuality, comfort interacting with lesbian and gay peers in a variety of school contexts, and judgments about the treatment of a lesbian or gay peer at school (exclusion and teasing).

Additionally, we also included measures of adolescents' reasoning as to why they believed homosexuality was wrong or acceptable, as well as why they felt excluding or teasing a lesbian or gay peer was all right or wrong. We included measures of reasoning to investigate whether adolescents' beliefs about the origins of homosexuality were related to their justifications regarding the acceptability of homosexuality and the treatment of lesbian and gay peers in school.

### Current Study

We administered a self-report questionnaire to fourteen- to eighteen- year olds (ninth- through twelfth-grade students) attending two different high schools in or near a large Midwestern city. We allowed adolescents to choose from a number of statements regarding the origins of homosexuality, including such reasons as genetics/biology, choice, and parental socialization. Adolescents could choose as many reasons as they wished. Additionally, because we were interested in

relationships between adolescents' beliefs about the origins of homosexuality and range of dimensions of sexual prejudice we included a number of different outcomes measures in the study. We were interested in measures that assessed individual attitudes and beliefs, as well as adolescents' judgments regarding social interactions with lesbian and gay peers. We assessed adolescents' attitudes about the acceptability of homosexuality (is it wrong or all right), as well as the reasoning they applied to these judgments. In relation to social interaction measures, we first assessed adolescents' comfort interacting with lesbian and gay peers. Then, we assessed adolescents' judgments regarding excluding and teasing lesbian and gay peers at school, as well as the reasoning adolescents' applied to these judgments.

We had a number of hypotheses for this study. Based on the extant research, we expected that biological beliefs would be related to evaluating homosexuality as acceptable, as well as using fewer stereotypes and informational assumptions. We also hypothesized that biological beliefs would be related to higher levels of comfort interacting with lesbian and gay peers and to judgments that excluding and teasing a gay or lesbian peer is wrong, and the use of more moral reasoning and less conventional reasoning in justifying those judgments. We also hypothesized that people who believed that homosexuality is a choice or results from some kind of socialization or would be more likely to judge homosexuality as wrong. Because most of the extant research has pitted biological beliefs against choice beliefs and utilized a forced choice type of methodology in determining individuals' beliefs, we did not know what to expect in terms of the structure of individuals' origins beliefs. We did expect, however, that older adolescents would be more likely to hold biological beliefs than younger adolescents.

## Method

### Participants and Procedures

One thousand sixty-nine adolescents (Female,  $n = 639$ ; Male,  $n = 430$ ) attending two different schools participated in the study. The sample consisted of ninth- (194 male, 288 female,  $M$  age = 15.0) tenth- (111 male, 166 female,  $M$  age = 15.8) eleventh (72 male, 122 female,  $M$  age = 16.8) and 12th-grade (53 male, 61 female,  $M$  age = 17.8) students. Students attended either an urban college preparatory high school located within the downtown area of a large Midwestern city in the United States ( $n = 575$ ), or a larger suburban high school located just outside of a large Midwestern city in the United States ( $n = 494$ ). The urban school had a competitive enrollment admissions procedure and drew students from all over the city while the suburban school was located in a predominantly middle-class suburb but drew students from three predominantly working- and middle-class suburbs within the township. The urban school had a very low dropout rate (1.3%), very few students with a limited proficiency in English (.8%), and a majority of students from low in-

come families (65.1%). The suburban school had a higher dropout rate (4.6%), more students with a limited proficiency in English (11.1%), and less than a third of students from low income families (27.7%). Because of these differences and because significant school differences related to adolescents' sexual prejudice have been reported elsewhere (Horn & Szalacha, 2009), in the current study we controlled for school by including it as a covariate.

Only those students with parental consent and who provided individual assent participated. Parental consent was secured using parent notification letters and passive consent. That is, parents who did not want their adolescent to participate in the study needed to return the consent form indicating as such. All other students were included in the study. Student assent was determined at the time of the survey distribution. Those students not participating in the survey completed an alternative educational assignment. Six parents opted their adolescents out of the survey and another 24 students chose not to participate resulting in an overall response rate of 97%. We excluded 17 participants because they identified as other than heterosexual.

Participants completed the questionnaire in either their required advisory period (homeroom) or in their required English, health, or social studies class. Participants were first asked their beliefs about the origins of homosexuality. Participants then responded to a series of questions regarding how comfortable they would be interacting with gay or lesbian peers in various school contexts (comfort). Participants also responded to whether or not they thought it was wrong to be gay or lesbian (attitudes) and why (attitude justification). Finally, participants evaluated a series of hypothetical scenarios regarding whether or not excluding or teasing a gay

### Measures

*Origins of homosexuality.* To measure adolescents' beliefs about how someone becomes gay or lesbian (*origins*) they were asked "How do you think someone becomes gay or lesbian?" and provided with a list of 8 possible reasons from which they could choose all those that fit their beliefs (for a list of reasons, see Table 1). The reasons given were generated based on prior studies on beliefs about sexuality as well pilot interviews with 40 college students. Participants could choose more than one response.

*Attitudes measures.* To measure students' attitudes regarding homosexuality (*attitudes*), they were asked "Do you think homosexuality is all right or wrong?" Responses were given on a five-point Likert scale response (1 = completely wrong, 3 = neither right nor wrong, 5 = completely all right). We also asked participants to choose from a list of 18 statements the reasons for why they thought homosexuality was right or wrong (*attitude justification*). The reasons given for this question were developed from an open ended interview study with college students that elicited a range of reasons participants spontaneously reported and were informed by social cognitive domain theory (Turiel, 1983; 2006) as well as re-

search on sexual prejudice and stereotypes. Participants could choose more than one response. The eighteen reasons were collapsed into five conceptual categories and then confirmed using principal components analyses (see Horn, Szalacha, & Drill, 2008): Human/individual rights, biological/genetic, informational assumptions (homosexuality not natural/normal), religious opposition, stereotypes (See Table 2 for a description of these categories). Participants' acceptability justification scores were calculated based on the proportion of their response that fell into each category.

**Table 1:** Justification Response Categories for Origins of Homosexuality.

Origins Category	Justification Response
Biological/Genetic predisposition	"Born that way"
Parental Socialization	"How the person was raised by their parents"
Contagion	"Hanging around other gay people"
Cross-gender friends	"Hanging around primarily with people of the opposite sex"
Childhood trauma	"Victim of sexual abuse"
Cross-gender activities	"Participating in activities that are not typical of people of the person's own sex"
Choice	"Person chooses to be gay or lesbian"
Other	"Please answer in one or two sentences"

**Table 2:** Adolescents' belief categories regarding the acceptability/ wrongness of homosexuality.

Factor	Justification Responses
Individual Rights	Whether or not someone else is gay or lesbian is no one else's business; people should be allowed to love whomever they wish; people who are old enough should be allowed to have consensual sex with whomever they wish; gay and lesbian people are also God's children; gay and lesbian people are just like anyone else; people have the right to be whoever they want
Religious Convention	Against God's law; goes against scripture; goes against the beliefs of my religion
Biological	People are born gay or lesbian; being gay or lesbian is not a matter of choice, you are who you are
Natural Order/Norms	It is unnatural; it is disgusting; it goes against the norms of society
Negative Stereotypes	Gay and lesbian people are more likely than others to engage in sexual abuse or rape; gay and lesbian people caused AIDS to exist

*Social interaction measures.* We measured participants' judgments and reasoning about social interaction in two ways. First, we measured their comfort interacting with gay and lesbian peers in various school contexts (*comfort judgments*). Participants were asked to respond to 10 questions about their attitudes toward having gay and lesbian peers in a variety of school contexts. For example, students responded to questions such as "Having a gay or lesbian student in my English class would be...". They responded using a five-point Likert scale (1 = okay, it would not bother me at all; 5 = really bad, it would bother me a lot). A mean comfort score was then determined by averaging participants' ratings across the 10 questions. Scores could range from 1 (extremely un-

comfortable) to 5 (extremely comfortable). The reliability coefficient for the 10 comfort items, computed using the formula for Cronbach's alpha (Crocker & Algina, 2008), was .966.

We also asked participants to render judgments regarding different types of intergroup interactions with gay and lesbian peers. Participants were presented with two scenarios depicting either a gay or lesbian character who was excluded or teased by his/her peers. For example, "George is a gay male high school student. He plays on the school baseball team. He is a "B" student. He dresses and acts like most of the other guys at school. To all outward appearances, he seems just like any other male at the school." Participants were asked to evaluate whether or not they thought it was right or wrong (*treatment judgments*) for the students to exclude, tease, or include the target individual. Judgments were assessed on a five-point Likert scale (1 = completely wrong; 3 = neither right nor wrong; 5 = completely all right). Additionally, for each story we asked participants to choose, from a set of eleven responses (*treatment justifications*), the reasons that best reflected their opinion for why they thought the action (exclusion, teasing, inclusion) was right or wrong. For example, "It is unfair/hurtful to him" (see Table 3 for a complete list). The responses used were developed from open ended interviews with college students and informed by social cognitive domain theory (Turiel, 1983; Turiel et al., 1991), as well as prior work on sexual prejudice (Herek, 1994). Participants could choose more than one response. These eleven choices were then collapsed into four conceptual categories based on social cognitive domain theory: moral justification (fairness, human equality, belonging, religious human equality), conventional justification (affirms norms, negates norms, God's law), personal justification (personal choice) and informational assumptions (unnatural, hit on, think gay). Scores were calculated as the proportion of a participant's response that fell into each of the four categories. Log-linear transformations were conducted on the proportional scores to adjust for non-normality (see Winer, 1971; Winer, Brown, & Michels, 1991).

**Table 3:** Justification response categories for why it is right or wrong to exclude, tease, or include

Justification Category	Responses
Moral	"It is unfair/hurtful to him." "We should treat others as we wish to be treated ourselves." "God teaches us that we should treat others as we wish to be treated ourselves." "People need to feel like they belong"
Conventions	"He dresses or acts the way a guy in our society should." "He doesn't dress or act the way a guy in our society should." "He is going against God's law or the laws of my religion."
Personal Choice	"Who you hang out with is a matter of personal choice."
Informational Assumptions	"He is being unnatural/disgusting." "He might hit on them/be attracted to them." "People might think they are gay if they don't."

## Results

### Data Analysis Plan

First, using Latent Class Analysis we investigated the structure of adolescents' beliefs about etiology of homosexuality and created "profiles" of different structural organizations of adolescents' beliefs. Then, to investigate the relationship between grade and beliefs about origins we conducted chi-squared analyses. Finally, to investigate the relationship between beliefs about the origins of homosexuality and different measures of sexual prejudice we conducted a series of ANOVA's and repeated measures ANOVA's using cluster profile and grade as predictors. In these analyses we also co-varied gender and school as they have been found to relate to sexual prejudice in previous studies (Horn, 2006, Horn & Szalacha, 2009). Follow-up tests of simple effects were conducted using Bonferroni tests or a Bonferroni adjustment was made (pair-wise tests) to maintain a family-wise error rate of  $p < .05$ .

### Cluster Analysis

We analyzed adolescents' responses to the origins question using Latent Class (LC) Analysis (Green, 1951; Magidson & Vermunt, 2001) to determine if specific origins "profiles" emerged and whether these profiles differed by age. We used Latent Gold to analyze responses to the seven origins measures, while co-varying gender and school. Our analyses suggested a 5-class model provided the most parsimonious model with an acceptable fit ( $L^2 = 478.98$  with 461 d.f.;  $p = .27$ ).<sup>1</sup> Wald statistic significance tests of each indicator signified that each origin choice contributed towards discrimination between clusters (Biological/Genetic predisposition: Wald = 48.45,  $p < .001$ ; Parental Socialization: Wald = 67.22,  $p < .001$ ; Contagion: Wald = 30.75,  $p < .001$ ; Cross-gender friends: Wald = 60.21,  $p < .001$ ; Childhood trauma: Wald = 33.03,  $p < .001$ ; Cross-gender activities: Wald = 38.80,  $p < .001$ ; Choice: 74.51,  $p < .001$ ). Given the similarities between the Choice/Socialized and Socialized clusters and after reviewing the response patterns for each, we collapsed the two clusters into a general "Socialization" class leaving us with four classes. Conditional probabilities used in our interpretation between response patterns are shown in table 4. The four profiles of origins beliefs and percentage of respondents contained within each class include "Choice/Sexual Abuse" (26.8% of cases – Class 1), "Choice" (25.0% – Class 2), "Biological" (24.3% – Class 3) and "Socialized" (24.0% – Class 4) with an expected misclassification rate of 17%.

### Grade Differences in Adolescents' Origins Beliefs Profiles

We expected grade differences to be related to origins beliefs, specifically that older adolescents would be more likely to endorse biological origins of homosexuality. We ran chi-square tests to measure differences between the observed cluster frequencies and the frequencies expected if cluster membership remained constant across grade. Overall, there was a significant association between grade level and cluster membership  $\chi^2(9) = 70.88$ ,  $p < .001$ . Changes in cluster membership occurred across grade for the Choice/Sexual Abuse, Biological and Socialization clusters,  $\chi^2(3) = 8.40$ ,  $p < .05$ ,  $\chi^2(3) = 35.92$ ,  $p < .001$  and  $\chi^2(3) = 22.22$ ,  $p < .001$ , respectively (see Table 5). Choice cluster membership, however, did not vary significantly across grade  $\chi^2(3) = 4.38$ ,  $p = ns$ .

Examination of standardized residuals allowed for finer discrimination of cluster membership between grades. Consistent with our hypotheses, freshman were underrepresented ( $\bar{z} = -4.4$ ,  $p > .05$ ) in the biological cluster with juniors being over-represented ( $\bar{z} = 3.2$ ,  $p > .05$ ) in this cluster. Residuals for sophomores and seniors also supported an increase in proportion in the biological cluster by age, however their  $z$  values did not reach significance ( $\bar{z} = 1.9$  and  $\bar{z} = 2.2$ , respectively). Finally, as expected, freshman were over-represented in the socialization cluster ( $\bar{z} = 3.2$ ,  $p > .05$ ), while fewer sophomores and seniors were members of this cluster. Unexpectedly, seniors were over-represented in the Choice/Sexual Abuse cluster ( $\bar{z} = 2.2$ ,  $p > .05$ ).

### Acceptability of Homosexuality

We expected to find origins-related differences in attitudes about homosexuality. We hypothesized that biological beliefs would be related to evaluating homosexuality as acceptable, while those who believed that homosexuality was a choice or resulted from some kind of socialization would be more likely to judge homosexuality as wrong. Given that we found age-related differences in adolescents' beliefs about the etiology of homosexuality, we were unsure whether or not age would also be independently related to attitudes about homosexuality. To investigate the relationship between origins, grade and evaluative judgment of homosexuality a 4 (origins: Choice/Sexual abuse, Choice, Biological, Socialized) x 4 (grade: freshman, sophomore, junior, senior) ANCOVA was performed on participants' mean attitude judgments. We controlled for gender and school by including them as covariates. The analysis revealed a significant main effect for origins cluster  $F(3, 1137) = 22.39$ ,  $p < .001$ ,  $\eta^2 = .056$ , however the effect for grade was not significant and no interactions were significant.

Follow-up tests of simple effects provided support for our hypotheses. Overall, respondents in the biological cluster judged homosexuality to be more acceptable ( $M = 3.61$ ,  $SE = .08$ ) and less wrong than participants belonging to all other

<sup>1</sup> We initially considered solutions from one to eight latent classes.

clusters (Choice  $M = 2.91$ ,  $SE = .08$ ,  $p < .05$ ; Choice/Sexual abuse  $M = 2.81$ ,  $SE = .08$ ,  $p < .05$ ; Socialized  $M = 2.61$ ,  $SE = .08$ ,  $p < .05$ ). Choice and Choice/Sexual Abuse clusters

did not differ, however both reported significantly more positive attitudes than those in the Socialized cluster ( $p < .05$ ).

**Table 4:** Latent class analysis of origin responses – four class solution.

Origin	Latent Class			
	Class 1 (Choice/ Early Socialization)	Class 2 (Choice)	Class 3 (Biological)	Class 4 (Socialization)
Percentage of sample	26.8	25.0	24.3	24.0
Conditional probabilities of origin choices (given cluster membership)				
Biological/Genetic predisposition	0.3944	0.0049	<b>0.8786</b>	.3404
Parental Socialization	0.4871	0.0011	0.0724	<b>.5975</b>
Contagion	0.2374	0.0003	0.0003	<b>.5224</b>
Cross-gender friends	0.1031	0.0047	0.024	<b>.5701</b>
Childhood trauma	<b>0.5739</b>	0.0023	0.0743	.3144
Cross-gender activities	0.0414	0.0016	0.003	.3939
Choice	<b>0.7787</b>	<b>0.9964</b>	0.2098	<b>.6169</b>

Note. Conditional probabilities used to interpret latent classes are given in bold.

### Justification for Why Homosexuality is Wrong

In regard to the reasons why participants felt that homosexuality was wrong or not wrong, we expected that subjects endorsing biological origins would be more likely to justify their judgment of the acceptability of homosexuality using biological or human rights arguments and less likely to use stereotypes or informational assumptions. Conversely, we expected respondents endorsing socialization origins of homosexuality would be more likely to justify their judgment with stereotypes or informational assumptions. To investigate these relationships we conducted a 4 (origins: Choice/Sexual Abuse, Choice, Biological, Socialized) x 4 (grade: freshman, sophomore, junior, senior) x 5 (acceptability justification: Biological/genetic, informational assumptions, stereotypes, religious opposition, human/individual rights) ANCOVA with attitudes justification as the repeated measure and gender and school as covariates. The analysis revealed a significant main effect for acceptability justification  $F(4, 1160) = 16.67$ ,  $p < .001$ ,  $\eta^2 = .014$  as well as a two-way interaction between origins cluster and acceptability justification  $F(12, 1160) = 11.85$ ,  $p < .001$ ,  $\eta^2 = .030$ .

Overall, adolescents used predominantly human/individual rights reasons to justify their judgments

about the acceptability of homosexuality. Within this general pattern of results, consistent with our expectations, adolescents' from the biological cluster used predominantly human/individual rights ( $M = .10$ ,  $SE = .00$ ) followed by biological ( $M = .09$ ,  $SE = .00$ ,  $p < .05$ ) options to justify their judgments regarding the acceptability/wrongness of homosexuality. Biological cluster participants also used biological/genetic justifications more than all three other clusters (Choice/Sexual Abuse  $M = .05$ ,  $SE = .00$ ,  $p < .05$ ; Choice,  $M = .04$ ,  $SE = .01$ ,  $p < .05$ ; Socialization  $M = .04$ ,  $SE = .01$ ,  $p < .05$ ). Socialized cluster respondents, however, used stereotypes ( $M = .08$ ,  $SE = .01$ ) and religious opposition ( $M = .08$ ,  $SE = .01$ ) justifications more frequently than human/individual rights ( $M = .07$ ,  $SE = .01$ ,  $p < .05$ ), biological/genetic ( $M = .04$ ,  $SE = .01$ ,  $p < .05$ ) and informational assumption ( $M = .02$ ,  $SE = .00$ ,  $p < .05$ ) justifications. Although the data did not support our belief that members of the socialization cluster would use more informational assumption justifications than other justifications, socialization cluster respondents did use informational assumption justifications more often than any other cluster (Biological,  $M = .00$ ,  $SE = .00$ ,  $p < .05$ ; Choice  $M = .01$ ,  $SE = .00$ ,  $p < .05$ ; Choice/Sexual Abuse,  $M = .01$ ,  $SE = .00$ ,  $p < .05$ ).

**Table 5:** Grade differences in adolescents' origins beliefs profiles.

Origin	Grade					Total (% of total)
	Freshmen	Sophomores	Juniors	Seniors		
Choice/Sexual Abuse	130 (.25) [.0]	76 (.26) [.2]	41 (.19) [-1.9]	43 (.35) [2.2]	290 (25%)	
Choice	166 (.32) [1.4]	82 (.28) [-.3]	57 (.26) [-.7]	27 (.22) [-1.4]	332 (29%)	
Biological	82 (.16) [-4.4]	92 (.31) [1.9]	79 (.36) [3.2]	41 (.33) [1.8]	294 (25%)	
Socialized	144 (.28) [3.2]	47 (.16) [-2.0]	42 (.19) [-.6]	12 (.10) [-2.7]	245 (21%)	
Total (% of total)	522 (45%)	297 (25%)	219 (19%)	123 (11%)	1161	

Note.

Parentheses in table reflect proportion within grade  
Brackets in table contain standardized residuals

### Comfort Interacting with Lesbian or Gay Peers

We expected clusters and grade to be related to adolescents' comfort interacting with gay and lesbian peers. To investigate whether those with different origins' beliefs were more comfortable interacting with lesbian and gay peers, we conducted a 4 (origins: Choice/Sexual Abuse, Choice, Biological, Socialized) x 4 (grade: freshman, sophomore, junior, senior) univariate ANCOVA on participants' mean comfort scores, controlling for gender and school. The analysis revealed a main effect for both origins cluster  $F(3, 1143) = 18.17, p < .001, \eta^2 = .046$  and grade  $F(3, 1143) = 3.70, p < .01, \eta^2 = .010$ , however the interaction between grade and cluster was not significant. Participants reporting socialized beliefs regarding origins were the least comfortable ( $M = 3.38, SE = .10$ ) interacting with gay and lesbian peers, re-

porting significantly lower levels of comfort than all other clusters (Choice/Sexual Abuse,  $M = 3.81, SE = .07, p < .05$ ; Choice,  $M = 3.83, SE = .07, p < .07$ ; Biological,  $M = 4.25, SE = .07, p < .05$ ). Biological cluster members were the most comfortable, significantly more so than Choice/Sexual Abuse and Choice cluster members ( $p < .05$ ). Choice/Sexual Abuse and Choice clusters did not differ significantly.

Regarding grade, interestingly, seniors reported the lowest levels of comfort ( $M = 3.68, SE = .11$ ) compared to other grades (freshmen,  $M = 3.72, SE = .05$ ; sophomores,  $M = 3.94, SE = .07$ ; juniors,  $M = 3.93, SE = .08$ ). These differences did not reach significance, however, likely due to small number of seniors in our sample. Freshmen reported significantly lower comfort scores than sophomores and juniors ( $p < .05$ ).

**Table 6:** Cluster differences in adolescents' reasons for why excluding a lesbian or gay peer was wrong or not wrong.

Origin	Justification			
	Moral	Conventional	Personal	Info Assumptions
Choice/Sexual Abuse	.51 (.02) <sup>a23</sup>	.09 (.01) <sup>bc2</sup>	.27 (.02) <sup>bdc</sup>	.08 (.01) <sup>bf2</sup>
Choice	.53 (.02) <sup>a2</sup>	.11 (.01) <sup>bc2</sup>	.24 (.02) <sup>bde</sup>	.07 (.01) <sup>bf2</sup>
Biological	.58 (.02) <sup>a24</sup>	.07 (.01) <sup>bc2</sup>	.25 (.02) <sup>bde</sup>	.06 (.01) <sup>bf2</sup>
Socialized	.46 (.03) <sup>a1</sup>	.12 (.01) <sup>bc1</sup>	.22 (.03) <sup>bd</sup>	.13 (.01) <sup>bd1</sup>

Note.

Justifications scores represent the mean proportion of use of that reason. Standard error in parentheses.

<sup>12</sup>Values within column with different numbers different at  $p < .05$  level.

<sup>ab</sup>Values within row with different letters different at  $p < .05$  level.

### Origin- and Grade-related Differences in Judgments Regarding the Treatment of Others

We expected to find age-related differences in judgments regarding excluding or teasing a lesbian or gay peer. First, we expected that older students would be less likely to judge teasing or excluding a lesbian or gay peer as acceptable. Second, regardless of age, we predicted that those respondents supporting biological origins would report that it would be less acceptable to tease or exclude a lesbian or gay peer than participants from the socialization cluster. We investigated these relationships by conducting a 4 (origins: Choice/Sexual Abuse, Choice, Biological, Socialized) x 4 (grade: freshman, sophomore, junior, senior) univariate ANCOVA on each treatment context (exclusion, teasing). For each analysis, we controlled for gender and school by including them as covariates.

**Exclusion.** The analysis of exclusion judgments revealed main effects for cluster  $F(3, 1142) = 4.33, p < .01, \eta^2 = .011$  but not for grade, as well as no interaction between grade and cluster. As expected, participants from the biological cluster were least likely to say it would be OK to exclude a LG peer ( $M = 2.21, SE = .06$ ) compared to those from the Choice ( $M = 2.36, SE = .07, ns$ ), Choice/Sexual Abuse ( $M = 2.43, SE = .07, p < .05$ ) and Socialization ( $M = 2.58, SE = .09, p < .05$ ) clusters. While Choice/Sexual Abuse and Choice clusters did not differ significantly, both were lower than the Socialized cluster ( $p < .05$ ), indicating that Socialized

cluster respondents were the most likely to say excluding a peer because they are gay or lesbian would be OK.

**Teasing.** For teasing judgments, the analysis revealed a significant main effect for origins cluster  $F(3, 1039) = 5.40, p < .001, \eta^2 = .014$  but no significant effects for grade and no interaction between cluster and grade. Once again, Socialization cluster respondents reported the least tolerant attitudes ( $M = 2.04, SE = .08$ ) compared to other clusters (Choice,  $M = 1.77, SE = .06, p < .05$ ; Choice/Sexual Abuse,  $M = 1.69, SE = .06, p < .05$ ; Biological,  $M = 1.64, SE = .06, p < .05$ ). As with exclusion judgments, Biological respondents reported the lowest means, however, they were not significantly different from the Choice or Choice/Sexual Abuse clusters. It is important to note that, even though we found differences between the Socialization and other three clusters, the Socialization mean (2.04) was still well below the mid-point of the scale (3), indicating that the mean response from all clusters was that it was not OK to tease a peer because of their sexuality.

### Origin- and grade-related differences in participants' reasons for why exclusion and teasing were all right or wrong

Consistent with previous studies, we expected younger adolescents to appeal more to social norms and stereotypes when asked to justify why excluding or teasing an LG individual would be wrong or all right. Conversely, we predicted older students would be more likely to endorse fairness or

human equality. We also expected that origin belief would impact respondents' justifications and expected that those with biological-based beliefs would be more likely to use fairness or equality justifications, rather than norms or stereotypes. To investigate these relationships, we conducted a 4 (origins: Choice/Sexual Abuse, Choice, Biological, Social-

ized) x 4 (grade: freshman, sophomore, junior, senior) x 4 (justification: Moral, Conventional, Personal, Informational assumptions) repeated measures ANCOVA with type of justification as a repeated measure for each treatment context separately (exclusion, teasing). We controlled for gender and school by including them as covariates.

**Table 7:** Cluster differences in adolescents' reasons for why teasing a lesbian or gay peer was wrong or not wrong.

Origin	Justification			
	Moral	Conventional	Personal	Info Assumptions
Choice/Sexual Abuse	.74 (.02) <sup>a2</sup>	.06 (.01) <sup>bc2</sup>	.09 (.13) <sup>bde</sup>	.05 (.01) <sup>bf2</sup>
Choice	.73 (.02) <sup>a2</sup>	.08 (.01) <sup>bc2</sup>	.08 (.01) <sup>bde</sup>	.06 (.01) <sup>bf2</sup>
Biological	.77 (.02) <sup>a2</sup>	.06 (.01) <sup>bc2</sup>	.09 (.01) <sup>bde</sup>	.04 (.01) <sup>bdf2</sup>
Socialized	.61 (.03) <sup>a1</sup>	.10 (.01) <sup>b1</sup>	.11 (.02) <sup>b</sup>	.11 (.01) <sup>b1</sup>

Note.

Justifications scores represent the mean proportion of use of that reason. Standard error in parentheses.

<sup>12</sup>Values within column with different numbers different at  $p < .05$  level.

<sup>ab</sup>Values within row with different letters different at  $p < .05$  level.

*Exclusion.* The exclusion justification analysis showed a non-significant justification main effect  $F(3, 1143) = 2.12, p < .10, \eta^2 = .002$  and a significant two-way interaction for origins cluster and justification  $F(9, 1143) = 3.21, p < .001, \eta^2 = .008$ . No other interaction effects were significant. Follow-up tests of the origins cluster by exclusion justification interaction showed that participants in all four clusters used moral justifications more than conventional, personal or informational assumptions (see table 6). Within moral justifications, however, Biological cluster respondents used moral justifications most often while Socialization cluster respondents used them the least frequently. Additionally, Socialization cluster respondents used conventional and informational assumption justifications significantly more than any other cluster. Even though personal justifications were the second most commonly used, use of this type of justification did not differ significantly between clusters.

*Teasing.* For the teasing justifications, the analysis revealed a justification main effect  $F(3, 1141) = 26.08, p < .001, \eta^2 = .022$  and a significant two-way interaction between cluster membership and teasing justification  $F(9, 1141) = 5.36, p < .001, \eta^2 = .014$ . No other interaction effects were significant. In general, adolescents used predominantly moral ( $M = .71$ ) and personal ( $M = .09$ ) justifications for their teasing judgments. Within this general pattern of findings, however, follow-up tests of the origins cluster by teasing justification interaction revealed a similar pattern to exclusion justifications (see table 7). Again, moral justifications were used most across clusters. Personal justifications were used significantly more often than conventional and informational assumptions for Biological, Choice and Choice/Sexual Abuse cluster respondents, but not for Socialization cluster respondents. As with exclusion judgments, Socialized cluster respondents used moral justifications least frequently compared to other clusters and used conventional and informational assumptions more often.

## Discussion

While grade was related to cluster profile regarding the origins of homosexuality, when cluster was included in analyses regarding sexual prejudice, grade virtually dropped out as related to sexual prejudice. This suggests that contrary to previous work, age-related differences in sexual prejudice may actually be differences in adolescents' beliefs about the origins of homosexuality. What we don't know from the current study is why older students are more likely to hold biological beliefs about the origins of homosexuality. One reason could be intergroup contact. Heinze & Horn (2009) found that older adolescents are more likely to report having a friend who is gay or lesbian than younger adolescents. This type of high quality contact could cause individuals to have to think about their beliefs about the origins of homosexuality at a different level than those with no contact with lesbian or gay people. An alternative reason, however, could be related to the type of education students receive in health classes related to homosexuality. While we don't know the content of the health curriculum at these particular schools, this seems like an important avenue for future research. Horn & Szalacha (2009) found that safe schools practices (e.g. GSA's, staff development) were related to levels of sexual prejudice among adolescents suggesting that school level variables are important factors in understanding individual level differences in sexual prejudice. It could be the case that safe schools practices are related to levels of sexual prejudice through the effect they may have on individuals' beliefs about the origins of homosexuality.

When we allowed adolescents to choose from a number of reasons for why individuals are gay or lesbian, we found that adolescents endorsed a variety of beliefs about the origins of homosexuality. These beliefs seemed to structure around 4 different types of profiles: choice/sexual abuse, choice only, biological only, and socialization. Interestingly, the choice response seemed to load on every profile except biological, suggesting that these two sets of beliefs may be



perceived as exclusive categories of beliefs. In our sample, about equal numbers of students endorsed each type of origins belief profile suggesting that a variety of beliefs structures exist among high school aged adolescents.

In regard to how these belief structures are related to levels of sexual prejudice, the results of our study provide support for previous research, but also contradict and extend this research in important ways. Similar to research with adults, the results of this study provide compelling evidence that beliefs that homosexuality is biological or genetic are related to lower levels of sexual prejudice. Adolescents within this belief profile reported increased acceptance of homosexuality and increased comfort interacting with gay and lesbian peers compared to adolescents in other belief profiles. Additionally, these adolescents were also more likely to judge exclusion and teasing based on sexual orientation as wrong and to utilize moral reasons in justifying these judgments.

Similar to previous research, we did find that individuals endorsing choice beliefs about the etiology of homosexuality were less tolerant and accepting of gay and lesbian people, but beliefs about choice seem to function in more complicated ways than previous research would suggest. Not only did we find that beliefs about choice coexist with other types of etiology beliefs, but also that the relationship between these beliefs and sexual prejudice depends more on these other beliefs than on choice, *per se*. In particular, beliefs that various types of socialization experiences (e.g. parents, hanging out with gay people) are the cause of homosexuality tended to be related to the highest levels of sexual prejudice across all measures. Adolescents endorsing this origins belief profile evaluated homosexuality as less acceptable, used more stereotypes and informational assumptions to support these evaluations and expressed less comfort interacting with lesbian and gay peers than all of the other origins beliefs profile groups. Additionally, they were the least likely to judge that exclusion and teasing a lesbian or gay peer was wrong and utilized less moral reasoning and more conventional reasoning and informational assumptions to support these judgments.

These results are interesting and extend previous research on the origins of homosexuality and sexual prejudice by suggesting that an individual's beliefs may be related to the type of reasoning they apply to decisions related to homosexuality and the treatment of lesbian and gay peers, and thus reduce the levels of sexual prejudice that they exhibit. The fact that individuals within the biological origins belief profile utilized more moral reasoning regarding both their judgments about the acceptability of homosexuality, as well as their judgments about excluding or teasing a lesbian and gay peer, provides support for and extends previous research that suggests that when a "type of stigma" is believed to be uncontrollable and immutable, individuals will exhibit less prejudice toward those individuals because they do not have control over that aspect of their person and therefore, to treat them unfairly because of it would be unfair or hurtful (morally wrong). We must use caution, however, in assuming

that changing individuals' beliefs about the etiology of homosexuality to biological is the panacea for reducing sexual prejudice. As Hegarty (2002) points out, contemporary arguments regarding the genetic or biological basis of homosexuality are being utilized by both individuals endorsing rights for LGB individuals, as well as those who would argue that homosexuality should be eradicated because it is a genetic anomaly.

Additionally, future research needs to investigate the directional relationship between beliefs about the origins of homosexuality and sexual prejudice. As Hegarty (2002) suggests, individuals who hold prejudicial beliefs about homosexuality often support those beliefs by making appeals to arguments about controllability, suggesting that the beliefs about the origins of homosexuality are used to justify preexisting prejudicial beliefs or behaviors. It could also be the case that individuals' beliefs about tolerance and the rights of LGB people develop first and that their beliefs about the origins of homosexuality develop later in an effort to support their more tolerant attitudes. Developmental studies regarding sexual prejudice could be incredibly useful in investigating these directional relationships as they could examine changes in these relationships over time during a period of the lifespan when these beliefs are just beginning to be developed and formed.

Given the complicated and conflicting information regarding the origins of homosexuality that exists, another useful avenue for future research would be to investigate the sources of individuals' beliefs about the origins of homosexuality. How does someone come to believe that homosexuality is biological/genetic versus the result of parenting? Further, does the source of information regarding beliefs impact not only how individuals make sense of those beliefs, but also the relationship between those beliefs and prejudice.

### Limitations

One limitation of the current study is that adolescents were not allowed to spontaneously generate their beliefs as they were given a preset list of options. This may have influenced them to endorse more or different types of beliefs than if they were asked to simply describe how they think a person is or becomes lesbian or gay contributing to belief complexity that might not actually exist.

While we had a diverse sample of students from two different schools, the participants in this study all lived in the same general demographic area within the United States. We know very little, in fact, about adolescents' beliefs and attitudes about homosexuality outside of the U.S. and Canada. Future research should try to investigate these issues in other countries/cultures.

Because we were interested in isolating the effects of age and origins beliefs in this study we did not explore other factors that may be related to individuals' origins beliefs like religious denomination, ethnicity, or contact with LGBT others—all factors that may be related to how adolescents con-

struct an understanding of these issues. Further, in order to determine the ways in which these beliefs form, develop-

mental studies that investigate all of these factors and how they related to one another need to be conducted.

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