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Murray State University Honors College

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Correlates of Anti-Asexual Bias

Lauren Robinson May 2024

Approved to fulfill the	
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Honors Thesis requirement	Dr. Warren Edminster, Executive Director
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Diploma	

Examination Approval Page

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Department: Psychology	
Date of Defense: April 22, 2024	
Approval by Examining Committee:	
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Correlates of Anti-Asexual Bias in the Bible Belt

Submitted in partial fulfillment of the requirements for the Murray State University Honors Diploma

Lauren R. Robinson

May 2024

Abstract

Many studies focus on LGBTQIA+ individuals in the United States, but there are fewer studies about asexuality, especially in the Bible Belt: a collection of states in the Southeast with populations having increased rates of conservatism, religiosity, and expectations of traditional gender and sexuality norms (Baunach et al, 2009). The purpose of the study was to examine antiasexual bias and its relation to different variables in college-age students who attended college and/or lived in the Bible Belt. It was hypothesized political positioning, ethnic and racial background, religiosity/spirituality, adherence to social norms, traditional vs egalitarian gender roles, and pathologizing of asexual individuals would predict anti-asexual bias. 106 participants completed a battery of assessments including Traditional Egalitarian Sex Role (Larson & Long, 1988; $\alpha = .93$), Attitudes Towards Asexuals (Hoffarth et al, 2015; $\alpha = .94$), Social-Norms Espousal Scale (Levine et al., 2013; $\alpha = .82$), Conservatism (MPA Traditionalism) (Goldberg et al, 2006; $\alpha = .84$), and Spirituality Religiousness (Peterson & Seligman, 2003; $\alpha = .94$) scales. Results indicated these variables, besides ethnic and racial background, positively correlated with anti-asexual bias, implicating greater conservatism, spirituality/religiosity, traditional gender roles, greater adherence to social norms, and pathologizing of asexuality may predict negative attitudes toward asexuality. All significant correlations reported r > .20 and p values < .05

Keywords: asexuality, predictors of anti-asexual bias, LGBTQIA+, gender roles, ethnic and racial identity, pathologizing

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Correlates of Anti-Asexual Bias in the Bible Belt

Asexuality is a sexual orientation that is defined as experiencing little or a lack of sexual attraction to people of either sex or gender and includes that the individual self-identifies as asexual (Bogaert, 2004; Bogaert, 2006; Bogaert, 2012, Bogaert, 2015; Brotto & Yule, 2017). Asexuality was first known in Kinsey's research on sexuality in 1948 and 1953 by referring to asexual individuals as group "X" (Brown & Fee, 2003). Alfred Kinsey was an American sexologist whose research aided in expanding knowledge about human sexuality (Brown & Fee, 2003). It is important to note that aromanticism, a romantic orientation defined as lack of romantic attraction, is not the same as asexuality, which implies lack of sexual attraction (Bogaert, 2015). Asexuality, like other elements of sexuality, can be considered a spectrum with identities such as demi-sexual and grey-sexual (Dawson et al, 2016). These identities emerge when there are specific circumstances in which sexual attraction and desire may occur (Catri, 2021).

As part of the LGBTQIA+ community, a community of individuals who identify as lesbian, gay, bisexual, transgender, queer, intersex, and asexual and other identities collectively under the LGBTQIA+ umbrella (UC Davis LGBTQIA Resource Center), asexual individuals experience discrimination, prejudice, and homonegativity, sharing in negative consequences to their mental health and life outcomes (Burgess et al, 2007; Russell & Fish, 2016; McInroy et al, 2020). Homonegativity involves behaviors, feelings, and negative attitudes towards individuals who are perceived as or identify as part of the LGBTQIA+ (Renzetti & Edleson, 2008). Asexual individuals, like other LGBTQIA+ people, experience discrimination and conversion therapy, which leads to negative mental health outcomes.

Individuals who are a part of the LGBTQIA+ community experience discrimination of various forms in all different spheres of daily living. In general, LGBTQ adults in the Unites States reported experiencing interpersonal and institutional discrimination in the form of slurs, microaggressions, sexual harassment, violence, and other types of harassment (such as when using the restroom) (Casey et al, 2019). Asexual individuals reported experiencing more discrimination and stigma than non-asexual lesbian, gay, and bisexual individuals (Rothblum et al, 2020).

In healthcare, there are great disparities in quality and access to physical and mental health care of asexual individuals when compared to cisgender, heterosexual individuals (Conron et al, 2010; McCrone, 2018). While trying to receive healthcare, some LGBTQ individuals report experiencing discrimination while others avoided getting healthcare because they anticipated discriminative encounters (Casey et al, 2019).

In education, LGBT students experienced increased harassment and discrimination in the form of bullying from other students, increasing risk of self-harm, suicidal ideation, and suicide attempts (Jadva et al, 2023). Research extends these ideas to asexuality. In a study, researchers found sexual minority bias towards asexuality (as well as homosexuality and bisexuality), and heterosexual individuals were willing to discriminate against asexual, bisexual, and homosexual individuals for housing and employment opportunities relative to other heterosexual individuals (MacInnis & Hodson, 2012). In addition, they found that heterosexuals evaluated asexual individuals more negatively and were viewed as less human compared to heterosexuals and less valued as contact partners when compared to other heterosexual individuals (MacInnis & Hodson, 2012). When compared to other sexual minorities, asexual individuals were perceived as animalistic and machine-like (MacInnis & Hodson, 2012). These perceptions are harmful to

asexual individuals, making it more difficult to establish relationships with others at a time when relationship building is desired most.

In addition, racial and ethnic minorities who are part of the LGBTQIA+ community were more likely to be institutionally discriminated against than white heterosexual individuals (Casey et al, 2019). For example, racial and ethnic minorities were twice as likely as whites to report discrimination when applying for jobs, when voting or participating in politics, when interacting with the legal system such as the police or court system, and when applying to and during university (Casey et al, 2019). LGBTQIA+ people of color may have an even more difficult experience with identifying as asexual.

Besides discrimination, LGBTQIA+ individuals may be forced into conversion therapy, which is defined as "a therapeutic approach, or any model or individual viewpoint that demonstrates any assumption that any sexual orientation or gender identity is inherently preferable to any other, and which attempts to bring about a change of sexual orientation or gender identity or seeks to suppress an individual's expression of sexual orientation or gender identity on that basis" (Trispiotis & Purshouse, 2022, p. 5). Some motivations include religious beliefs such as evangelical Christianity and Orthodox Judaism, which often disapprove of samesex relations (Haldeman, 2022). Some adults with these beliefs do conversion therapy because they prioritize maintaining positive relationships with their families and religious communities (Haldeman, 2022). Adolescents, who may be pressured by their families, may also come from a conservative and religious background, especially those in low socioeconomic status families (Haldeman, 2022).

Though conversion therapy may occur in secular settings, conversion therapy may also occur in religious settings, including counseling with a religious leader, group sessions held at churches

or religious institutions, and camps or retreats, or conferences (Kinitz et al, 2022). Individuals in therapy may have experienced religious practices like fasting or intensive prayer (Kinitz et al, 2022F). The practice of conversion therapy harms LGBTQIA+ individuals' physical health and mental health through techniques such as 'corrective' rape, sexual assault, imprisonment and kidnapping, physical abuse, electroconvulsive shock treatments, hormone treatments, aversion therapy, psychotherapy, peer support, and pastoral counseling (Trispiotis & Purshouse, 2022).

According to data from the National LGBT Survey: Research Report (2018) in the United Kingdom, asexual individuals were 10% more likely than others who identified with different sexual orientations to be offered or to undergo conversion therapy. Because of negative attitudes towards asexual individuals, asexual people may endure emotional and physical abuse by others, so they can conform them to heterosexual norms.

Oftentimes, experiencing homonegativity, discrimination, and conversion therapy may have a strong relationship with negative mental health consequences, especially in the southern United States (Russell & Fish, 2016; Yule et al, 2013; Higbee et al, 2020). According to the minority stress theory, minority groups who experience stress from discriminative and prejudicial experiences may be at greater risk for negative mental health outcomes such as mental health disorders and psychosocial stress (Meyer, 1995; McConnell et al, 2018). This impacts the LGBTQIA+ community as they are sexual minorities. Compared to heterosexual individuals, LGBT individuals experience elevated levels of psychological distress and mental diagnoses compared to cisgender and heterosexual peers (Burgess et al, 2007; Russell & Fish, 2016). Individuals who were a part of the LGBT had higher levels of perceived mental health needs and greater use of mental health services (Burgess et al, 2007). In addition, LGBT adolescents and adults have increased diagnoses of mood, anxiety, and substance use disorders as well as

depression, post-traumatic stress disorder, and suicidality (Russell & Fish, 2016). One other study found that if an individual underwent conversion therapy as an adolescent, they had a significantly higher probability of experiencing a serious mental illness (Highee et al, 2020). Higher rates of mental disorders and diagnoses influence quality of life in all other areas like work and education.

Although asexuality is a minority sexual identity within the United States, accounting for around only 1% of the population (Rothblum et al, 2020), researchers have found that asexual men and women scored higher on symptoms of anxiety, hostility, phobic anxiety, and psychoticism as well as symptoms of suicidality compared to heterosexual men and women (Yule et al, 2013). Asexual individuals, like others in the LGBTQIA+, share experiences of poor mental health. These rising rates of negative mental health could be partly alleviated if certain actions had occurred to get to the source of discrimination, prejudice, and homonegativity, but many institutions do not try to be inclusive. Instead, there are assumptions, prejudice, and/or bias against the LGBTQIA+ community, especially towards asexual individuals, as they do not engage in heterosexual norms. By researching predictors of anti-asexual bias, people can implement policies, training, and interventions to help others learn about asexuality, reducing discrimination and prejudice, and thus decreasing poor mental health outcomes and diagnoses.

In order to reduce negative attitudes and discrimination towards asexual individuals, necessary interventions, training, and policy must take place in relationships, education, and public spaces. In a study for LGBTQIA youth ages 12-15, researchers found that certain psychosocial interventions for families, such as creating safe and accepting spaces, sharing experiences, and using a cognitive behavioral or attachment-based family therapy frameworks, significantly reduced symptoms of mental illness like depression, sexual minority stress, and

substance use (Van Der Pol-Harney & McAloon, 2019). Other studies have supported how important it is for asexual and other LGBT individuals to receive social support from friends, significant others, and family members (McConnell et al, 2015). Social support and family involvement are imperative components for improvement of mental health and mental health treatments as these additions would be a part of the child's everyday life.

In addition, interventions in schools may increase inclusion of asexual identifying students. School environments are one of the leading predictors for students and their emotional and behavioral outcomes because of teaching and learning experiences as well as peer engagement (Maxwell et al, 2017). Positive school experiences had positive influences over risks of self-harm, suicidal ideation, and suicide attempts (Jadva et al, 2023).

In other research, whole or multi-level interventions for both staff and students were found to result in the most inclusion of LGBTQ+ individuals as well as reduction in mental illness (McDermott et al, 2023). In this study, researchers found eight intervention components that reduced mental health distress: affirmative visual displays of their identities, external signs for LGBTQ+ support, standalone input, school-based LGBTQ+ support groups, curriculum-based delivery of information, staff training, inclusion policies, and having trusted adults (McDermott et al, 2023). By demonstrating ways to increase inclusion and reduce mental illness, this study shows that prejudice can be reduced in a public institutional system with staff and students. In another example of school wide interventions and training, pre-service teachers underwent LGBTQI+ inclusion training and education through workshops in which they were educated on basic inclusion practices, straight and cisgender privileges, and opportunities for LGBTQI+ inclusive teachings in the class curriculum (McKenzie et al, 2024). Before these training procedures, pre-services teachers had limited information and awareness of inclusive practices,

but after training, they were able to increase materials and inclusive practices in their classrooms (McKenzie et al, 2024). Overall, these research studies on implementing training and interventions prove that these methods work and increase positive school and work spaces for staff and students. In addition, these studies emphasize the need for these measures to be implemented system wide for the greatest effect to occur.

In another study, medical and therapy practitioners who educated themselves on asexuality had more positive experiences with asexual patients (Flanagan & Peters, 2020). This indicates that education and training for students as well as teachers and healthcare workers can influence increasing positive health related care for individuals who identify as asexual in society, resulting in better quality mental and physical health overall.

By researching predictors of anti-asexual bias, researchers can learn about why these predictors exist and they can be reduced. Then, people and institutions can create interventions and inclusive policies to help others learn about and include asexual individuals more positively in their lives. These measures must be put in place in a way that encompasses the whole system rather than just a small part to achieve overall efficiency. However, there is limited research into predictors of bias against asexuality. Asexuality is one of the more recent and least studied sexual minority groups, yet they too experience negativity, bias, and discrimination daily. There is a need to advocate for the support of all sexual and gender minorities and not just the major known sexual and gender minorities, like lesbian, gay, bisexual, and transgender individuals.

Predictors of Anti-Asexual Bias

While little is known about predictors of anti-asexual bias, preliminary research suggests the belief in the inevitability of sexual attraction, social dominance orientation, political

positioning, religion and spirituality, and dehumanization of asexual individuals may contribute to this bias.

Belief in the Inevitability of Attraction

One predictor of negative attitudes towards asexual individuals is the belief in the inevitability of sexual attraction (Zivony & Reggev, 2023). In the course of human development, people typically develop sexual organs and characteristics during puberty which aids in sexual attraction and sexual reproduction (DeLamater & Friedrich, 2002). Based on this information, many think sexual attraction is an experience that all people have (Carrigan, 2012). This assumption leads to the idea that asexuality is considered just a "phase" or transition stage in human development rather than a sexual identity, and by not moving on from identifying as asexual, those individuals are perceived negatively through stereotypes that associate asexuality with characteristics such as immaturity or as non-social people (Zivony & Reggev, 2023). In the study, it was found that participants who adhered to the assumption that attraction was inevitable were less likely to be motivated to be friend a person who identifies as asexual (Zivony & Reggev, 2023). Participants may have been less likely to be friend as exual individuals because of the perception of difference. Adolescence and puberty are periods of uncertainty, and some people may prefer people who are more similar to them as friends. These attitudes and stereotypes can have negative impacts on their livelihoods, especially as adolescents when sexual development starts.

Social Dominance Orientation

Another predictor of negative attitudes towards asexual individuals is social dominance orientation, which is a personality trait describing a person's degree of preference for inequality among social groups, especially if there is a greater preference for ingroups to dominate over

outgroups (Pratto et al, 1994). In past research, social dominance orientation has had consistent correlations with opposition to gay and lesbian rights as well as other liberal motives like social programs, racial policies, women's rights, environmental programs, and support for military programs (Pratto et al, 1994). In addition, there was a strong correlation between social dominance theory and Republican party identification and law-and-order policies (Pratto et al, 1994). In more recent research, negative attitudes towards asexual individuals (anti-asexual bias) were positively correlated with right-wing authoritarianism in Canada, which is a political orientation associated with being more likely to accept conventions, to submit to authority figures, and to have traditional right-wing ideology (Hoffarth et al, 2015). Social dominance orientation is related to anti-asexual bias in Greece as well (Iraklis, 2023).

Political Positioning

In past studies, it has been found that conservatives are more likely than liberals to believe that current social, economic, and political problems are fair and to exist in inequality (Hoyt & Parry, 2018). This shows social dominance orientation and conservatism may be interrelated as predictors of negative attitudes towards asexuality. There is a lot of discourse regarding the incessant political polarization in the country. Though there are individuals who identify as moderates, there is greater focus on liberalism vs conservatism. The extremes of liberalism and conservatism in politics are associated with positive and negative attitudes towards the LGBTQIA+ community. In a study, there were associations between conservatism and prejudice against stigmatized group members, including sexual and racial minorities (Hodson & Busseri, 2012). More specifically, political conservatism has influenced prejudice towards lesbian, gay, bisexual, and transgender individuals (Worthen et al, 2016). Right-wing authoritarianism have been found to predict anti-asexual bias because of asexuality being related

to singlism (MacInnis & Hodons, 2012; Hoffart et al, 2015) Greater conservative ideology was correlated with negative attitudes towards asexual individuals in Greece (Iraklis, 2023).

Religiosity and Spirituality

Religion and politics influence values of people in the United States. Although institutions in the United States are supposed to be secular, with a clear separation of church and state, personal religious and political values are present in the United States government as laws, bills, and political candidates. Many religions have teachings which ascribe to a paradigm of heterosexual marriage, reproduction, and gender norms (Campbell et al., 2019; Leeming; 2003; Mbuwayesango, 2015) – comprehensive review. Because asexuality typically involves little to no sexual attraction (Bogaert, 2004; 2006; 2012; 2015), this identity and way of living may stray from those religious teachings. Not all religions are as strict about marriage or reproduction. However, practicing religious fundamentalism, or strict, rigid thinking and adherence to religious texts (Alterneyer & Hunsberger, 2004), is related to greater prejudice toward other groups, including homosexuals (Hall et al, 2010; Hunsberger & Hackson, 2005). Higher religiosity is also related to negative attitudes towards asexuality (Iraklis, 2023). These teachings influence religious people in both their personal and professional lives. In professional spheres such as education and healthcare, providers and teachers with religious backgrounds are more likely to have negative attitudes towards LGBTQIA+ individuals as well as express discomfort with treating LGBTQIA+ patients and teaching LGBTQIA+ students (Westwood, 2022). These values may lead to disparities in health care for LGBTQIA+ individuals. In schools, students and staff could be discriminated against, influencing mental health; therefore, poor mental health may result in poor grades and work.

Dehumanization

Human rights for minority groups are a common issue in the United States, with studies reporting greater disparity in the south than in other regions of the United States (Hasenbush et al, 2014). In the past, members of the LGBTQIA+ community have been perceived as deviants who were criminal and/or immoral (Morris, 2023). Researchers found evidence of intergroup bias against those who identify as asexual, in which heterosexual individuals viewed asexual individuals as less human and less valued as contact partners compared to heterosexuals (MacInnis & Hodson, 2012). When compared to other sexual minorities such as homosexual or bisexual, asexual individuals were perceived as animalistic and machine-like (MacInnis & Hodson, 2012).

Less Studied Variables

A majority of research has been over predictors for negative attitudes towards the LGBTQIA+ community, but there are not as many studies concerning specifically asexual individuals and predictors of anti-asexual bias. Because of fewer studies, there are some variables that have not been studied along with asexuality. These may include traditional vs egalitarian gender roles, pathologizing asexuality, and intersectional identities of race and ethnic identities.

Traditional vs Egalitarian Roles

Many individuals believe in the heteronormative idea that there is a gender binary, meaning there are only male and female identities; however, gender identity is a social construct that is constantly changing (Nagoshi et al, 2014). In a heteronormative society, one typically believes their gender identity is consistent with performing masculine or feminine gender roles (Nagoshi et at, 2012). Sexual minority group members, especially those who identify as asexual, may not always follow these standard gender roles, meaning they may not follow the binary expectations

set by society. In a study of straight, bisexual, and homosexual individuals and personality traits, it was found that bisexual and homosexual individuals had greater degrees of openness compared to heterosexual individuals (Allen & Robson, 2020). Greater openness may contribute to more flexible ideas of gender and gender roles (Nagoshi et al, 2014).

With gender identity, there are expected gender norms and roles. Gender roles are based on societal interactions and consist of behaviors that are considered socially appropriate, and these norms and roles differ greatly for men and women (Blackstone, 2003). For instance, women are stereotyped as "less sexual" than men (Spurgas, 2020) and are socialized to not acknowledge any sexual desire of their own (McCabe et al, 2010; Tolman, 1994). Meanwhile, masculinity entails engaging in sexual advances with women, and this validates their masculinity with their peers (Murray, 2018; Schrock & Schwalbe, 2009).

Expected male norms and roles often contrast with asexual sexual identity because the concept that to be masculine is to be inherently sexual and to do sex does not align with asexuality (Tessler & Winer, 2023), in which there is little to no sexual attraction (Bogaert, 2004; 2006; 2012; 2015). In addition, more women and nonbinary individuals identify as asexual compared to men, but this may be related to expected gender norms and roles (Greaves et al, 2017; Rothblum et al, 2020). In another study, researchers found a significant negative correlation between patriarchal roles and LGBT support, especially with Asian/Pacific Islander and Hispanic/Latinx ethnic groups (Worthen, 2017). However, there is less research concerning traditional and egalitarian roles in the south.

Traditional gender roles are described as more rigid, with females being perceived as more nurturing and helping the home while males may be perceived as leaders and be heads of their households (Blackstone, 2003). Besides in the household, the concept of traditional roles may

extend to other parts of life such as work and education (Blackstone, 2003). In addition, traditional gender roles may emphasize the differences between female and male genders (Blackstone, 2003). Egalitarian roles are perceived as more flexible and non-traditional, in which gender does not determine their behavior and make decisions themselves on how to act or distribute roles in their relationships (Blackstone, 2003). Still, more research is needed in this area as little is known about asexual individuals and gender roles in the Bible Belt.

Pathologizing Asexuality

Historically, homosexuality and transgender identities have been pathologized or targeted for treatment. Pathologizing can be defined as the "assigning a diagnosis on the basis of cognitions or behaviors in the absence of substantive evidence that the cognitions or behaviors are maladaptive" (Rubin, 2000). This can be seen in various professional health spheres, especially psychology. For example, homosexuality was listed as a sociopathic personality disturbance in DSM-I and was diagnosed as a mental disorder until the third edition of the DSM-III (American Psychiatric Association, 1952; 1980). In the second and third editions of the DSM, homosexuality was replaced with Sexual Orientation Disturbance, which emphasized the disturbance related to the distress of the identity rather than homosexuality itself, and Ego Dystonic Homosexuality, which described distress associated with the inability to become attracted to the opposite sex (American Psychiatric Association, 1973; 1980). These replacement diagnoses legitimized the practices of conversion therapies. Besides homosexuality, there was a diagnosis known as "gender identity disorder," which later turned into a non-mental disorder diagnosis of gender dysphoria that described individuals who experienced significant distress with the sex and gender they were assigned at birth (American Psychiatric Association, 1980;

2013). These diagnoses contributed to the stigma around homosexual and gender queer identities (Minton, 2002).

Eventually, some of these diagnosable disorders were taken out of the DSM, but many medical and mental health professionals still do consider asexuality a disorder or pathology. For instance, there are two diagnoses in the DSM-5 associated with asexuality. The first disorder is Hypoactive Sexual Desire Disorder, which describes individuals with low to no sexual interest (American Psychiatric Association, 2013). The other disorder is Schizoid Personality Disorder and has Criteria A3, which describes having little, if any, interest in having sexual experiences with another person (American Psychiatric Association, 2013). These diagnoses create a question of whether asexuality is an identity or a disorder, and they imply discrimination against the asexual community as they pathologize their sexual identity instead of acknowledging and respecting its existence.

Asexual individuals too have expressed discrimination in health fields. In a study, some participants who identified as asexual to their medical doctors reported that their practitioners identified asexuality as a health condition to be treated rather than recognizing asexuality as an identity (Flanagan & Peters, 2020). Asexuality is not a disorder that enables dysfunction of the individual. Instead of pathologizing and treating these disorders, society should recognize that sex and sexuality is personal and is different for everyone. In addition, by not acknowledging asexuality as a sexual orientation and pathologizing their sexual identity, professionals in health fields are lacking in education and quality of care for their asexual patients.

Ethnic and Racial Identity

Although there is considerable research on the relationship between the LGBT community and racial and ethnic minorities, there is limited research concerning asexuality specifically in

different racial and ethnic communities. A sexual identity or orientation can coexist along with a racial or ethnic identity, meaning an individual has intersecting identities, which may influence a person's sense of belonging in either identity group. Minority sexual, racial, and ethnic identities are surrounded by stigma. Sexual and racial-ethnic identities develop during adolescence though in different ways (Jamil et al, 2009). These cultural groups may have different relationships with asexual people.

Certain ethnic and racial backgrounds, such as African American and Asian American communities, may not be as accepting of asexuality due to heterosexism and homophobia as well as restricting gender and sex roles, leading to concealment of sexual identity (Chung & Katayama, 1998; Tremble et al, 1989; Mays et al, 1993; Bridges et al, 2003; Bowleg, 2013). In addition, Hispanic cultural norms, such as conservative, religious beliefs, strict gender roles, traditional family values, and homophobia, may reduce chances of coming out (Akerlund & Cheung, 2000; Díaz, 1999, Espín, 1993; Rodrigeuz, 1996), making it less likely that those identifying with Hispanic cultures could have positive attitudes towards asexuality.

On the other hand, in Native American culture, there is an identity known as "Two-Spirit," a term created in the 1990s which describes an individual who identifies as having both a masculine and feminine spirit. (Re:searching for LGBTQ2S+ Health). Two-Spirit can also be considered an umbrella term, and it may be used by some Indigenous people to describe their sexual, gender, and spiritual identity (Re:searching for LGBTQ2S+ Health). Even before the term Two Spirit was created, Native Americans have had gender queer and homosexual identities that do not align with heterosexual norms. Because of these more fluid ideas of gender and sexuality, Native Americans may be more inclined to have positive attitudes towards asexuality.

Current Study

The purpose of the current study was to examine negative perceptions of asexuality such as prejudice and anti-asexual bias, and how those perceptions related to political positioning, ethnic and/or racial background, religiosity/spirituality, adherence to social norms, traditional vs egalitarian gender roles, and pathologizing of asexual individuals in college age students who attend college or live in the Bible Belt. The Bible Belt, a term coined by H. L. Mencken in the 1920s, is a collection of states in the southeast and part of the Midwest where populations have increased rates of conservatism, religiosity (specifically Protestant Christianity), and expectations of traditional gender and sexuality norms (Baunach et al, 2009; Brunn et al, 2011; Ericksen, 2019). In a study, demographics show Bible Belt denominations consisted of primarily white and less-educated individuals, had regions with less population density and older populations, and who tended to vote conservatively (Brunn et al, 2011). These factors influence negative perceptions in the form of stigma towards sexual minorities, like lesbian, gay, bisexual individuals, and gender queer individuals in these regions (Bean & Martinez, 2014; Schnabel, 2016; Costa et al, 2019; Frey et al, 2021). In a study, LGB individuals encountered stigma, discrimination, and prejudice, resulting in concealing and censoring their sexual orientations, lost connections to friends and family, and internalized homonegativity (Frey et al., 2021). Because of these already pre-existing notions, asexuality may also be widely negatively received by those in the Bible Belt. In addition, studies regarding asexuality and asexual individuals are fewer. As these states are known for having increased negative attitudes that discriminate towards LGBT and asexual individuals (Baunach et al, 2009), it is imperative to study these predictors, so people and institutions can make policies, laws, and interventions that will ensure asexual individuals' inclusion and safety.

Hypotheses

H1: There will be a positive correlation between political positioning (lean towards) conservatism and anti-asexual bias towards asexual individuals.

H2: There will be a positive correlation between religiosity/spirituality and anti-asexual bias towards asexual individuals.

H3: There will be a positive correlation between adherence to social norms and anti-asexual bias towards asexual individuals.

H4: There will be a positive correlation between traditional gender roles and anti-asexual bias.

H5: There will be a positive correlation between pathology of asexuality and anti-asexual bias.

H6: There will be a relationship between ethnic and/or racial minority status and anti-asexual bias.

Method

Participants

This study had 106 participants who contributed to this investigation. See Table 1 for demographic information. They were recruited through Murray State University's SONA research participant management program. The Murray State SONA program consists of Murray State University students in undergraduate psychology courses. Participants in the SONA research programs received SONA credits for participating.

Materials

Survey items were administered by a Google Form. Scales were administered in a random order as part of a larger study on SONA. Demographics were placed at the end of the survey to avoid carryover effects.

Demographics

A short demographics questionnaire was administered, recording age, sex, gender, sexual orientation, ethnic background and racial background, religious affiliation, political positioning, and if they know a person who is asexual. See Appendix A.

Measures

Anti-Asexual Bias. In order to measure anti-asexual bias, the Attitudes Towards Asexuals Scale (Hoffarth et al, 2015; α = .94) was used to measure perceptions towards individuals who identify as asexual via sixteen statements (e.g., Asexuality is probably just a phase.). Items were rated using a 9-point Likert scale with 1 indicating "strongly disagree" and 9 indicating "strongly agree." A final score on this measure was calculated by summing the scores of each question to find a total score. The minimum score possible was 16, and the maximum score possible was 144. Higher scores indicated greater anti-asexual bias. See Appendix B.

Political Positioning. In order to measure political positioning, the Conservatism (MPA Traditionalism) Scale (Goldberg et al, 2006; α = .84) was used to measure political positioning of the individual participants via ten statements (e.g., Believe that laws should be strictly enforced.). Items were rated using a 5-point Likert scale with 1 indicating "very inaccurate" and 5 indicating "very accurate." A final score on this measure was calculated by summing the scores of each question to find a total score. The minimum score possible was 10, and the maximum score possible was 100. Higher scores indicated the participant was more conservative and lower scores indicated the participant was more liberal. See Appendix C.

Adherence to Social Norms. In order to measure adherence to social norms, the Social-Norms Espousal Scale (Levine et al, 2013; $\alpha = .82$) was used to measure how greatly the participants adhere to social norms via fourteen statements (e.g., Our society is built on unwritten rules that members need to follow.). Items were rated using a 5-point Likert scale with 1

indicating "extremely uncharacteristic" and 5 indicating "extremely characteristic." A final score on this measure was calculated by finding the mean of the scores of each question to find a total score. The minimum score possible was 1, and the maximum score possible was 5. Higher scores indicated greater likelihood of adhering to social norms. See Appendix D.

Religiosity/Spirituality. In order to measure Religiosity/Spirituality, the Spirituality/Religiousness Scale (Peterson & Seligman, 2003; α = .94) was used to measure spirituality and/or religiosity of participants via nine statements (e.g., Am a spiritual person.). Items were rated using a 5-point Likert scale with 1 indicating "very inaccurate" and 5 indicating "very accurate." A final score on this measure was calculated by summing the scores of each question to find a total score. The minimum score possible was 9, and the maximum score possible was 81. Higher scores indicated greater spirituality or religiosity, and lower scores indicated less spirituality or religiosity. See Appendix E.

Traditional vs Egalitarian. In order to measure traditional (v. egalitarian) roles, the Traditional Egalitarian Sex Role Scale (Larson & Long, 1988; α = .93) was used to measure perceptions of traditional gender roles via twenty statements (e.g., Men who cry have weak character.). Items were rated using a 5-point Likert scale with 1 indicating "Strongly Agree" and 5 indicating "Strongly Disagree." A final score on this measure was calculated by summing the scores of each question to find a total score. The minimum score possible was 20, and the maximum score possible was 400. Higher scores indicated agreeing with more traditional gender roles while lower scores indicated agreeing with more egalitarian gender roles. See Appendix F.

Pathologization of Asexuality. In order to measure pathologization of asexuality, item 9 from the Attitudes Towards Asexuals scale, (Hoffarth et al, 2015; α = .93) was used to measure attitudes towards pathology of asexuality (e.g., Asexuality is a problem or defect). Item 9 was

rated using a 9-point Likert scale with 1 indicating "strongly disagree" and 9 indicating "strongly agree." A final score was calculated by identifying the number rated. The minimum score possible was 1 and the maximum score possible was 9. Higher scores indicated higher degrees of agreeing with pathologizing asexuality. See Appendix A.

Design and Procedure

This correlational study examined negative perceptions of asexuality and its relationships with political positioning, religiosity/spirituality, adherence to social norms, expected gender norms, pathologizing of asexual individuals, and different ethnic/racial backgrounds. This study was a part of a larger investigation and was approved by the IRB. Murray State University SONA participants were able to participate in this study. Upon choosing to participate, students were able to sign up for the study via SONA and followed the link to the online study. Surveys were administered through a Google Form. This study was part of a larger study that incorporated other measures of similar research.

Results

Table 2 shows that a Pearson correlation was conducted to test the hypotheses that there would be positive correlations between political positioning (lean towards) conservatism, religiosity/spirituality, traditional (vs. egalitarian) gender roles, adherence to social norms, pathologization of asexuality, and anti-asexual bias. All items were significantly, positively correlated with anti-asexual bias. In addition, these variables, correlated with one another, showing evidence of interrelatedness.

A one-way ANOVA test was conducted to test the hypothesis that there would be a relationship between ethnic and/or racial minority status and anti-asexual bias. There was not a significant difference between Caucasian/White (M = 50.55, SD = 29.50), Black or African

American (M = 56.09, SD = 33.32), Asian/Asian American (M = 29.50, SD = 2.12), more than one race (M = 34.33, SD = 25.15) on anti-asexual bias, F(3, 99) = .76, p = .52.

Because there were not many participants of different backgrounds, a post-hoc t-test was conducted to compare White/Caucasian participants to participants of other backgrounds. It was found there was not a significant difference between Caucasian/White (M = 50.55, SD = 29.50) and People of Color (M = 48.59, SD = 30.91) participants on anti-asexual bias, t(101) = .23, p = .82

Table 2. Correlations and Descriptive Statistics for Variables of Interest

[+							
		1.	2.	3.	4.	5.	6.
1.	Anti-Asexual Bias		.750**	.289**	.552**	.249*	.831**
2.	Traditional vs Egalitarian Roles			.294**	.413**	.312**	.580**
3.	Religiosity/Spirituality				.679**	.234*	.247*
4.	Political Positioning					.399**	.442**
5.	Adherence to Social Norms						.276**
6.	Pathologizing Asexuality						
	M	50.16	37.57	32.83	32.88	2.80	2.70
	SD	29.31	15.12	10.34	8.58	.59	2.35
	N	106	105	104	106	103	106

Note. *p < .05 (two-tailed), **p < .01 (two-tailed)

Note. Traditional (positive), Egalitarian (negative)

Note. Political Positioning Conservatism (positive), Liberalism (negative)

 Table 1. Demographics

Category	Sub-Category	N	Percent
Age	18-19	77	72.70
	20	12	11.30
	21-28	12	11.20
	Missing	5	4.70
Sex	Male	30	28.30
	Female	76	71.70
Gender	Male	30	66.00
	Female	70	28.30
	Transgender (female-to-male or FTM)	3	2.80
	Non-Binary	2	1.90
Sexual orientation	Straight/Heterosexual	80	75.50
	Gay	1	.90
	Lesbian	3	2.80
	Pansexual	2	1.90
	Bisexual	17	16.00
	Queer	1	.90
	Questioning	1	.90
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Ethnic background/Racial Background	Caucasian/White	87	82.10
	Black or African American	11	10.40
	Asian/Asian American	2	1.90
	More Than One Race	3	2.80
	Missing	3	2.80
Religious Affiliation	Christianity	84	79.25
Rengious / Immunon	Islam	1	.94
	Atheist	9	8.49
	Pagan	1	.94
	Other	9	8.49
	Missing	2	1.89
Political Positioning	Left-Party	22	20.80
	Center-Left Party	12	11.30
	Center Party	28	26.40
	Center-Right Party	13	12.30
	Right-Party	24	22.60
	Missing	7	6.60
Know An Asexual Person	Yes	41	38.68
MIOW AII ASCAUGI I CISOII	No	65	61.32
	TYU	UJ	01.34

Discussion

The purpose of the current study was to examine anti-asexual bias, and how anti-asexual bias related to political positioning, ethnic and/or racial background, religiosity/spirituality, adherence to social norms, traditional (vs. egalitarian) gender roles, and pathologizing of asexual individuals in college age students who attend college or live in the Bible Belt. All variables, besides racial and ethnic background, had an association with anti-asexual bias.

Main Variables

Political positioning was found to have a strong predictive relationship with anti-asexual bias. This correlation suggests that those having more conservative values may have more negative attitudes towards asexual people than do those who have more liberal values. These results are similar to others studies (Iraklis, 2023); however, this is the first study to find these results in the Bible Belt, an area of the United States known for historically having a greater population of conservatives (Baunach et al. 2009; Brunn et al, 2011; Ericksen, 2019). This research supports past research in which conservatives may be more likely to have negative attitudes towards asexual individuals as they are part of the LGBTQIA+ (Hodson & Busseri, 2012; Worthen et al, 2016). Something unexpected found in the data was that political positioning in this sample appeared to be more predictive of anti-asexual bias than spirituality/religiosity (see Table 2). This may suggest people are more willing to support their political values rather than religious or spiritual values.

Spirituality/Religiosity had a moderately predictive relationship with anti-asexual bias. These results mirror other studies (Hoffarth et al, 2015; Iraklis 2023) and are expected as much of the population practices Protestant Christianity (Baunach et al, 2009; Brunn et al, 2011;

Ericksen, 2019). Populations in the Bible Belt who practice Protestant Christianity may have fundamental or evangelical teachings, in which followers may practice more literal interpretations of the Bible (Altemeyer & Hunsberger, 2004). Asexuality does not coincide with these teachings as there is very little or a lack of sexual attraction, so this may relate to negativity towards asexual people.

Adherence to social norms was weakly predictive of anti-asexual bias, suggesting those with greater adherence to social norms are more likely to have negative attitudes towards asexual people. It is the least associated with anti-asexual bias, suggesting individuals may not value social norms as much as traditional gender roles, political values, or religious/spiritual values.

Traditional gender roles have a strong predictive relationship with anti-asexual bias. This suggests those who endorse traditional gender roles are more likely to have negative attitudes towards asexual people than those who support egalitarian roles. Those with support for traditional gender roles may not be more supportive of structure rather than flexibility in roles between genders. This contributes to the study of anti-asexual bias as there have not been other studies concerning traditional and egalitarian gender roles. In addition, traditional gender roles were more predictive of anti-asexual bias than all the other variables, suggesting endorsement of more traditional or strict gender roles are more influential than spirituality/religiosity, political positioning, adherence to social norms, or pathologizing of asexuality (see Table 2).

Pathologizing asexuality had a strong predictive relationship with anti-asexual bias. This suggests that considering asexuality as a problem or a defect is more likely to lead to negative attitudes towards asexual people. These results contribute to anti-asexual bias in the Bible Belt as there are many individuals who continue to have this assumption about asexuality.

Different groups of racial and ethnic backgrounds were not associated with anti-asexual bias. This suggests that specific groups may not predict anti-asexual bias. Many ethnic and racial groups have evidence of more traditional values. Black or African Americans and Asians and Asian American groups have increased heterosexism and homophobia as well as greater restriction of gender identities and sex roles (Chung & Katayama, 1998; Tremble et al, 1989; Mays et al, 1993; Bridges et al, 2003; Bowleg, 2013). In addition, there are many Hispanic cultural norms, like conservative, religious beliefs, strict gender roles, traditional family values, and homophobia (Akerlund & Cheung, 2000; Díaz, 1999, Espín, 1993; Rodrigeuz, 1996), may decrease chances of positive attitudes towards asexual people. This suggests that there may not be differences between perceptions of LGBTQIA+ people. In another study, there were no significant main effects for racial and ethnic backgrounds for heterosexual/straight individuals, meaning this variable by itself may not aid in understanding attitudes toward LGBT students as well as socio-cultural variables (Worthen et al, 2017). These results may be related to asexuality as well in that, socio-cultural variables like political positioning and religiosity/spirituality have more predictive associations of negative attitudes towards asexual people.

In addition, the data for racial and ethnic groups were very homogenous with over 80% of the sample being Caucasian/White participants with only less than 20% non-white participants (see Table 1). Due to the lack of diversity in the sample, there could be hidden differences between these different groups. This suggests lack of diversity may be masking real differences, or the difference was too small to detect with this sample. In previous studies, there have been instances in which ethnic or racial groups had associations with positive and negatives towards LGBT people. For example, among lesbian, gay, and bisexual participants, African American/Black, Asian/Pacific Islander, and Hispanic/Latinx groups had positive associations

with support of gay men (Worthen et al, 2017). These results suggest there is potential for LGBTQIA+ people who have intersecting identities with non-white ethnic and racial groups to have different attitudes for sexual orientations that are not heterosexuality, such as asexuality.

Limitations and Future Research

One limitation to this study is the data may not be generalizable to the population as the participant pool was very homogenous, including mostly freshman undergraduate students with White/Caucasian backgrounds from the Murray State SONA participant pool. Data may not be as applicable to older populations or populations of non-white/Caucasian racial and ethnic backgrounds. Smaller populations of people of color limited the tests the study was able to compute, so there was less data to investigate. Future studies who have access to larger and more diverse populations may be able to have more results concerning differing racial and ethnic backgrounds in the Bible Belt.

Another limitation is that not all participants knew an asexual person. In addition, this study did not provide a definition of asexuality or ask if the participants knew the definition of asexuality. These issues raised the concern of whether participants could answer all questions truthfully as some may not have known or understood asexuality as a sexual orientation. In future studies, besides asking if the participants knew someone who identified as asexual, they should also define or ask if the participants could define asexuality as part of the study.

One other limitation concerned how to measure pathologization of asexuality. There were not scales available to measure pathologizing of a sexual orientation. Because of this, the study utilized one of the questions on the Attitudes Towards Asexuals scale question "Asexuality is a problem or defect" instead. Perhaps, there are other ways to measure pathologization of asexuality or sexual orientation.

Another idea for future research could be distinguishing stigma towards the label, "asexuality," or towards an individual actively being "asexual" or lacking sexual attraction. All people in the LGBTQIA+ have the chance of experiencing discrimination, but it is unknown if they are being targeted based on their sexual orientation itself or just identifying as that sexual orientation.

This study is important as it contributes to the literature on predictors of anti-asexual bias in the Bible Belt. With increased rates of conservatism, religiosity/spirituality, and traditional gender norms and roles (Baunach et al, 2009; Brunn et al, 2011), it is especially important to implement policies of inclusion and education throughout as asexual individuals are vulnerable to discrimination and acephobia (McInroy et al, 2020). This is especially important in the Bible Belt and on college campuses as it shows two extremes. This sample included many younger and LGBTQIA+ students, but the study was conducted in a state that is hostile to them. Perhaps, these extremes can help each other in the process of education and inclusion.

Asexual individuals often experience discrimination in everyday situations, healthcare, education, and work. Bullying and exclusion are common parts of asexual people's lives, and dismissal of asexuality as a phase and diagnoses of their asexuality (e.g. Hypoactive Sexual Desire Disorder; Criteria A3 for Schizoid Personality Disorder) emphasizes the idea that asexuality is a problem or defect in need of labeling and treating (American Psychiatric Association, 2013; Flanagan & Peters, 2020). Specific "treatments" like conversion therapy exacerbate trauma and internalized acephobia (Trispiotis & Purshouse, 2022). These incessant interactions may be related to asexual people as they have scored higher on symptoms of suicidality, phobic anxiety, psychoticism, anxiety, and hostility when compared to heterosexual people (Yule et al, 2013). In addition, a study found that asexual youth, when compared to other

sexual minority youth, had higher internalized LGBTQ-phobia and tended to have poorer mental health (McInroy et al, 2020).

Understanding predictors of anti-asexual bias, such as traditional gender roles, greater conservatism and religiosity/spirituality, and greater adherence to social norms is critical to educating those with anti-asexual bias and to creating more inclusive spaces for all LGBTQIA+ people through policy and other systematic methods. Multiple studies in schools and workplaces show how change is possible, but only if education and inclusion is implemented throughout the entire system, including staff, workers, and students (Flanagan & Peters, 2020; McDermott et al, 2023; McKenzie et al, 2024). By being more inclusive, asexual people can finally be treated as fairly.

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Appendix [A]

Age: Number
Biological Sex Assigned at Birth: Male, Female, Intersex
Understanding that gender identity can be complex, which ONE category best describes your
GENDER IDENTITY now?
[] Male
[] Female
[] Transgender (female-to-male or FTM)
[] Transgender (male-to-female or MTF)
[] Non-binary
[] Other: please specify
Ethnic Background, please check one:
[] Hispanic/Latinx
[] Non-Hispanic/Latinx
Racial Background: Please check ONE:
[] Asian/Asian American
[] Native Hawaiian or other Pacific Islander
[] Black or African American
[] American Indian or Alaska Native
[] Caucasian/White
[] More than one race (please specify):
Other (please specify):
What is your sexual orientation?
[] Straight/Heterosexual
[] Lesbian
[] Gay
[] Bisexual

[] Pansexual
[] Queer
[] Two-spirit
[] Asexual
[] Questioning
[] Other (please specify):
What is your religious affiliation?
[] Christianity
[] Judaism
[] Islam
[] Sikhism
[] Buddhism
[] Hinduism
[] Pagan
[] Atheist
[] Other (please specify)
Do you know anyone who identifies as asexual? Yes or No.
What political affiliation do you identify with the most? Choose one: left party, center-left right,
center party, center-right party, right party

Appendix [B]

Attitudes Towards Asexuals (ATA) scale

1 = Strongly Disagree, 2 = Disagree, 3 = Moderately Disagree, 4 = Mildly Disagree, 5 = Neither Agree nor Disagree, 6 = Mildly Agree, 7 = Moderately Agree, 8 = Agree, & 9 = Strongly Agree.

- 1. Asexual women are not real women.
- 2. Asexual men are not real men.
- 3. Asexuality is probably just a phase.
- 4. A woman who claims she's 'asexual' just hasn't met the right man yet.
- 5. A man who claims he's asexual just hasn't met the right woman yet.
- 6. Asexual people are sexually repressed.
- 7. Asexuality simply represents an immature, childlike approach to life.
- 8. People who identify as 'asexual' probably just want to feel special or different.
- 9. Asexuality is a problem or defect.
- 10. There is nothing wrong with not having sexual attraction.
- 11. A lot of asexual people are probably homosexual and in the closet.
- 12. Asexuality is an inferior form of sexuality.
- 13. You can't truly be in love with someone without feeling sexually attracted to them.
- 14. Asexuality should not be condemned.
- 15. Asexuals who have intimate relationships are being unfair to their partners.
- 16. I would not be too upset if I found out my child were an asexual.

Items 10, 14, and 16 are reversed coded. Higher scores indicate greater anti-asexual bias.

Appendix [C]

Conservatism Scale

1 = Very Inaccurate, 2 = Moderately Inaccurate, 3 = Neither Inaccurate no Accurate, 4 = Moderately Accurate, & 5 = Very Accurate.

- 1. Tend to vote for conservative political candidates.
- 2. Believe in one true religion.
- 3. Believe laws should be strictly enforced.
- 4. Believe that we should be tough on crime.
- 5. Like to stand during the national anthem.
- 6. Tend to vote for liberal political candidates.
- 7. Don't consider myself religious.
- 8. Believe that criminals should receive help rather than punishment.
- 9. Believe in the importance of art.
- 10. Believe that there is no absolute right or wrong.

Items 6-10 are reversed coded.

Appendix [D]

Social-Norms Espousal Scale (SNES)

1 = Extremely Uncharacteristic, 2 Somewhat Uncharacteristic, 3 = Uncertain, 4 = Somewhat Characteristic, & 5 = Extremely Characteristic

- 1. I go out of my way to follow social norms.
- 2. We shouldn't always have to follow a set of social rules.
- 3. People should always be able to behave as they wish rather than trying to fit the norm.
- 4. There is a correct way to behave in every situation.
- 5. If more people followed society's rules, the world would be a better place.
- 6. People need to follow life's unwritten rules every bit as strictly as they follow the written rules.
- 7. There are lots of vital customs that people should follow as members of society.
- 8. The standards that society expects us to meet are far too restrictive.
- 9. People who do what society expects of them lead happier lives.
- 10. Our society is built on unwritten rules that members need to follow.
- 11. I am at ease only when everyone around me is adhering to society's norms.
- 12. We would be happier if we didn't try to follow society's norms.
- 13. My idea of a perfect world would be one with few social expectations.
- 14. I always do my best to follow society's rules.

Items 2, 3, 8, 12, and 13 are reversed coded. Higher scores indicate more likely to adhere to social norms.

Appendix [E]

Spirituality/Religiousness [Spi] (9 items; Alpha = .91)

1 = Very Inaccurate, 2 = Moderately Inaccurate, 3 = Neither Inaccurate no Accurate, 4 = Moderately Accurate, & 5 = Very Accurate.

- 1. Believe in a universal power or God.
- 2. Am a spiritual person.
- 3. Keep my faith even during hard times.
- 4. Have spent at least 30 minutes in the last 24 hours in prayer or meditation.
- 5. Am who I am because of my faith.
- 6. Believe that each person has a purpose in life.
- 7. Know that my beliefs make my life important.
- 8. Do not practice any religion.
- 9. Do not believe in the universal power of God.

Items 8 and 9 are reverse coded.

Appendix [F]

Traditional Egalitarian Sex Role (TESR) Scale

1 = Strongly Disagree, 2 = Disagree, 3 = Neither Agree nor Disagree, 4 = Agree, & 5 = Strongly Agree

- 1. It is just as important to educate daughters as it is to educate sons.
- 2. Women should be more concerned with clothing and appearance than men.
- 3. Women should have as much sexual freedom as men.
- 4. The man should be more responsible for the economic support of the family than the woman.
- 5. The belief that women cannot make it as good supervisors or executives as men is a myth.
- 6. The word 'obey' should be removed from wedding vows.
- 7. Ultimately a woman should submit to her husband's decision.
- 8. Some equality in marriage is good, but by and large the husband ought to have the main say-so in family matters.
- 9. Having a job is just as important for a wife as it is for her husband.
- 10. In groups that have both male and female members, it is more appropriate that leadership positions be held by males.
- 11. I would not allow my son to play with dolls.
- 12. Having a challenging job or career is as important as being a wife and mother.
- 13. Men make better leads.
- 14. Almost any woman is better off in her home than in a job or profession.
- 15. A woman's place is in the home.
- 16. The role of teaching in elementary schools belongs to women.
- 17. The changing of diapers is the responsibility of both parents.
- 18. Men who cry have weak character.
- 19. A man who has chosen to stay at home and be a house-husband is not less masculine.
- 20. As head of the household, the father should have the final authority over the children.

Items 2, 4, 7, 8, 10, 11, 13, 14, 15, 16, 18, and 20 are reversed