

University at Albany, State University of New York

Scholars Archive

Psychology

Honors College

5-2016

Homophobia in Non-Heterosexuals and Their Families

Merel Hermans

University at Albany, State University of New York

Follow this and additional works at: https://scholarsarchive.library.albany.edu/honorscollege_psych



Part of the [Psychology Commons](#)

Recommended Citation

Hermans, Merel, "Homophobia in Non-Heterosexuals and Their Families" (2016). *Psychology*. 9.
https://scholarsarchive.library.albany.edu/honorscollege_psych/9

This Honors Thesis is brought to you for free and open access by the Honors College at Scholars Archive. It has been accepted for inclusion in Psychology by an authorized administrator of Scholars Archive. For more information, please contact scholarsarchive@albany.edu.

Homophobia in non-heterosexuals and their families

An Honors Thesis presented to the Department of Psychology

at the State University of New York at Albany,

in partial fulfillment of the requirements for graduation with Honors in Psychology

and graduation from the Honors College

Merel Mireille Hermans

Honors Thesis Supervisor: Gordon G. Gallup Jr. Ph.D.

Abstract

Homophobia is described as the negative attitudes towards non-heterosexual individuals. The evolutionary advantage of homophobia and of sexualities other than heterosexuality remain poorly understood within evolutionary psychology. This research extends Gallup's 1995 research, in which people were found to respond more negatively towards same-sex pairs (i.e. imagining their daughter spending time with a lesbian mother, and a son spending time with a gay father), than opposite-sex pairs. Gallup's original study did not include lesbian, gay, bisexual and queer (LGBTQ) individuals, however given the increasing acceptance of these groups it is now appropriate to expand this research to include these groups. One hundred and thirty-eight participants were recruited through an email list of two organizations within the University at Albany; the Capital Pride Center in Albany; and several online LGBTQ forums. Participants completed an online survey containing qualitative and quantitative questions regarding how they perceived their family's response when they spend time with their niece(s) and/or nephew(s). Additionally, participants were asked to rate their feelings on a 5 point Likert scale from very negative to very positive when imagining having a(n) 8 year old or 21 year old niece or nephew who spent time with a lesbian or gay parent. Participants rated their feelings towards same-sex pairs more negatively than opposite-sex pairs. Due to limited sample size, a comparison between perceptiveness of the family toward heterosexual participants and non-heterosexual participants spending with their nieces and nephews was impossible. In conclusion, several central predictions from Gallup's 1995 research were replicated, but studies that focus on the family members of non-heterosexual individuals seem most promising.

Homophobia in non-heterosexuals and their families

The term ‘non-heterosexual’ is used to describe all individuals who identify having another sexual orientation than heterosexual, which includes but does not limit to individuals who identify as gay, lesbian, or bisexual. Negative attitudes towards individuals with a sexual orientation other than heterosexual (henceforth called non-heterosexual) are still widely spread (Denison & Kitchen, 2015). This so-called homophobia is noticeable in political decisions and social situations, and remains poorly understood. Homophobia and the chronic stress associated negatively affects the lives of people with orientations other than heterosexuality (Lea, de Wit, & Reynolds, 2013) including increases in risks for depression (Lewis, Derlega, Griffin, & Krowinski, 2003), anxiety and panic disorder (Mays & Cochran, 2001), and suicide (Lea, de Wit, & Reynolds, 2013). Furthermore, the quality of life in non-heterosexual individuals is lower than in heterosexuals (Træen, Martinussen, Vittersø, & Saini, 2009)

Although improvements in the lives of people with these other sexual orientations have been noticeable, such as in a decline in homophobia in schools and in sports, negative views are still common (Bush, Anderson, & Carr, 2012),. This research aims to explore the phenomenon of homophobia from an evolutionary point of view. This study does not make any judgments about different sexual orientations and is purely trying to understand why some people display fear of and apprehension towards non-heterosexual behavior. It is designed to shed a different scientific light on a phenomenon that is not yet understood, and all terms are used for a purely descriptive purpose.

Heterosexism versus homophobia

The term ‘homophobia’ is used to describe the discomfort and/or hostility heterosexual individuals experience when being in a social situation with a homosexual individual, as well as the self-hatred reported by some homosexual individuals (Weinberg,

1972; Herek, 1996). This term is often rejected in scientific research, as the term ‘phobia’ is a clinical concept, and there is no evidence that homophobia has a clinical background (Herek, 1996). Often, the term heterosexism is used to replace homophobia. Heterosexism is defined as “the ideological system that denies, denigrates, and stigmatizes any non-heterosexual form of behavior, identity, relationship, or community.” (Herek 1990, Herek 1996)

This paper discusses individual and internal negative attitudes towards non-heterosexual individuals, as well as the self-loathing experienced by some individuals with another orientation than heterosexuality (McDermott, Roen, & Scourfield, 2008). The term ‘homophobia’ is used in the precursor of this research (Gallup, 1995). The negative attitudes described in this paper are more closely related to the concept of ‘homophobia’ than the concept of ‘heterosexism’. For these reasons, the term ‘homophobia’ is used throughout this paper to describe the negative attitudes towards non-heterosexual individuals.

Empirical evidence supporting evolutionary theory of homophobic behavior

A literature was conducted to explore the evolutionary explanation of homophobic behavior. Evolutionary theory has not yet been able to explain how orientations other than heterosexuality have evolved over time (Kremer, 2014). Studies have reported that 1.2% - 5.6% of adults identify as lesbian, gay or bisexual (Gates, 2011). Evidence supports the idea that sexual orientation is at least in part influenced by genetics (Burry, Spector, & Rahman, 2015; Bailey, 2006; Bailey, Dunne, & Martin, 2000; Sanders et al., 2015). From an evolutionary point of view, same-sex behavior has been considered non-reproductive (Kirkpatrick, 2000). Throughout evolutionary history and until the advent of in vitro fertilization in 1975 (Wang & Sauer, 2006), people with a non-heterosexual orientation were less likely to engage in heterosexual intercourse that would in turn result in offspring (Bell & Weinberg, 1978; Saghir & Robins, 1973). One would expect therefore that over time any so-called ‘heterosexual gene’ would be the only sexual orientation to persist and as such genes

related to non-heterosexual behavior would not persist. After all, if a 'homosexual gene' had existed, this would have been selected against during evolutionary history.

Kin Selection Theory

Sexual orientation remains a controversial topic, and few evolutionary psychologists have been able to explain the occurrence of sexual orientations besides heterosexuality. Wilson (1975) proposed the idea that lesbian and gay people may have been advantaged in evolutionary history by kin selection theory. Kin selection theory proposes genes related to non-heterosexuality survived throughout evolutionary history because individuals with a sexual orientation other than heterosexual would spend more time and resources in their nieces and nephews (Wilson, 1975). Any individual shares about 25 percent of their genes with their nieces or nephews. Assuming that non-heterosexual individuals are less likely to have children, nieces and nephews would be the one way to foster the survival of the family gene pool. Most of the research to the kin selection hypothesis, completed in the Western World, does not support this hypothesis (Bobrow & Bailey, 2001; Rahman & Hull, 2004; Vasey & VanderLaan 2011). Bobrow and Bailey postulate one potential reason why non-heterosexual individuals do not spend more time and resources into their nieces and nephews may be that homophobic responses in other members of the family prevent them to (2001). In non-western societies such as the island of Independent Samoa more research is needed to draw conclusions about the kin selection theory (VanderLaan, Petterson, Mallard, & Vasey, 2015; Vasey, Pocock, & VanderLaan, 2007).

“The imprinting theory of homosexuality” (Gallup, 1995)

In 1995 Gallup proposed the imprinting theory to explain sexual orientation (1995). This theory suggests that in particular, males are more likely to be gay if they have a sexual experience with another male during early puberty. Gay males are likely to have their first experience of masturbation in the presence of another male (van Wyk & Geist, 1984), and

uses data from his own unpublished study, in which most gay males reported becoming aware of their orientation during puberty (Gallup, 1995). Gallup proposes that ratio between the number of homosexual pedophiles and the number of homosexual individuals is greater than the ratio between the number of heterosexual pedophiles and the number of heterosexual individuals and uses this argument to suggest that a significant proportion of homosexual males is seduced by other males in adolescence (Gallup, 1996).

Gallup developed a theory on homophobia based on this proposition. If the environment, to a certain degree, influences children in developing a sexual orientation other than heterosexuality, then it would follow that from evolutionary perspective, parents will take steps to minimize contact between children and non-heterosexual individuals. In turn, this would ensure children to produce offspring and pass on the parents' genes (Gallup, 1995).

To support this notion Gallup conducted a series of survey research, Gallup (1995) and found that people are more likely to respond with more homophobia to people in professions that are likely to include close contact with children (such as a pediatrician) than to professions that are less likely to include this contact (such as a construction worker). Gallup also asked participants a series of 8 different questions, imagining themselves as the parent of either the son or a daughter who was either 8 or 21 years of age and who had spent the night at a friend's house. Participants rated how upset they would be to learn that either the friend's father or the friend's mother was gay or lesbian. People were more upset when the sex of the child matched the sex of the parent. Furthermore, imagining being the parent of a younger child who stayed at a friend's house with a gay or lesbian parent made people more upset than imagining being the parent of an adult child who stayed at a friend's house with a gay or lesbian parent.

If indeed there is an evolutionary background of homophobia, then this phenomenon should also occur in non-heterosexuals. Internalized homophobia was described by Meyer and Dean in 1998 as “the gay person’s direction of negative social attitudes toward the self, leading to a devaluation of the self and resultant internal conflicts and poor self-regard”. Little is known about what predicts internalized homophobia (Williamson, 2000), but the influences on the mental and physical health of non-heterosexual individuals are evident. Among other risk factors, non-heterosexuals are at higher risk for suicide, self-harm, anxiety, depression (Igartua, K., Gill, K., & Montoro, R., 2009), substance use, and are more likely to take sexual risks (Thomas, Mience, Masson, & Bernoussi, 2014).

Homophobia in ancient history

Due to the low pace of evolution, an evolutionary background of homophobia means that this phenomenon should have been present throughout recent history. In ancient Greek societies, the sexual relationship between an older and a younger male was seen as “the highest form of love” (Fone, 2000), as derived from Plato’s ‘Symposium’ (Naugle, 2009). The Romans had a similar view of same-sex love, and only punished sexual violation of status (e.g. a citizen performing passive behavior in a sexual act), which included heterosexual relationships as well (Fone, 2000; Horner, 1978).

Instead, homophobia seems to have a religious underpinning. Homophobia was apparent in ancient Hebrew society (Horner, 1978; Norton, 2002). Hebrews did not view homosexual acts to be ‘immoral’ or ‘insanitary’, but as part of major rituals in other cultures for example, the Assyrians, Phoenicians, Greeks and Latins (Norton, 2002). In order to distinguish themselves from these cultures, the Hebrews condemned the same-sexual acts (Norton, 2002). Christianity took over these views and documented a disapproval of the homosexual act in the bible (Norton, 2002).

Indeed, there is a correlation between religiosity and “homonegativity” (Jäckle & Wenzelburger, 2014; Warriner, Nagoshi, & Nagoshi, 2013), which is contradictory to the hypotheses derived from an evolutionary background of homophobia. Nonetheless, atheists exhibit homophobic responses as well, but further research is necessary to draw conclusions about the causes.

The current research

This honors thesis aims to extend Gallup’s theory of homophobia to individuals with another sexual orientation than heterosexuality. In the original study Gallup only canvassed the view of heterosexual individuals thus limiting the results to the views of heterosexual individuals. This study has included non-heterosexual individuals. Their views are crucial for an evolutionary analysis of homophobia, particularly as an evolutionary background would suggest that all individuals should show the trait. The aim of this research is to understand homophobia from an evolutionary perspective. The following objectives and hypotheses are proposed:

Objective 1: To determine whether homophobic ratings are related to age of the child that is spending time with a lesbian or gay parent.

Hypothesis: That participants will respond more negatively when imagining a younger (8 year old) niece or nephew compared to when imagining an older (21 year old) niece or nephew spending time at a friend’s house with a gay father or lesbian mother.

Objective 2: To investigate whether homophobic responses change with the match or mismatch between the sex of the child and the sex of the lesbian or gay parent.

Hypothesis: That participants will respond more negatively to imagining same-sex pairs (i.e. a nephew staying with a gay father, and a niece staying with a lesbian mother) than to opposite-sex pairs.

Objective 3: To compare the views of heterosexual individuals and non-heterosexual individuals regarding different sexual orientations.

Hypothesis: There will be no difference in ratings of feelings toward an imaginary niece or nephew spending time at a friend's house with a lesbian or gay mother or father between heterosexual individuals and non-heterosexual individuals.

Objective 4: To examine the resistance from the family of the participating individual when they spend time with their niece(s) and/or nephews.

Hypothesis: That non-heterosexual participants will experience more resistance from their siblings with regards to spending time with their real niece(s) and/or nephew(s), than heterosexual participants. Thus:

- a. It is predicted that non-heterosexual participants spend less time with their niece(s) and/or nephew(s) than heterosexual participants
- b. The family of non-heterosexual participants are expected to be less receptive than families of heterosexual participants in letting the participants spending time with their niece(s) and/or nephew(s), measured through ratings of perceived receptiveness by the participant.

Methods

Participants

The institutional review board (IRB) of the State University of New York at Albany approved the study (IRB protocol number: 15-E-112-01). Informed consent was obtained from the hundred thirty-eight participants who responded to an online survey. The participants were recruited from various sources. The experimenter visited several classes (two intermediate classes in psychology, two advanced classes in statistics, and two introductory classes in political science at the State University of New York at Albany),

encouraged students to participate in the study and distributed a note with the survey link. Similarly, participants were recruited through visits at the men's and the women's groups of the Pride Center of the Capital Region in Albany. Furthermore, participants were recruited by email via the Gender and Sexuality Resource Center (GSRC) and the Middle Earth Peer Assistance Program at the State University of New York at Albany, and through online distribution of the survey link in several LGBTQ forums. To guarantee privacy, participants were provided a link to the SurveyMonkey® (Palo Alto, CA, USA) survey. Participation in this research was strictly voluntarily. The online survey ensured anonymity, and IP tracking was prevented. Return rates of each of the recruitment sources is therefore impossible to estimate, as it is unknown how many people declined to participate. Incomplete datasets were removed from the data analysis.

Materials

Participants responded to questions from an online survey that was created for the purpose of this study. The survey contained a maximum of 43 questions, depending on the participant's responses. The questionnaire addressed the following topics (Appendix A):

Closeness to family. Closeness to family was measured using questions similar to that used in the study by Bobrow and Bailey (2001) however in the current study, the measurement of closeness to family was divided in two parts: general closeness to the family, and closeness to any potential nieces and/or nephews. Questions asking about the general closeness to family included the questions used by the study described by Bobrow and Bailey (2001), Participants answered questions such as: "My biological family is important to me," "I feel close to my biological family, and "I feel estranged from my biological family", using a 5 point Likert Scale. Furthermore, participants were asked about whether they were in close contact with their biological siblings. These questions were included to introduce the next

questions about nieces and nephews, and to introduce the potentially sensitive questions regarding family views toward sexual orientation.

Closeness to nieces and nephews. Participants were then asked if they had any niece(s) and/or nephew(s). Only a small proportion (7.4%) reported having one or more nieces or nephews (5.2%). Participants who indicated having niece(s) and/or nephew(s) (Appendices 1a and 1b) were asked to estimate how many hours per week, per month and per year they usually spend with their niece(s) and/or nephews in general, alone, and without other members of their family. The extent to which they perceived their siblings as being receptive toward them spending time with their niece(s) and/or nephew(s) was assessed by asking them how much alone time they have with their niece(s) and/or nephew(s) compared to their parents, and how often their siblings let them babysit their niece(s) and/or nephew(s). Participants who indicated not having any nieces or nephews skipped these questions and were automatically guided to the last questions of the survey.

Imaginary nieces and nephews. In the last part of the survey, participants responded to a cluster of eight items. The participants were asked to imagine having either a niece or a nephew of either 8 or 21 years of age, who was going to spend the night at a friend's house. They were asked to indicate how they would feel if they would find out that either the friend's mother were lesbian, or the friend's father were gay. These questions were derived from Gallup's (1995) research, but were slightly modified for the purpose of this study. Instead of asking to imagine having a son or a daughter, this study asked the participants to imagine having a niece or a nephew. Furthermore, instead of being asked to rate how upset they would be like in Gallup's research, the participants were asked to rate their feelings on a 5 point Likert Scale (1 being very negative, 2 being negative, 3 being neutral, 4 being positive, and 5 being very positive) in order to minimize suggestibility. The forced choice was eliminated and a 'Neutral' response option was added to increase the response range and

to reduce any biases that could occur with participants who have no opinion and would be forced to select an answer that may or may not reflect their true feelings (Choi & Pak, 2005).

Three different analyses were performed on the data: analysis 1 combined both heterosexuals and non-heterosexuals and looked at interactions; analysis 2 only included heterosexual participants; and analysis 3 compared heterosexual participants to non-heterosexual individuals

Results

The final sample consisted of 89 females (64.5%), 43 males (31.2%), and 6 participants who refused to reveal their sex at birth (4.3%). Most participants indicated to be within the age group of 21-25 years old (39.9%), and most were classified as senior in college (31.9%). The racial decomposition of the sample was 65.9% white, 10.9% Hispanic or Latino, 7.2% Asian or Pacific Islander, 6.5% multiracial, 4.3% black or African American, and 5.1% of unknown race. 50% of the participants identified as heterosexual, 8% as gay, 6.5% as lesbian, and 35.5% indicated another sexual orientation than heterosexual, gay, or lesbian. Appendix C1 provides the mean score of females and males respectively, in response to each of the eight items. The ratings were given on a five-point scale with 1 being very negative, and 5 being very positive. There were no particular gender differences, although female participants with a sexual orientation other than heterosexual seemed to overall be more positive than the other participants.

In order to explore the main effects and interactions between the sex of the participant, the sex of the offspring, the age of the offspring, and the sex of the gay father or lesbian mother, a 2x2x2x2 repeated measures Analysis of Variance (ANOVA) was performed like in Gallup's (1995) research. Mauchly's test did not indicate violation of sphericity, outliers were dropped and the other assumptions for the repeated measures

ANOVA were satisfied as well.

No significant main effect of the age of the offspring was found. Neither was a main effect of either the sex of the niece or nephew or the sex of the gay or lesbian parent. However, similar to Gallup's 1995 research, there was a crossover interaction between the sex of the niece or nephew and the sex of the gay or lesbian parent ($F=5.771$, $p=0.018$, $\eta^2=0.043$) (Appendix C2). People were more negative toward imagining a nephew staying with a gay father and a niece staying with a lesbian mother than a nephew staying with a lesbian mother and a niece staying with a gay father. A paired t-test of the data found that participants responded specifically more negatively to their imaginary 8-year-old nephew staying with a gay father, than an eight-year-old nephew staying with a lesbian mother ($t(131)=2.139$, $p=0.034$).

Gallup's research was performed only with heterosexual individuals. To test whether 21 years after Gallup's research the results would still be the same, a $2 \times 2 \times 2 \times 2$ repeated measures ANOVA was performed in analysis 2 to explore the main effects and interactions between the sex of the participant, the sex of the offspring, the age of the offspring, and the sex of the gay father or lesbian mother of only the heterosexual participants. Even though there were no main effects of the variables independently, this analysis resulted in an interaction between child's age and participant's sex ($F(1)=4.398$, $p=0.040$, $\eta^2=0.063$) (Appendix C3). Males seemed to be more positively toward their imaginary 21 year old than their 8 year old niece or nephew spending time with a lesbian or gay parent, and females responded more positively towards their imaginary 8 year old than their 21 year old niece or nephew spending time with a gay or lesbian parent. Analyses of the simple effects did not provide a statistically significant clarification of this interaction.

Another $2 \times 2 \times 2 \times 2$ repeated measures ANOVA explored main effects and interactions between the participant's sexual orientation, the sex of the offspring, the age of the offspring,

and the sex of the lesbian or gay parent in analysis 3. Non-heterosexual participants were compared to heterosexual participants (Appendix C4). No differences between heterosexual and non-heterosexual ratings were expected. However, there was a main effect of sexual orientation, with non-heterosexual participants generally responding more positively to the imaginary questions than heterosexual respondents ($F(1)=5.457$, $p=0.021$, $\eta^2=0.042$). Especially individuals with another sexual orientation than heterosexual, gay, or lesbian, had higher ratings than heterosexual participants ($t(103)=5.060$, $p=0.001$).

The third hypothesis in this study predicted that non-heterosexual participants would perceive receiving more resistance from their family members in spending time with their niece(s) and/or nephew(s). The number of participants reporting having a niece or nephew ($N=23$, Appendix B1 and B2) was too small and the statistical power too low to perform such an analysis.

Discussion

The expected replication of Gallup's (1995) results predicted two statements. First of all, participants were expected to respond more negatively to same-sex pairs (i.e. a nephew staying at a friend's house with a gay father, or a niece staying at a friend's house with a lesbian mother), than opposite-sex pairs (i.e. a nephew staying at a friend's house with a lesbian mother, or a niece staying at a friend's house with a gay father). Indeed, consistent with Gallup's research, an interaction was found between the sex of the niece or nephew and the sex of the lesbian or gay parent, and participants responded more negatively to imagining an 8 year old nephew staying at a friend's house with a gay father than an 8 year old nephew staying at a friend's house with a lesbian mother. It must be noted that in the current research, a 'neutral' option was added, thus eliminating forced-choice questions like those used in

Gallup's research (1995). It is remarkable that this result occurred even without forcing the participant to decide.

Secondly, a general age interaction was expected like what was found in Gallup's 1995 research. Participants were expected to respond more negatively to imagining an 8 year old spending time with a gay or lesbian parent than a 21 year old spending time with a gay or lesbian parent. This hypothesis was not supported. Nonetheless, a three-way interaction between the child's age, the child's sex, and the participant's sex was found. Males especially responded more negatively to an 8 year old spending time with a gay or lesbian parent, than a 21 year old spending time with a gay or lesbian parent.

It must be noted that in order to test Gallup's theory of homophobia more accurately, future research should ask participants to additionally rate an imaginary 15 year old family member spending time with a gay or lesbian adult. Gallup's theory assumes that people should respond more negatively when children are in puberty rather than before or after puberty, and both 8 year olds and 21 year olds are expected not to be in puberty. An age interaction may be more apparent in future research involving imaginary 15 year olds as well.

The third hypothesis expected no differences between the ratings of non-heterosexual participants and heterosexual participants in their feelings toward a niece or nephew spending time at a house with a gay or lesbian parent. Nonetheless, non-heterosexual participants clearly responded more positively when imagining their niece or nephew spending time at a friend's house with a gay or lesbian parent, than heterosexual participants. This difference was especially noticeable when comparing heterosexuals with participants who reported having another sexual orientation than heterosexual, gay, or lesbian. These results are inconsistent with the reports of internalized homophobia (Meyer & Dean, 1998; Warriner, Nagoshi, & Nagoshi, 2013).

The current study relied on self-report, which may be the reason why internalized homophobia was not measured. Participants with a sexual orientation other than heterosexual may be more consciously involved in the development of their sexual orientation, may be stronger opinionated and/or more defensive about their sexual orientation and LGBTQ rights than heterosexual individuals. Therefore, these participants could have been biased toward the purpose of this research and may have given higher ratings than heterosexual respondents. As an illustration of this presumed social desirability effect, non-heterosexual participants were found to respond more positively to the imaginary questions than heterosexual participants. Future research should reduce this social desirability bias by measuring implicit homophobic responses, instead of relying on self-report and explicit questions assessing homophobia.

The unpredicted difference between heterosexual and non-heterosexual participants could also come from the possibility that non-heterosexual participants may seek contact with other non-heterosexual individuals more often and therefore may have more (consciously chosen) experience with other non-heterosexual people, than heterosexuals may have. Studies confirm that stigma and prejudice reduces with increased contact with lesbian or gay individuals (Herek, 2011). Moreover, individuals who are conscious of their same-sex attraction and their non-heterosexual sexual orientation are reported to be more positive toward other lesbian and gay individuals due to the attitude-similarity effect: in-groups are preferred over out-groups (McInnis & Hodson, 2013).

Bobrow and Bailey (2001) found that homosexuals were not more likely than heterosexuals to spend resources to their nieces and nephews, as would be predicted from kin selection theory. As an extension to this finding, hypothesis 4 predicted that non-heterosexual participants would perceive more resistance from their family with regards to spending time with their real niece(s) and/or nephew(s) than heterosexuals. This hypothesis could not be

tested due to the limited amount of participants and could therefore not provide any support for or against the evolutionary theory of homophobia. This hypothesis needs to be further examined in future research, as it is interesting to find out the perspectives of family members towards a non-heterosexual individual spending time with their niece or nephew, instead of just focusing on the kin selection theory and the amount of resources that are spent towards the niece or nephew. Additionally, further research could use family members as participants and compare their responses toward a non-heterosexual versus heterosexual individual spending time with a niece or nephew.

Some people might argue that since the advent of techniques like In Vitro Fertilization (IVF) the theory of homophobia is no longer relevant to contemporary society and may be the reason why the results in the current study are different from Gallup's study (1995). In fact, since the birth of the first IVF baby in July 1978, more than 2 million babies have been born through this practice (Wang & Sauer, 2006). Gallup's theory of homophobia was tested 17 years after the birth of the first IVF baby. At this moment, more than a generation has passed since the advent of IVF. Non-heterosexual individuals are equally likely to pass on their genes – IVF therefore removed any evolutionary disadvantage.

However, if homophobia indeed has evolved throughout evolutionary history, it may be too soon to conclude that reproductive techniques like IVF have decreased the instance of homophobia. Evolutionary theory predicts that predispositions will remain until they are maladaptive and selected against, and do not disappear only because other options for reproduction are available. The evolved mechanism of overeating used to be adaptive when food was scarce, but even though food has been plenty in the Western world, the mechanism is still present (e.g. de Ridder & van den Bos, 2006; Polivy & Herman, 2006). If there actually is an evolutionary background of homophobia a decrease in homophobia should not

be expected because of the recent advent of techniques that make homophobia no longer relevant.

What do the findings of this study mean for Gallup's theory of homophobia? Several central predictions were replicated. However, the results of this research are insufficient to further draw conclusions about attitudes of individuals with another orientation than heterosexual. Studies that focus on the family members of non-heterosexual individuals seem most promising.

Acknowledgements

As a first-time researcher, this Honors Project has been my most challenging project thus far, yet it has taught me many lessons. Mostly, this project gave me great experience in conducting and reporting research, skills I am going to use extensively in my career path. First of all I would like to thank Dr. Gordon Gallup, for giving me this opportunity and his guidance, and for teaching me to think out of the box when finding solutions for complex research questions. Next, I would like to thank Dr. Louise Corben for teaching me the basics of research in Australia, for helping me with my thesis even during busy working days and for taking the time for being the second reader on such short notice. Of course many thanks to Benjamin Ampel, for the many hilarious hours of data analysis and for having the patience of teaching me to find a way out after getting lost in data. I would like to thank Courtney D'Aillard for his help in the development of the questionnaire, his patience and quick responses when I urgently needed information. Thank you to all course instructors and organizations for their help in distributing the survey and welcoming me to their classes or meetings: Dr. Hormes, Dr. Munch, Dr. Asal, Dr. Cimini, and the staff of the Pride Center of the Capital Region.

Lastly, I would like to thank my parents Peter and Petra Hermans, for teaching me that even through tough times quitting is never an option. I am very proud of the accomplishment of finishing this project, and it makes me believe that I am able to solve any problem I may have, no matter how much work it seems to be. I am very grateful for this realization, which is mainly attributable to your continuous encouragement and support, and your never ending desire for me to reach my full potential and to be happy.

Many thanks to everyone for their help and guidance. I am ready for a next project!

References

- Bailey, J. (2006). Sexual orientation: Genetics. *ELS*. doi:10.1038/npg.els.0005155
- Bailey, J.M., Dunne, M.P., & Martin, N.G. (2000). Genetic and environmental influences on sexual orientation and its correlates in an Australian twin sample. *Journal of Personality and Social Psychology*, 78, 524-536.
- Bobrow, D., & Bailey, J.M. (2001). Is male homosexuality maintained via kin selection? *Evolution and human behavior*, 22, 361-368. doi: [http://dx.doi.org/10.1016/S1090-5138\(01\)00074-5](http://dx.doi.org/10.1016/S1090-5138(01)00074-5)
- Bell, A.P., & Weinberg, M.S. (1978). *Homosexualities: a study of diversity among men and women*. New York: Simon and Shuster
- Burri, A., Spector, T., & Rahman, Q. (2015). Common Genetic Factors among Sexual Orientation, Gender Nonconformity, and Number of Sex Partners in Female Twins: Implications for the Evolution of Homosexuality. *The Journal of Sexual Medicine*, 12(4), 1004-1011. doi:10.1111/jsm.12847
- Bush, A., Anderson, E., & Carr, S. (2012). The declining existence of men's homophobia in British sport. *Journal of the Study of Sports and Athletes in Education*, 6(1), 107-120. doi: <http://dx.doi.org/10.1179/ssa.2012.6.1.107>
- Choi, B.C.K., & Pak, A.W.P. (2005). A catalog of biases in questionnaires. *Preventing Chronic Disease*, 2(1), A13
- Cameron, P. (1985). Homosexual molestation of children: sexual interaction of teacher and pupil. *Psychological reports*, 57, 1227-1236. doi: 10.2466/pr0.1985.57.3f.1227
- Denison, E., & Kitchen, A. (2015). Are LGB people accepted in sporting culture? In *Out on the fields: The first international study on homophobia in sport* (p. 39).
- Fone, B. (2001). Chapter one; Inventing Eros? In B. Fone (Eds.), *Homophobia: a history* (p. 22). New York, NY: Picador

Fone, B. (2001). Chapter three; Making monsters. Homosexual behavior in Roman society.

In B. Fone (Eds.), *Homophobia: a history* (p. 22). New York, NY: Picador

Gallup, G.G. (1995). Have attitudes toward homosexuals been shaped by natural selection?

Ethology and Sociobiology, 16, 53-70. doi: 10.1016/0162-3095(94)00028-6

Gallup, G.G. (1996). Attitudes toward homosexuals and evolutionary theory: the role of

evidence. *Ethology and Sociobiology*, 17, 281-284. doi: [http://dx.doi.org/10.1016/0162-3095\(96\)00042-8](http://dx.doi.org/10.1016/0162-3095(96)00042-8)

Gates, G.J. (2011). How many people are lesbian, gay, bisexual, and transgender?

<http://williamsinstitute.law.ucla.edu/wp-content/uploads/Gates-How-Many-People-LGBT-Apr-2011.pdf>

Herek, G. M (1996). Heterosexism and homophobia. In R. Cabaj & T. Stein (Eds.), *Textbook*

of homosexuality and mental health (p. 101). Washington, DC: American Psychiatric Press

Herek, G.M. (1990). The context of anti-gay violence: notes on cultural and psychological

heterosexism. *Journal of Interpersonal Violence*, 5, 316-333

Herek, G. M. (2011) "Anti-equality marriage amendments and sexual stigma" *Journal of*

Social Issues, Vol 67, No. 2 pp. 413-426

Horner, T.M. (1978). The Middle Eastern background. In T.M. Horner (Eds.), *Jonathan*

loved David, homosexuality in biblical terms (p. 21). Philadelphia, PA: The Westminster Press

Igartua, K., Gill K., & Montoro, R. (2009). Internalized homophobia: a factor in depression,

anxiety, and suicide in the gay and lesbian population. *Canadian Journal of Community Mental Health*, 22(2), 15-30. doi: 10.7870/cjcmh-2003-0011

- Jäckle, S. & Wenzelburger, G. (2014). Religion, religiosity, and the attitudes toward homosexuality – a multilevel analysis of 79 countries. *Journal of Homosexuality*, 62(2), 207-241. doi: 10.1080/00918369.2014.969071
- Kirkpatrick, R. (2000). The Evolution of Human Homosexual Behavior. *Current Anthropology*, 41(3), 385-413. doi:10.1086/300145
- Kremer, W. (2014, February 18). The evolutionary puzzle of homosexuality. Retrieved December 13, 2015, from <http://www.bbc.com/news/magazine-26089486>
- Lewis, R.J., Derlega, V.J., Griffin, J.L., & Krowinski, A.C. (2003). Stressors for gay men and lesbians: life stress, gay-related stress, stigma consciousness, and depressive symptoms. *Journal of Social and Clinical Psychology*, 22(6), 716-729. doi: 10.1521/jscp.22.6.716.22932
- Lea, T., de Wit, J., & Reynolds, R. (2013). Minority stress in lesbian, gay and bisexual young adults in Australia: associations with psychological distress, suicidality, and substance use. *Archives of sexual behavior*, 42, 1571-1578. doi: 10.1007/s10508-014-0266-6
- MacInnis, C.C., & Hodson, G. (2013). Is homophobia associated with an implicit same-sex attraction? *Journal of sex research*, 50(8), 777-785. doi: 10.1080/00224499.2012.690111
- Mays, V.M., & Cochran, S.D. (2001). Mental health correlates of perceived discrimination among lesbian, gay, and bisexual adults in the United States. *American Journal of Public Health*, 91(11), 1869-1876. doi: 10.2105/AJPH.91.11.1869
- Mcdermott, E., Roen, K., & Scourfield, J. (2008). Avoiding shame: Young LGBT people, homophobia and self-destructive behaviours. *Culture, Health & Sexuality*, 10(8), 815-829. doi: 10.1080/13691050802380974
- Meyer, I. & Dean, L. (1998). Internalized homophobia, intimacy and sexual behavior among gay and bisexual men. In Herek, G.M. *Stigma and sexual orientation: understanding*

prejudice against lesbians, gay men and bisexuals (p.161). Thousand Oaks, CA: SAGE Publications

Naugle, D. (2009). The Platonic concept of love: the symposium (Unpublished doctoral dissertation). Dallas, TX

Polivy, J., & Herman, C.P. (2006). An evolutionary perspective on dieting. *Appetite*, *47(1)*, 30-35. doi: doi:10.1016/j.appet.2006.02.009

Rahman, Q., & Hull, M.S. (2004). An empirical test of the kin selection hypothesis for male homosexuality. *Archives of Sexual Behavior*, *34(4)*, 461-467. doi: 10.1007/s10508-005-4345-6

de Ridder, D., & van den Bos, R. (2006). Evolutionary perspectives on overeating and overweight. Introduction to the special section of appetite. *Appetite*, *47(1)*, 1-2. doi: 10.1016/j.appet.2006.02.012

Saghir, M.T., & Robins, E. (1973). *Male and female homosexuality: a comprehensive investigation*. Baltimore; Williams & Wilkins

Sanders, A.R., Martin, E.R., Beecham, G.W., Guo, S., Dawood, K., Riegers, G., ... Bailey, J.M. (2015). Genome-wide scan demonstrates significant linkage for male sexual orientation. *Psychological Medicine*, *45(7)*, 1379-1388. doi: <http://dx.doi.org/10.1017/S003329174002451>

Thomas, F., Mience, M.C., Masson, J. & Bernoussi, A. (2014). Unprotected sex and internalized homophobia. *The Journal of Men's Studies*, *22(2)*, 155-162. Doi: 10.3149/jms.2202.155

Træen, B., Martinussen, M., & Vittersø, J. (2009). Sexual orientation and quality of life among university students from Cuba, Norway, India, and South Africa. *Journal of Homosexuality*, *56*, 655-669. doi: 10.1080/00918360903005311

- VanderLaan, D.P., Petterson, L.J., Mallard, R.W., & Vasey, P.L. (2015). (Trans)gender role expectations and child care in Samoa. *Journal of Sex Research, 52*(6), 710-720. doi: 10.1080/00224499.2014.884210
- Vasey, P.L., & VanderLaan, D.P. (2011). Sexual orientation in men and avuncularity in Japan: implications for the kin selection hypothesis. *Archives of Sexual Behavior, 41*(1), 209-215. doi: 10.1007/s10508-011-9763-z
- Vasey, P.L., Pocock, D.S., & VanderLaan, D.P. (2007). Kin selection and male androphilia in Samoan *fa'afafine*. *Evolution and Human Behavior, 28*, 159-167. doi: 10.1016/j.evolhumbehav.2006.08.004
- Wang, J., & Sauer, M.V. (2006). In vitro fertilization (IVF): a review of 3 decades of clinical innovation and technological advancement. *Therapeutics and Clinical Risk Management, 2*(4), 355-364. doi: 10.2147/tcrm.2006.2.4.355
- Warringer, K., Nagoshi, C.T., & Nagoshi, J.L. (2013). Correlates of homophobia, transphobia, and internalized homophobia in gay or lesbian and heterosexual samples. *Journal of homosexuality, 60*, 1297-1314. doi: 10.1080/00918369.2013.806177
- Wilson, E.O. (1975). *Sociobiology: the new synthesis*. Cambridge, MA: Belknap Press
- Williamson, I.R. (2000). Internalized homophobia and health issues affecting lesbians and gay men. *Health Education Research, theory and practice 15*(1), 97-107. doi: 10.1093/her/15.1.97
- Whitman, F.L. (1983). Culturally invariable properties of male homosexuality: tentative conclusions from cross-cultural research. *Archives of Sexual Behavior, 12*, 207-226. doi: 10.1007/BF01542072

Appendix A

Questionnaire

1. How old are you?
- Under 20 years old
 - 20-25 years old
 - 26-30 years old
 - Over 30 years old
2. What is your current relationship with your biological parents? (Check all that apply)
- I am in good contact with my biological parents
 - I am not in good contact with my biological parents
 - I am adopted
 - My biological parents passed away
 - Other _____

3. How many full biological sisters do you have?

4. How many full biological brothers do you have?

5. Are you in regular contact with your full biological siblings?
- Yes, I am in regular contact with my full biological siblings
 - No, I am not in regular contact with my full biological siblings
 - I do not have any full biological siblings
 - Other _____

For each of the questions 6-11, please rate your level of agreement from 1 (strongly disagree) to 7 (strongly agree).

6. I feel close to my biological family

1 – 2 – 3 – 4 – 5 – 6 – 7

7. My biological family is important to me

1 – 2 – 3 – 4 – 5 – 6 – 7

8. I think it is important to contact my biological family regularly

1 – 2 – 3 – 4 – 5 – 6 – 7

9. I feel estranged from my biological family

1 – 2 – 3 – 4 – 5 – 6 – 7

10. I spend a lot of time with my biological family

1 – 2 – 3 – 4 – 5 – 6 – 7

11. When there is a problem within my biological family, I am always there to help

1 – 2 – 3 – 4 – 5 – 6 – 7

12. Do you have any full biological nieces?

- No, I do not have any full biological nieces
- Yes, number of full biological niece(s): _____
If participant answers (a), question 13-20 are skipped

13. How old is your (eldest) full biological niece?

- 0-5 years old

- b) 6-10 years old
- c) 11-15 years old
- d) 16-20 years old
- e) Over 20 years old

14. Are you in contact with your full biological niece or nieces?

- a) Yes, I am in contact with my full biological niece or nieces
- b) No, I am not in contact with my full biological niece or nieces

15. On average, during periods when you are in contact with your full biological niece or nieces, how much time do you usually get to spend with her or them?

Hours a week: _____

Hours a month: _____

Days a year: _____

16. On average, during periods when you are in contact with your full biological niece or nieces, how much time do you usually take care of her or them without other members of your family?

Hours a week: _____

Hours a month: _____

Days a year: _____

17. On average, during periods when you are in contact with your full biological niece or nieces, how much time do you usually spend alone with her or them?

Hours a week: _____

Hours a month: _____

Days a year: _____

18. To what extent are your siblings receptive to you spending time with your full biological niece or nieces?

- a) They let me spend time with my full biological niece or nieces as much as I want
- b) They let me spend considerable time with my full biological niece or nieces
- c) They let me spend limited time with my full biological niece or nieces
- d) They prefer to not let me spend time with my full biological niece or nieces

19. How often do your siblings ask you to babysit your full biological niece or nieces?

- a) My siblings regularly ask me to babysit my full biological niece or nieces
- b) My siblings sometimes ask me to babysit my full biological niece or nieces
- c) My siblings never ask me to babysit my full biological niece or nieces
- d) I do not have any opportunity to babysit my full biological niece or nieces

20. How much alone time do you have with your full biological niece or nieces compared to your parents?

- a) I spend more time a week alone with my full biological niece or nieces than my parents
- b) I spend the same amount of time a week alone with my full biological niece or nieces as my parents
- c) I spend less time a week alone with my full biological niece or nieces than my parents

21. Do you have any full biological nephews?

- a) No, I do not have any full biological nephews
- b) Yes, number of full biological nephew(s): _____

If participant answers (a), question 22-29 are skipped

22. How old is your (eldest) full biological nephew?

- f) 0-5 years old
- g) 6-10 years old
- h) 11-15 years old
- i) 16-20 years old
- j) Over 20 years old

23. Are you in contact with your full biological nephew or nephews?

- a) Yes, I am in contact with my full biological nephew or nephews
- b) No, I am not in contact with my full biological nephew or nephews

24. On average, during periods when you are in contact with you full biological nephew or nephews, how much time do you usually get to spend with him or them?

Hours a week: _____

Hours a month: _____

Days a year: _____

25. On average, during periods when you are in contact with your full biological nephew or nephews, how much time do you usually take care of him or them without other members of your family?

Hours a week: _____

Hours a month: _____

Days a year: _____

26. On average, during periods when you are in contact with your full biological nephew or nephews, how much time do you usually spend alone with him or them?

Hours a week: _____

Hours a month: _____

Days a year: _____

27. To what extent are your siblings receptive to you spending time with your full biological nephew or nephews?

- a) They let me spend time with my full biological nephew or nephews as much as I want
- b) They let me spend considerable time with my full biological nephew or nephews
- c) They let me spend limited time with my full biological nephew or nephews
- d) They prefer to not let me spend time with my full biological nephew or nephews

28. How often do your siblings ask you to babysit your full biological nephew or nephews?

- e) My siblings regularly ask me to babysit my full biological nephew or nephews
- f) My siblings sometimes ask me to babysit my full biological nephew or nephews
- g) My siblings never ask me to babysit my full biological nephew or nephews
- h) I do not have any opportunity to babysit my full biological nephew or nephews

29. How much alone time do you have with your full biological nephew or nephews compared to your parents?

- a) I spend more time a week alone with my full biological nephew or nephews than my parents
- b) I spend the same amount of time a week alone with my full biological nephew or nephews as my parents
- c) I spend less time a week alone with my full biological nephew or nephews than my parents

30. Imagine yourself as an uncle or aunt of an **8 year old niece** who was going to spend the night at a friend's house. How would you feel about learning that the friend's **mother** was a lesbian?

1 (Very negative)– 2 (Negative) – 3 (Neutral) – 4 (Positive) -5(Very Positive)

Further comments (optional): _____

31. Imagine yourself as an uncle or aunt of an **8 year old niece** who was going to spend the night at a friend's house. How would you feel about learning that the friend's **father** was gay?

1 (Very negative)– 2 (Negative) – 3 (Neutral) – 4 (Positive) -5(Very Positive)

Further comments (optional): _____

32. Imagine yourself as an uncle or aunt of a **21 year old niece** who was going to spend the night at a friend's house. How would you feel about learning that the friend's **mother** was a lesbian?

1 (Very negative)– 2 (Negative) – 3 (Neutral) – 4 (Positive) -5(Very Positive)

Further comments (optional): _____

33. Imagine yourself as an uncle or aunt of a **21 year old niece** who was going to spend the night at a friend's house. How would you feel about learning that the friend's **father** was gay?

1 (Very negative)– 2 (Negative) – 3 (Neutral) – 4 (Positive) -5(Very Positive)

Further comments (optional): _____

34. Imagine yourself as an uncle or aunt of an **8 year old nephew** who was going to spend the night at a friend's house. How would you feel about learning that the friend's **mother** was a lesbian?

1 (Very negative)– 2 (Negative) – 3 (Neutral) – 4 (Positive) -5(Very Positive)

Further comments (optional): _____

35. Imagine yourself as an uncle or aunt of an **8 year old nephew** who was going to spend the night at a friend's house. How would you feel about learning that the friend's **father** was gay?

1 (Very negative)– 2 (Negative) – 3 (Neutral) – 4 (Positive) -5(Very Positive)

Further comments (optional): _____

36. Imagine yourself as an uncle or aunt of a **21 year old nephew** who was going to spend the night at a friend's house. How would you feel about learning that the friend's **mother** was a lesbian?

1 (Very negative)– 2 (Negative) – 3 (Neutral) – 4 (Positive) -5(Very Positive)

Further comments (optional): _____

37. Imagine yourself as an uncle or aunt of a **21 year old nephew** who was going to spend the night at a friend's house. How would you feel about learning that the friend's **father** was gay?

1 (Very negative)– 2 (Negative) – 3 (Neutral) – 4 (Positive) -5(Very Positive)

Further comments (optional): _____

38. What was your assigned sex at birth?

- a) Male
- b) Female
- c) Intersex
- d) Other _____

39. What is your gender identity? (Check all that apply)

- a) Male
- b) Female
- c) Transgender
- d) Other _____

40. What is your race? (Check all that apply)

- a) Native American/Alaskan Native
- b) Asian or Pacific Islander
- c) Black/African American
- d) Hispanic/Latino
- e) White/Caucasian
- f) Multiracial
- g) Other _____

41. What is your classification in college?

- a) Freshman
- b) Sophomore
- c) Junior
- d) Senior
- e) Graduate student
- f) N/A
- g) Other _____

42. How do you identify your sexual orientation? (Check all that apply)

- a) Heterosexual
- b) Lesbian
- c) Gay
- d) Bisexual
- e) Asexual
- f) Other _____

43. At what age did you develop a clear sense of your sexual orientation?

- a) At or before the age of 5
- b) At the age of 6-10
- c) At the age of 11-15

- d) At the age of 16-20
- e) After the age of 20
- f) I am uncertain about my sexual orientation

44. When was the first time you came out to someone as LGB?

- a) I identify as heterosexual
- b) I have yet to come out
- c) The first time when I came out to someone as LGB was at the age of _____

45. Does your biological family know about your sexual orientation?

- a) Yes, my biological family knows about my sexual orientation
- b) No, my biological family does not know about my sexual orientation
- c) Other _____

46. In the past 6 months have you kissed someone who is... (Check all that apply)

- a) Male
- b) Female
- c) Transgender
- d) Other

47. In the past 6 months, have you kissed someone who is... (Check all that apply)

- a) Male
- b) Female
- c) Transgender
- d) Other

48. In the past 6 months, have you kissed someone who is... (Check all that apply)

- a) Male
- b) Female
- c) Transgender
- d) Other

49. In your lifetime, how many intimate partners have you had who were... (Check all that apply)

	0	1-3	4-6	7+
Male				
Female				
Transgender				
Other				

Appendix B1

Frequency table nieces

Do you have any niece(s)?	Yes	No
Other	12	37
Heterosexual	8	61
Gay	3	8
Lesbian	1	8
Total	24 (17%)	114 (83%)

Appendix B2

Frequency table nephews

Do you have any nephew(s)?	Yes	No
Other	7	41
Heterosexual	9	60
Gay	3	8
Lesbian	1	8
Total	20 (15%)	117 (85%)

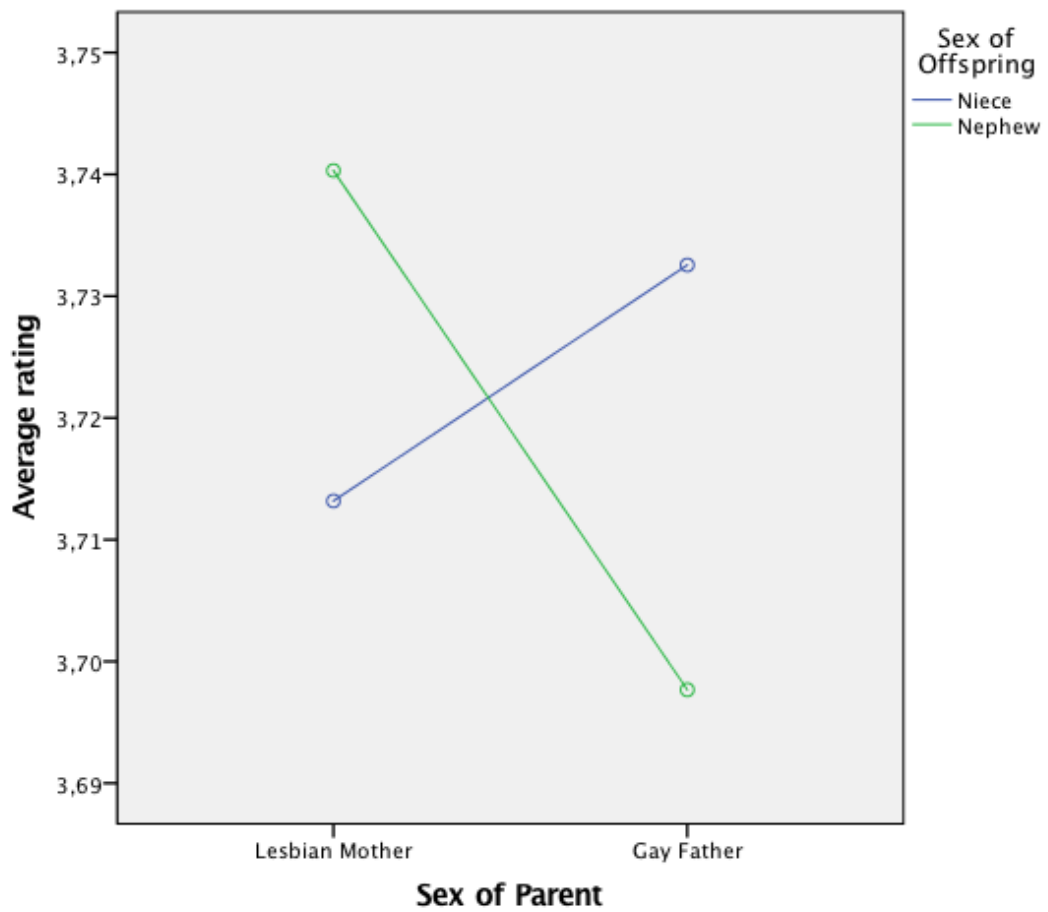
Appendix C1

Analysis 1: Average responses per imaginary questions for respectively females and males

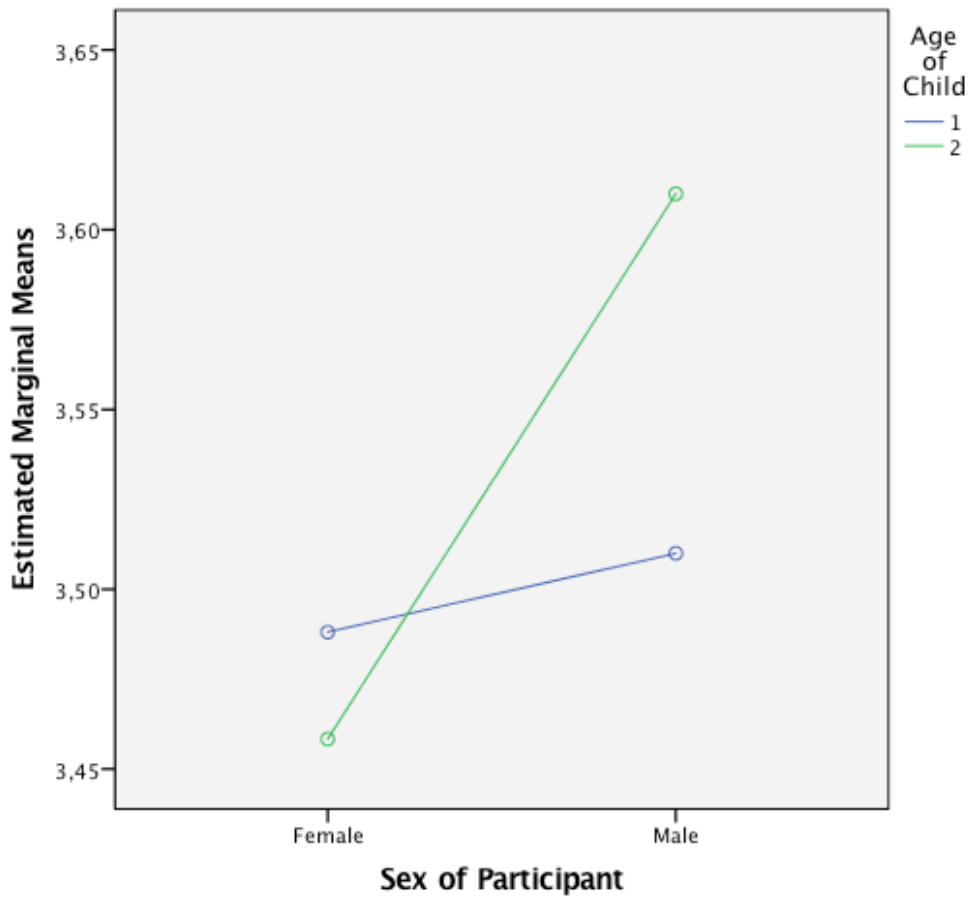
		Friend's Parent	
Sex of offspring	Age	Mother	Father
Female	8	3.7753/3.5581	3.7978/3.5814
	21	3.7273/3.6744	3.7586/3.6744
Male	8	3.7865/3.6585	3.7303/3.6047
	21	3.7416/3.6905	3.7191/3.6279

Appendix C2

Analysis 2: Interaction between sex of the offspring, and sex of gay or lesbian parent



Appendix C3



Appendix C4

Analysis 3: Average responses per imaginary questions for respectively females and males.

Orientation	Sex of offspring	Age	Friend's or Gay Parent	
			Lesbian Mother	Father
Heterosexual	Female	8	3.467/3.440	3.489/3.640
		21	3.444/3.480	3.467/3.600
	Male	8	3.511/3.600	3.422/3.640
		21	3.467/3.520	3.422/3.560
Other	Female	8	4.146/3.750	4.049/3.750
		21	4.171/3.750	4.098/3.750
	Male	8	4.122/3.750	4.073/3.750
		21	4.098/3.750	4.073/3.750