7-15-2024 1:00 PM

A Cross-Classified Multilevel Study Investigating Perceptions of Misogyny in Popular Music Presented in the Format of Lyrics

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A thesis submitted in partial fulfillment of the requirements for the Master of Science degree in Psychology

Abstract

Several sexist and misogynistic themes in music surround gendered power differences, gaslighting, and objectification (Hill et al., 2021), with a focus on sexual objectification, abuse, violence, distrust, and disdain for women (Adams & Fuller, 2006). Thus, the current study investigated university students and adults' perception of these messages. Using the 2022 *Billboard Hot 100* Year-End chart, participants read lyrics from 36 songs and rated the content on six themes of misogyny. Participants then completed a Benevolent and Hostile sexism inventory. Through a cross-classified multilevel modelling design, the results indicated that participants who liked the lyrics rated them with less misogyny. Additionally, women perceived more misogyny than did men, and Rap compared to Pop music had the most misogynistic lyrics. As this project is the first of its kind, it lays the groundwork for future research in this vein.

Keywords

misogyny, sexism, music, song lyrics, gender

Summary for a Lay Audience

Media in North America is filled with stereotypical portrayals of women. These range from television commercials that feature women using cleaning products; to magazine images of scantily clad women; to songs about women who are meant for men's pleasure. These portrayals are rooted in sexism as they only focus on the benefits women bring to society, rather than on their personhood.

Focusing on music, research has found that music in a wide range of genres (rap, pop, country, rock, R&B) incorporates many sexist and misogynistic (hateful) themes about women. In particular, researchers (Adams & Fuller, 2006) discovered six reoccurring themes of misogyny in rap music that included 1) insulting, offensive or demeaning statements about women, 2) statements about sexual violence against women, 3) statements suggesting that women make men's lives difficult and/or wreck men's lives, 4) statements suggesting that women use men for their own personal gain or enjoyment, 5) statements saying that women are inferior to or less human than men, and 6) statements suggesting that women are usable and discardable.

Thus, in the current study, our goal was to explore if these six themes transferred from rap music into the most widely listened to songs. We pulled 36 songs from the 2022 Year-End *Billboard Hot 100* chart and asked a sample of university students and audits to rate a subset of these songs on the six themes of misogyny. Participants were then asked to complete a sexism inventory so we could identify their sexist beliefs and attitudes.

We discovered that participants found the songs to be less misogynistic if they liked the lyrics. Additionally, women found more misogyny in the lyrics than did men, and rap music was the most misogynistic genre. The results also indicated that people

who scored high on Hostile sexism (hostile and aggressive attitudes towards women) were most likely to find misogyny in the lyrics. As this study was the first of its kind, it is premature to draw conclusions about these results. Thus, future research should replicate and expand on our work to determine if our results are generalizable to a larger population.

Contribution Statement

Dr. Paul Tremblay assisted at the different stages of this project, especially with the conceptualization, analyses, and interpretation of the cross-classified random factor designs.

Acknowledgements

I would like to express my deepest gratitude to my supervisor, Dr. Paul Tremblay, for his unwavering support and guidance over the past two years. I feel remarkably privileged to have been accepted into the SPDP program, and I am grateful that Dr. Tremblay took a chance on a bachelor's graduate from another university. His belief in me, along with his expertise, dedication, and patience, has been invaluable throughout this project. My academic and professional growth in research has been profoundly shaped by his mentorship, and for that, I am tremendously thankful.

I am also sincerely grateful to the members of my thesis committee, Dr. Rachel Calogero and Dr. Blair Evans. Their critical insights and feedback on my initial proposal were instrumental in shaping the development of this project.

Thank you to my defence examiners, Dr. Blair Evans, Dr. Lorne Campbell, and Dr. Kaitlynn Mendes, for their time and constructive feedback during the final stages of this thesis.

Special thanks to Malvika D'Costa and Mackenzie Smith for their assistance with the initial song ratings. Their help was fundamental in the early stages of this project, and I deeply appreciate their contribution.

Finally, I wish to express my heartfelt appreciation to my family, Nancy, Daniel, and Lily, for being a constant source of light and support throughout my university journey. To my mom, I am truly grateful for her unwavering encouragement, guidance, love, and for the delicious home-cooked meals that always made me feel cared for during stressful times. To my siblings, I am thankful for their genuine interest in my work, their

continued encouragement, and for the moments of silliness that brought joy and laughter amidst the demands of academia.

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Chapter 1

1 Introduction

It is no secret that North American media is filled with stereotypical portrayals of women; from women posing provocatively, to women performing traditional homemaking duties. These stereotypes are based in sexism as they judge women on their bodies or their contributions to society. To the extreme, this sexism becomes misogyny (a hatred towards women), and this misogyny is also pervasive in today's visual, print, and audio media.

Focusing solely on audio, previous research on misogyny in music has developed into two streams: 1) qualitative content analyses on song lyrics to determine the prevalence of misogyny and sexism within specific genres (e.g., Adams & Fuller, 2006; Weitzer & Kubrin, 2009; Flynn et al., 2016) and 2) researching participants' attitudes toward women after listening to music or watching music videos (e.g., Karsay et al., 2018). These studies primarily assigned participants to observe high/low conditions of misogyny in lyrics or videos and then asked participants to complete questionnaires assessing measures of sexism, aggression, dating violence, trust, and more (e.g., Kalof, 1999; Kistler & Lee, 2009).

Although previous research has tapped into misogynistic content within music, we are aware of no specific studies examining people's perceptions of the misogyny and sexism in lyric content of popular music, across genres such as Hip-Hop, Pop, and Country, considering the gender of the participant as well as the gender of the artists. Additionally, the research has not examined participants' analysis of the lyric sheets themselves, but rather focused on stimuli such as audio and music videos for their work.

Thus, with the current study, we aimed to shed light on how much participants vary in their ratings of misogyny and how they are influenced by individual differences and sexist attitudes toward women. These research questions helped us determine the extent of the

problem within popular songs of 2022, which is a first step in identifying how to address social policies for reducing any level of harm.

1.1 Defining Misogyny and Sexism

Misogyny and sexism are two terms that have become conflated over time: perhaps due to the ever-changing nature of language (Pinson Wrisley, 2023). However, there should be a clear distinction between the two as they convey two distinct thoughts (Manne, 2017). Misogyny can roughly be defined as “a hatred or hostility towards women”, which can manifest through negative emotions or affect towards women (Pinson Wrisley, 2023) because of patriarchal ideology (e.g., the belief that we live in a man’s world) (Manne, 2017). Sexism, on the other hand, is more closely related to discrimination (Pinson Wrisley, 2023), normalizing inequalities between men and women to justify patriarchal ideas (e.g., men are naturally superior to women) (Manne, 2017). This distinction is needed in order to observe the contexts in which misogyny and sexism are found, and to discern the ways in which these two constructs interact (Pinson Wrisley, 2023).

While misogyny remains as an overarching category of disdain for women, sexism has been broken down into hostile and benevolent categories (Glick & Fiske, 1996). The authors argued that sexism is a bidimensional construct that includes two very different attitudes towards women. Hostile sexism encompasses the hostile, aggressive, and punitive attitudes towards women. In contrast, Benevolent sexism involves attitudes that view women stereotypically (e.g., sweet, feminine, fragile, meek) and limit their roles (e.g., the idea that a woman is meant to be a mother and a homemaker). This benevolent attitude results in what may be seen as positive and prosocial behaviours, but the behaviours are propelled by feelings of dominance over women (e.g., helping a woman because of the belief she is unable to do a task herself).

Research indicates that Hostile and Benevolent sexism stem from differences in motivation (Sibley et al., 2007). For example, a person whose motivational goals are superiority and dominance tends to score high on social dominance (SDO: Pratto et al., 1994). In contrast, those on the opposite end of the spectrum are motivated by altruism and egalitarianism; thus, they score low on social dominance. Additionally, Right-Wing Authoritarianism (RWA; Altemeyer, 1981) is rooted in the goal of collective security and social cohesion, whereas opposite beliefs revolve around autonomy and independence. Work by Sibley and colleagues (2007) discovered positive relationships between 1) Hostile sexism (aggressive attitudes towards women) and Social Dominance (group superiority) orientation and 2) Benevolent sexism (traditional views of women) and Right-Wing Authoritarianism beliefs (traditional attitudes established by an authority). These results showed that Hostile and Benevolent sexism are indeed two separate constructs that are uniquely predicted by different motivators (Sibley et al., 2007), however, they are highly correlated (Glick & Fiske, 1996).

1.2 Objectification Theory

Branching from the belief that humans are inherently unequal (in a patriarchal society where there is a social hierarchy), comes the idea of objectification. This is when a person is stripped of their personhood and is treated as a body or collection of body parts for others' analysis, evaluation, and use (Fredrickson & Roberts, 1997). Research suggests that women are most affected by objectification and are sexualized as their bodies are put on display outside of their personal control (Calogero, 2012). As a result, women share similar psychological experiences and mental health risks that exclusively come from the objectification of their bodies (Fredrickson & Roberts, 1997).

In essence, sexual objectification is a form of oppression that has a wide range of associated consequences, from limiting women's status and minimizing their accomplishments (Fredrickson & Roberts, 1997), to sexual abuse and violence (Gervais & Eagan, 2017). Additionally, the pressure of sexual objectification encourages women to burden themselves with the perspectives of others and evaluate themselves as objects (Fredrickson & Roberts, 1997). This internalized objectification is damaging as women obsess over their physical appearances, resulting in cycles of eating disorders and sexual dysfunction. Psychologically, this type of objectification can spark chronic body monitoring, appearance anxiety, and shame about not meeting a societal standard and may ultimately lead to depression (Szymanski & Henning, 2007).

The sexual objectification of women is found virtually everywhere. Mainstream media is a major player in the perpetuation of sexualized messages and images as it highlights women wearing provocative clothing, focuses on women's body parts, centres on suggestive facial expressions indicating sexual readiness, and portrays women as decorations (APA, 2007). With a focus on youthfulness, young adult White women of postsecondary age are mainly considered to be the ideal models of sexiness and womanhood. Thus, these young women are found in television shows, television commercials, advertisements, magazines, video games, music videos, and lyrics. With such a societal focus on this very narrow view of beauty, it is no wonder these ideals come with consequences, including the perpetuation of sexism, sexual harassment, and sexual violence. For women who feel that they don't measure up to the standard, these artificial ideals can foster negative feelings of self-worth and lack of sexiness. In turn, women internalize objectification and become motivated to pursue potentially harmful bodily changes, such as diet restriction or binge eating, to conform to the standard (Dakanalis et al., 2015). To the extreme, sexual objectification (even with the most

subtle cue) can encourage more drastic bodily changes in the form of cosmetic surgery (Calogero et al., 2014).

1.3 The Prominence of Misogyny in Rap Music

To take a dive into sexual content itself, namely music lyrics, research has discovered an abundance of sexualization and misogynistic themes in Rap, Rock, Hip Hop, and Metal songs over decades worth of music. Sexualization occurs when "a person's value comes only from his or her sexual appeal or behavior, to the exclusion of other characteristics; a person is held to a standard that equates physical attractiveness (narrowly defined) with being sexy; a person is sexually objectified—that is, made into a thing for others' sexual use, rather than seen as a person with the capacity for independent action and decision making; and/or sexuality is inappropriately imposed upon a person" (APA, 2007). In contrast, misogyny within a lyrical context can be operationally defined as "the glamorization, promotion, humourization, support, normalization, and/or justification for oppressing women" (Adams & Fuller, 2006).

Most of the sexualization and misogynistic themes found in lyrics surround gendered power differences and the sexual objectification, abuse, violence, and distrust of women (e.g. Adams & Fuller, 2006; Weitzer & Kubrin, 2009). Specifically, Adams and Fuller (2006) identified six themes of misogyny within Rap music, consisting of offensive/derogatory statements about women (e.g., "This is a bitch who did the whole crew… and she'll let you video tape her," (N.W.A., 1991); sexual violence (e.g., "if you got a gang of niggaz, the bitch'll let you rape her," (N.W.A., 1991); claims that women wreck men's lives (e.g., "I punch a bitch in the head for playing with my patience," (Juvenile, 2003); claims that women use men for their own personal gain (e.g., "We fucked until we both got woozy… [she left] with a note sayin sorry I had to rob you baby," (The Lox, 1998); claims that women are

inferior to men (e.g., “I smelt breakfast in the kitchen but where waz the bitch,” (The Lox, 1998); and claims that women are usable/easily discardable (e.g., “You don’t know that we be pissing on hos, bitch,” (The Notorious B.I.G., 1996). Further, Adams and Fuller (2006) noted that women are portrayed as being a burden to men with stereotypical exaggerations of the way women act. For example, the authors explained the caricature of a “ho”, a girl without values, conscience, or self-esteem, willing to do anything for a man so she can gain wealth.

Similarly, in an analysis of platinum level Rap albums (N = 130) from 1992 to 2000, Weitzer and Kubrin (2009) identified five key themes of misogyny: derogatory naming and shaming (e.g. “I get paid real good to talk bad about a bitch,” (Too $hort, 1995) ; sexual objectification (e.g. “I’m only out to fuck a bitch, fuck tryin’ to charm her,” (Too $hort, 1995); distrust (e.g., “How could you trust a ho?’’ (Dr. Dre, 1992); legitimizing violence (e.g., “Slut, you think I won’t choke no whore,” (Eminem, 2000); and the celebrating of prostitution (e.g., “This ho, that ho make me rich… I’m back in the game, getting’ my dough,” (Snoop Dogg, 1999). It should be noted that the five themes were not equally represented in all music. Most songs in the sample featured instances of sexual objectification, followed by other songs featuring naming and shaming, and lastly, the theme of distrust in women. Thus, between the work of Adams and Fuller (2006) and Weitzer and Kubrin (2009), common themes of misogyny in music include sentiments that involve treating women as objects, sexually abusing them, and causing them physical and emotional pain.

Even in Rap music that focuses more on the rappers themselves rather than on the women they objectify, misogyny is still visibly present. In this type of music, rappers build up their own egos by claiming that their “thug” personas allow them to get with any woman

they want (Craig, 2015). The “thug” is portrayed as a masculine man as he sells drugs, uses drugs, commits acts of violence with weapons, and uses his macho body as a means of intimidation. Overall, the “thug” is presented in a positive light as a hero and as a good potential partner for any woman. Additionally, because of his ability to provide sexual ecstasy, he is able to seduce women in positions of power (e.g., police officers) at any time, even when the women are on duty. For example, Lil Wayne (2008) bragged, “I got stopped by a lady cop... She said I had the right to remain silent, now I got her hollering sounding like a siren”. The women in these songs are portrayed as sex-driven maniacs with a lack of professionalism, critical thinking, and decency, because sex with the rapper is more important than performing their occupational duties.

Another interesting angle to consider besides explicit content, is the amount of subtle sexist themes found in lyrics. A great deal of literature covers blatant misogyny in music, but songs written from a philogynist perspective also yield a great deal of misogyny. That is, songs sung by men who admire women still focus on the woman’s body and clothing rather than on her intelligence or personality (Tyree & Jones, 2015). For instance, in a review by Tyree and Jones (2015), rap songs released between 2000 and 2010 (N = 38) that met the authors’ criteria (at least one rapper, a story addressed to/about a woman, and an inclusion of emotions and terms associated with themes of love/like, adoration, admiration, and fondness) were reviewed. Key themes that emerged from the lyrics consisted of loving women because of the woman’s independence, strength, and desirability to other men; the need to be saved from abuse by other men; conflicts between the singer and their friends created by the relationship; and describing the women physically in the same manner as “ordinary” women, despite being “special”. Thus, even if the intent seems to be more pure than explicitly derogatory music, these songs still minimize the value of women.

1.4 Misogynistic Content on the Charts

While much of the published literature has focused on misogyny in Rap music, modern Rock and Metal also include problematic misogynistic and sexually violent themes. In five-year intervals, Hill and colleagues (2021) noted the U.K. Official Chart's top-charting Rock and Metal singles on the first of every month between 1995 and 2015 ($N = 60$). After analyzing their sample, the researchers discovered themes of a gendered power imbalance, gaslighting, and objectification of women in many song lyrics (Hill et al., 2021). Just like in the literature on Rap lyrics, men in Rock and Metal music are portrayed as being dominant over women and having the right to use and abuse women as they please. When drawing a comparison between these findings and the Rap studies mentioned earlier, it is safe to suggest that misogyny is a prominent fixture running through many different genres of music.

In a quantitative content analysis of the top 50 *Billboard* songs annually between 2006 and 2016 ($N = 409$), each line in every song was coded for lyrics condoning, encouraging, or glorifying the victimization, exploitation, or objectification of women (Frisby & Behm-Morawitz, 2019). The included genres of music were Rap/Hip Hop, Pop, R&B, Country, Alternative, Rock, and Latin. The authors defined violence as "the depiction of physical threat or actual force". Additionally, misogyny was defined as "the hatred of women and the reduction of women to objects". Results indicated that in general, male artists were more likely than female artists to have lyrics that contained profanity, misogyny, and violence (Frisby & Behm-Morawitz, 2019). Rap/Hip Hop music by male artists was most likely to use profanity (e.g., bitch, shit, ass) and it was the most misogynistic. However, Pop was found to be the most violent. Both Rap/Hip Hop and Pop significantly included more themes of degrading sex than all other genres. Thus together, popular songs conveying

misogyny and violence (Frisby & Behm-Morawitz, 2019) came from two of the most listened-to genres (IFPI, 2022).

Flynn and colleagues (2016) conducted a content analysis on the top 20 songs on each of *Billboard's* year-end charts from 2009 to 2013 in six different genres: Pop, R&B, Country, Rap, Adult Contemporary, and Rock (N = 600). The authors identified three common themes of objectification in the lyrics of their sample which included body objectification (focusing on the lead singer or others' body parts), the male/female gaze (staring at the lead singer/others), and attractiveness (own attractiveness or in comparison to others). These themes were most present in Rap, R&B, and Hip-Hop music, and women were objectified more than men, regardless of the artist's own gender (Flynn et al., 2016). Additionally, female singers were more likely to self-objectify than male artists.

Couto and colleagues (2022) examined the trends of including both sexual and violent sentiments in the lyrics of *Billboard Hot 100* songs of 2017. The researchers used a sample of 94 songs that charted sometime during the year and ranked between number one and 25. Then, each stanza from every song was numbered and content analyses were conducted. Violence was defined as "the discussion of psychological or physical valence"; sexual content meant "the discussion of sexual acts, experiences, and intercourse"; and degrading terms included "the use of offensive language towards a person" (e.g., bitch). The results indicated that lyrics containing sexual content also contained references to violence, such that stanzas that included violent lyrics were twice as likely to contain sexual content rather than no sexual content (Couto et al., 2022). Sexual content was also significantly correlated with degrading lyrics towards women but not men. In other words, stanzas that had sexual content were almost five times more likely to also contain degrading material. The authors concluded that sexual content was present in many more lyrics than violent and degrading statements

were, but the prominence of sexual and degrading lyrical content together pushes the narrative that women are to be degraded in sexual contexts. This is concerning to consider as listeners are regularly exposed to these demeaning messages.

A similar study that compared the lyrics of the top 50 songs (using *Billboard's* year-end charts) from each year across five decades also found that women were more objectified than men (Smiler et al., 2017). The authors recorded the presence/absence of sexual activity, sexual objectification, dating relationships, and the use of the word love in all the songs. Sexual objectification was defined as "the discussion of body parts and/or sex appeal". The results of the content analysis revealed that men were more likely to objectify women (most often in recent decades and in Rap music) while women were more likely to sing about love and dating. Additionally, the authors observed that themes of sexual objectification of women's bodies increased over time, perhaps driven by Rap music's surge in popularity in the 1990s. There were differences in objectification by gender as well, as the lyrics focused on women's body parts and men's bodies as a whole. It is worth noting that the number of male artists significantly outweighed females across the whole sample (2.5:1), so it appears that male belief systems became dominant in the music industry.

On a much larger scale, Boghrati and Berger (2023) dove into 258,937 songs across Hip-Hop, Pop, Country, Rap, R&B, Dance, Electronic, and Rock from each major *Billboard* chart (e.g., the Pop chart, the Hip Hop chart, etc.) between 1965 and 2018. The authors conducted a computational linguistics procedure to measure women's portrayal in music over time and the characteristics they were described with. When measuring aggression in the lyrics, the results indicated that men and women were equal recipients of explicit violence over time. Additionally, the bias against women has gone down, but bias is still present in current music. Synonyms of the words "competent" and "intelligent" were both heavily

biased towards men in the past, but they have since become less so and are now also somewhat associated with women. However, these changes levelled off in the 1990s. Within music genres over time, women and "competence" became more associated in Pop, Country, and Rock; associations remained consistent in Dance and R&B; and a negative association was detected in Rap. Words typically linked to male (e.g., leader) and female (e.g., trustworthy) stereotypes became slightly less gendered as the years went on. Further, the change in gender bias was not attributed to an increase in female artists over time, but a change in male artists' language. The authors noted that gendered lyrics and societal stereotypes were strongly correlated; suggesting that lyrics are a prominent indicator of public attitudes.

Conversely, Betti et al. (2023) found opposite results – perhaps due to relatively different time periods, sample size, and criteria for comparison. The authors analyzed 377,808 song lyrics and information pulled from the "Two Million Song Database" (the WASABI dataset) and referenced the song data with their *Billboard* chart performances. The sample consisted of English songs published between 1960 and 2009, and songs were coded by their sexist themes (stereotypes, sex comparisons, behavioural expectations, endorsements of inequality, rejection of feminism, and denial of inequalities). The results indicated that the songs that charted on *Billboard* were 10% more sexist than the songs on WASABI that didn't chart, indicating that popular music was more likely to contain sexist content than the average song. Male solo artists' songs more than doubled those of female artists, with an even more exaggerated imbalance for female groups (only 1.7% of the sample) and mixed groups (6.2% of the sample). Further, male artists and male groups together made up between 70-80% of the sample over the course of the period studied. The proportion of female solo artists' songs that contained sexism remained relatively steady at 20% over time,

however, the male solo artists' songs that charted suddenly increased their sexist content around the mid-1980s. By the end of the period studied, 60% of the male artists' songs contained sexism. Male solo artists also had consistently more sexist content than male groups, suggesting fundamental thematic differences in lyrical content. Between genres, Hip Hop was reported to have the most sexist content regardless of gender. Male Pop artists had more sexist content than female Pop artists, and R&B and Soul music showed a steady increase in sexism over time (mostly by male artists). Thus, the finding that the most sexism comes from male solo artists performing Hip Hop music remains consistent with the literature.

1.5 The Influence of Media on the Public

Besides conducting content analyses of lyrical messaging, researchers have also turned to the public to investigate how media (in the form of audio and music videos) affects them. As can be expected, participants in a study by Dixon and Linz (1997) differentially rated the offensiveness of music in low, medium, and high levels of explicitness, with the highest ratings of offensiveness coming from the highly explicit content. Further, after Rap music with highly sexually explicit messages was listened to, it was deemed more offensive than music in other genres with equal occurrences of highly sexually explicit content. These results provide empirical support for the assumption that varying amounts of derogatory content and severity of the messages are met with differing reactions. It also alludes to an inference that there may be unconscious biases against Rap music as this genre is perceived more negatively than other genres of music.

Music videos are an interesting avenue in which individual differences between men and women appear in acceptance of misogyny and sexual objectification. In work by Kistler and Lee (2009), male participants were found to be reactive to differential levels of sexual

explicitness, such that high levels of sexually explicit content in Hip Hop music videos were predictive of higher levels of sexual objectification, acceptance of rape myths, and traditional gender attitudes. These results were not significant for female participants. Similar work by Kalof (1999) also found that men were more accepting than women of adversarial sexual beliefs, gender-role stereotyping, and rape myths. Additionally, sexual imagery in music videos predicted higher adversarial sexual beliefs for both genders. Thus, results from both these studies may indicate that men already have negative pre-existing attitudes towards women; priming simply encourages the attitudes to surface. Although music videos were not the focus for this study, it is important to acknowledge how they contribute to the internalization of sexual objectification and traditional gender roles.

It seems that many factors contribute to differential influence on attitudes and reactions to messages. For example, Greenfield and colleagues (1987) discovered that the presentation of lyrics has much to do with the listener's ability to use their imagination. Specifically, after watching a music video, participants were less imaginative and unable to come up with a creative new verse for the song or an alternative video. Additionally, the music videos drew attention away from the messages presented in the lyrics by focusing on the visual aspects. In contrast, only listening to the lyrics seemed to stimulate imagination and promote creativity. Thus, the researchers concluded that the lyrics were more meaningful than the visual imagery.

With this evidence in mind, it is important to note how music is being consumed and the size of the influence music has on an individual. In a 2022 report by the International Federation of the Phonographic Industry (2022) that examined 22 of the world's largest music markets, researchers found that the most common way of consuming music was through subscription-based audio streaming services such as Apple Music and Spotify

Premium (24%). The secondary source was video streaming (e.g., YouTube) at 19%, followed by music on the radio at 17%. Purchased music like CDs, digital downloads, and vinyl covered 10% of music consumption, followed by ad-supported streaming (e.g., the basic Spotify membership) and short-form video applications like TikTok at 8%. Other forms of listening such as music from Netflix shows, recommendations by family and friends, and television (6%), social media platforms like Instagram and Facebook (5%), and live music (4%) rounded out the distribution. The researchers also discovered that consumers listened to 20.1 hours of music every week in 2022; up from 18.4 hours the previous year. Additionally, 69% of individuals surveyed said that music is very important to their mental health (70% were millennials and 72% identified as women). On average, most people listened to eight different music genres with Pop, Rock, and Rap/Hip Hop being the top three categories globally.

In sum, most previous work has either focused on musical lyric content analyses within specific genres of music, or the work has observed participants' attitudes toward women after listening to music or watching music videos. These studies primarily assigned participants to observe high/low conditions of misogyny in lyrics or videos and then asked participants to complete questionnaires assessing scales of sexism, aggression, dating violence, trust, and more. In essence, previous work focused on the priming effects of misogynistic content. To our knowledge, no literature has examined observable participant perceptions and internalization of lyric content. Additionally, research has not examined participants' analysis of the lyrics sheets themselves, but rather, focused on stimuli such as audio and music videos for their work. Thus, an investigation focusing on the music lyrics themselves is a good starting point to identify their potential role in perceptions of misogyny. The results could inform critical analyses in an educational context and determine what

personality traits can be linked to misogynistic beliefs. Music is a medium used for every imaginable emotion and situation and it can change moods (Matsumoto, 2002), affect one's perceptions of their environment (Yamasaki et al., 2015), and aid in memory recall (Nguyen & Grahn, 2017), so it holds much influence. Thus, we aimed to fill these gaps by asking the question: "To what extent is misogyny perceived in lyrics, how much variation is there between participants, and is this variation related to individual differences?".

1.6 The Present Study

The primary objective of the current study was to measure participants' perceptions of the presence and intensity of misogyny in popular song lyrics. By sampling across participants and songs, it was then possible to investigate the role of participant characteristics (i.e., gender and dispositional sexism) and song characteristics (i.e., music genre and artist gender) on these misogyny ratings.

Three main hypotheses were as follows: 1) Women would find the content to be more misogynistic than men. This is based on previous work by Kistler and Lee (2009) in which participants were shown Hip Hop music videos with highly sexual imagery, mild sexual imagery, or no sexual imagery and then were given questionnaires about their attitudes toward sexual permissiveness, rape myth acceptance, gender attitudes, and sexual objectification. Sexual imagery was defined as portrayals of scantily clad women dancing, posing, or staring seductively and/or shaking their buttocks or breasts. Male participants who watched the highly sexual videos objectified women more, were more accepting of stereotypical gender attitudes, and were more amenable to rape myths in contrast to men in the low sexual content condition. None of these results were statistically significant in women, thus indicating that perhaps men subscribe more to traditional gender role and sexist beliefs than women. The only significant finding that involved the female participants was

that women in the control group were more accepting of sexual objectification than women in the low sexual content condition. Perhaps women in the low sexual content condition were unappreciative of stereotypical female depictions and became more resistant to the objectification. While it is important to note that Kistler and Lee's study focused on visual imagery and the current study used only written lyrics, we believed that women would still be more sensitive to objectification of fellow women, than would men.

2a) High scores of Hostile sexism on the Ambivalent Sexism Inventory (Glick & Fiske, 1996) would be associated with low ratings of misogyny in the song lyrics. As discovered by Sibley and colleagues (2007), Hostile sexism is linked with a social dominance orientation; such that individuals who believe in a need for adherence to a social hierarchy and who value having dominance over other social groups are more likely to show aggression towards women who challenge those beliefs. Since misogyny can be defined as a hatred towards women (Pinson Wrisley, 2023), individuals who buy into the narrative that men should dominate women, would likely not see anything wrong with lyrics that echo these beliefs. Put another way, misogynistic individuals would not see a problem with misogyny from the lyrics as the individuals would agree with the messages. 2b) High scores of Benevolent sexism (ASI; Glick & Fiske, 1996) would likely be associated with high ratings of misogyny in the lyrics. Benevolent sexism stems from the view that women should be protected by men because women are inherently fragile (Glick & Fiske, 1996). Thus, individuals with this belief system should be appalled by misogynistic messages endorsing harm (sexual violence, abuse, etc.) towards women as long as the women in the songs adhere to traditional gender roles (Sibley et al., 2007). If the songs convey messages that women are independent or taking on men's roles, scores of misogyny should be lower.

3) The gender difference hypothesized above would be moderated by the gender of the singers. We expected female participants to rate the lyrics from male artists as more offensive than lyrics from female artists. This has not been previously studied, to our knowledge.

Chapter 2

2 Methods

2.1 Participants

Participants were recruited through two online platforms. The first survey was advertised on SONA, Western University's student research participation pool. For their data to be included in the final analyses, we required that students be age 17 or older (typically the minimum age in the first year of university) with an ability to understand English fluently (to understand the nuances of music lyrics). Participants were automatically compensated with 0.5 credits upon submission of their surveys.

Our second sample was recruited through Prolific, a platform that enables the collection of high-quality data from participants around the world. We required this sample to be aged 18 or older; residing in Canada, the United States of America, the United Kingdom, or Australia; and fluent in English. We adjusted our compensation rate based on the SONA sample's average time of completion (M = 35 min). Accordingly, Prolific participants were awarded with £5.25 (approximately $6.52 USD) upon submission of their surveys.

The exclusion criteria involved two checkpoints: passing two attention checks and completing the survey in a reasonable amount of time. Participants were coded as answering 0, 1, or 2 attention checks, and then were evaluated on their time spent completing the survey in its entirety. We could not use a mathematical approach to sift through participants based on study duration as the variance was too broad. Thus, participants who took less than 450 seconds (7.5 minutes) were immediately excluded from analysis. Then, participants who took between 450-600 seconds (7.5-10 minutes) were excluded unless they passed both attention

checks. Finally, participants who failed both attention checks were excluded regardless of time. All Prolific participants met our criteria, but 14 SONA students were excluded.

With the exclusion of the 14 SONA participants, the sample size became $N = 303$. The age of participants ranged between 17-25 ($M = 18.39$, $SD = 0.99$), with the majority identifying as women (77%), heterosexual (81%), and middle class (44%). Our sample was mostly Asian (37%) or North American (22%) and fluent in English (97%). Participants were able to select multiple programs of study and the most common were Psychology (40%) and Business (22%). Participants reported that they listen to 1-100 hours of music each week ($M = 21.25$, $SD = 18.23$) and pay attention to the lyrics sometimes (41%) or often (40%). Participants were able to select multiple favourite genres of music and the most popular were Pop (86%), Hip Hop (69%), and Indie (43%).

As mentioned above, no participants were excluded from the Prolific sample, resulting in $N = 202$. The age of participants ranged between 18-86 ($M = 35.58$, $SD = 12.91$), with the majority identifying as women (54%), heterosexual (78%), and middle class (33%) or working class (31%). Our sample was mostly European (50%) and fluent in English (98%). Most of the participants were from the United Kingdom (52%). Participants reported listening to 0-100 hours of music each week ($M = 16.03$, $SD = 16.98$) and paying attention to the lyrics often (46%) or sometimes (39%). Participants were able to select multiple favourite genres of music and the most popular were Pop (81%), Rock (63%), and Hip Hop (52%).

See the full table of demographics for the two samples in Table 2.1 and a frequency distribution of age by sample in Figure 2.1.

Table 2.1

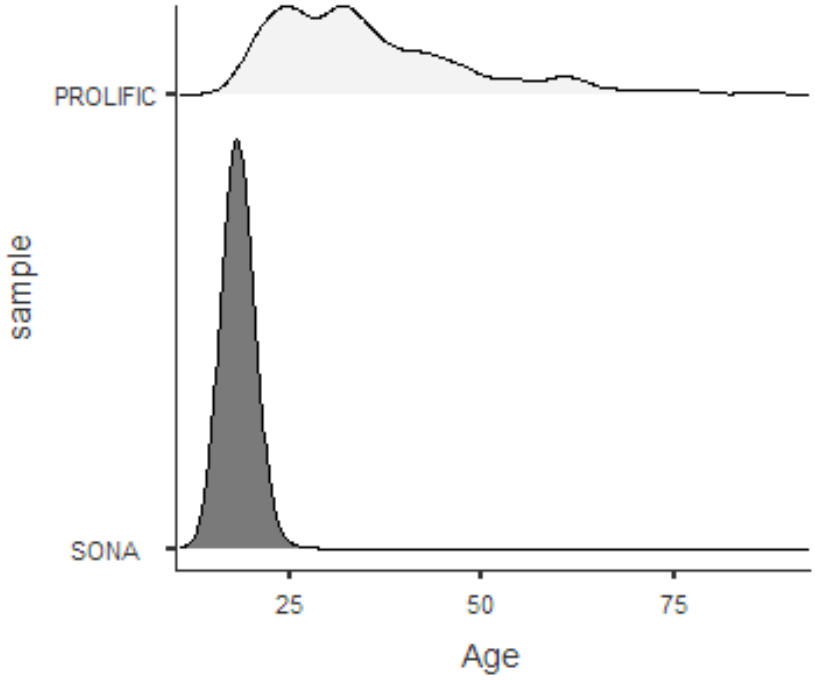
Participant Demographics by Sample

Demographics	SONA %	Prolific %
Gender Identity		
Man (cisgender)	22	42
Woman (cisgender)	77	54
Other	1	5
Sexual Orientation		
Asexual	3	4
Bisexual	7	7
Straight	81	78
Prefer not to say	3	2
Country		
Australia	-	14
Canada	-	17
United Kingdom	-	52
United States	-	16
Prefer not to say	-	0
Ethnicity		
African	3	3
Arab	1	0
Asian	37	19
Caribbean	0	0
Central/South American	1	1
European	17	50
Jewish	1	0
Indigenous	0	0
Middle Eastern	4	0
North American	22	8
Oceanian	0	4
Other	3	11
South Asian	6	0
Prefer not to say	3	2
Self-identify*	1	0
Socioeconomic Status		
Lower class	1	6
Working class	4	31
Lower middle class	6	19
Middle class	44	33
Upper middle class	38	11
Upper class	2	0
Prefer not to say	4	2

* No text added

Figure 2.1

Age Distribution by Sample



2.2 Selected Song Lyrics

To obtain a preliminary idea of the amount and variation in the misogyny of potential songs, we recruited three graduate students and a psychology professor at Western University to perform a content analysis on the 2022 Year-End *Billboard Hot 100* songs. The lyrics were sourced from genius.com and the entire lyrics sheets were used in our initial analysis. The team rated the severity of 91 songs on the lyrics' misogyny (as defined by Adams & Fuller, 2006), using the criteria 0 = *none*, 1 = *mild*, 2 = *moderate*, and 3 = *severe*. These initial ratings were averaged for each song, and 36 songs that scored between 0.5-3 were selected for the study (see Appendix A). Nine songs from the *Hot 100* chart were excluded from analysis as they were not written in English.

We chose to use the 2022 Year-End *Billboard Hot 100* chart as it was the most current chart at the beginning of our project that encompassed the most popular music from all genres. Additionally, *Billboard* has been a prominent fixture in the entertainment industry since 1894, targeting the "professional user of music" since the early 1960s (Lampel et al., 2006). *Billboard's* most influential contribution to the industry has been its specialization in music with the creation of the *Billboard* charts, carefully researched rankings that entertainment professionals have come to rely on to examine past successes, find current trending music, and anticipate future hits.

The *Hot 100* chart itself relies on a triad of streaming services, radio stations, and sales-based data to compile a comprehensive ranking of hit songs (Billboard, n.d.). *Billboard* pulls its streaming data by acquiring top streamed radio and on-demand music statistics from the industry's most popular music services. The radio station data is built from a service that tracks airplay from over 140 markets in the United States. Lastly, a list of top sales comes from about 90% of U.S. retailers, including music stores, internet sales, direct-to-customer sales, and music department sales. Thus, with *Billboard's* longevity and extensive data collection practices, we felt it has more than enough credibility to validate our study.

As an additional consideration, the Government of Canada's Copyright Act (1985) was consulted to determine if there was any potential for copyright infringement. According to "Part III: Infringement of Copyright and Moral Rights and Exceptions to Infringement Exceptions", under "Fair Dealing", the act states that "fair dealing for the purpose of research… does not infringe copyright". Thus, using copyrighted work was not an issue.

2.3 Measures

2.3.1 Demographic Questionnaire

Participants started the study by completing a demographic questionnaire which asked for their age, gender identity, sexual orientation, English language proficiency, socioeconomic status, and ethnicity. If participants were recruited through SONA, they were asked about their program(s) of study. Conversely, if participants were recruited through Prolific, they were asked about their country of residence. Lastly, participants checked off the genres of music they regularly listen to, how many hours a week they listen to music, and if they typically focus on the lyrics in songs. The full survey can be found in Appendix B.

2.3.2 Perceptions of Misogyny in Lyrics Questionnaire

For the purposes of this study, we adopted the definition of misogyny as "the glamorization, promotion, humorization, support, normalization, and/or justification for oppressing women" (Adams & Fuller, 2006). We developed questions to be answered on rating scales to assess perceptions of misogyny based on Adams and Fuller's (2006) six themes of misogyny. These themes included: 1) "sex-related derogatory statements about women", 2) "sexual violence against women", 3) "women causing trouble for men", 4) "characterization of women as 'users' of men", 5) "women being beneath [inferior to] men", and 6) "women as usable and discardable". The six themes were translated into items for our study as follows: 1) "*This song includes insulting, offensive or demeaning statements about women"*, 2) *"This song includes statements about sexual violence against women"*, 3) *"This song includes statements suggesting that women make men's lives difficult and/or wreck men's lives"*, 4) *"This song suggests that women use men for their own personal gain or enjoyment"*, 5) *"This song includes statements saying that women are inferior to or less human than men"*, and 6) *"This song suggests that women are usable and discardable"*.

Participants were asked to rate their perceptions of these themes on a 4-point Likert scale (0 = *not at all*, 1 = *some minor evidence*, 2 = *fairly clear evidence*, and 3 = *absolutely*

clear evidence). Three additional items were included as covariates for each lyric rating. Participants answered the question "*How much do you like the lyrics in this song?"* (-2 = *I strongly dislike them,* -1 = *I moderately dislike them,* 0 = *I don't dislike or like them,* 1 = I moderately like them, and 2 = *I strongly like them*) and two others that required either a yes/no response ("*Is this a song that you are familiar with?"* and *"Are you familiar with the artist of this song?"*). Participants completed this questionnaire for a random sample of 12 out of 36 songs. After the final song, participants were asked how much of the lyrics they understood (*all, most, some,* or *none*). The full questionnaire can be found in Appendix C.

2.3.3 The Ambivalent Sexism Inventory

The last questionnaire was the Ambivalent Sexism Inventory (ASI; Glick & Fiske, 1996) to detect participants' Benevolent and/or Hostile sexism attitudes. The creators of the inventory defined Benevolent sexism as a set of attitudes that view women stereotypically and in restricted roles but are subjectively positive in tone (Glick & Fiske, 1996). These attitudes typically lead to behaviours that are classically categorized as prosocial (e.g., helping) or intimacy seeking (e.g., self-disclosure) but originate from beliefs of male dominance. Likewise, Hostile sexism is what its name suggests, hostility and disgust towards women.

The inventory was created to observe attitudes about men and women in modern society. Statements included sentences such as *"women should be cherished and protected by men"* and *"women are too easily offended"*. Participants were asked to indicate their level of agreement with 22 statements on a 6-point Likert scale (0 = *disagree strongly* to 5 = *agree strongly*).

For the current study, the name of the inventory was disguised as the "Relationships Between Men and Women Questionnaire" to avoid social desirability bias. Two attention checks were interjected within this survey for exclusion criteria purposes.

2.4 Procedure

The main study was approved by Western University's Non-Medical Research Ethics Board (NMREB). We administered the study's entirely on Qualtrics and created two versions of the survey that were posted on SONA and Prolific respectively. These surveys were identical except for one demographic question. SONA students were asked about their program(s) of study and Prolific participants were asked about their country of residence.

Participants read a letter of information and checked an informed consent box before beginning. Participants completed a brief demographic questionnaire and then were randomly assigned 12 of 36 songs. This random assignment ensures that any repeated measures are distributed across participants and would not bias the mean estimates. Although beyond the scope of this thesis, further analyses in the future will test the impact of repeated administration as we have the individual order of presentation codes for each participant. We showed participants the same lyric sheets sourced from genius.com that were used in the preliminary song screening. The lyrics were presented with the name and presenting gender of the artist(s) in text (e.g., Drake, man) to anticipate potential interactions between participant gender and artist gender.

Participants completed six questions assessing their perceptions of misogyny found in the lyrics of each of the 12 randomly selected songs. Participants were then asked about their familiarity with the songs and artists and rated their liking of the lyrics. Last, participants filled out the Ambivalent Sexism Inventory (Glick & Fiske, 1996). Upon submission, they were debriefed and compensated.

2.5 Data Analytic Approach

In addition to inspecting our data for inattention as described in the participant section, we investigated descriptive statistics focusing on frequency distributions and any non-normality in the outcome variables, as well as missing data. In terms of non-normality, levels of skewness and kurtosis across all observations on the outcome variables were lower than +/- 1.75. However, taking a conservative approach to those estimates, we also ran the multilevel modeling (MLM) analyses two different ways: 1) traditional analyses with the outcome variables specified as continuous and 2) having the models with the outcome variables specified as categorical-ordinal.

With respect to missing data, it is important to note that we used a design with planned systematic missing data. Specifically, participants were randomly assigned to 12 of the 36 songs. We selected a proportion 12/36 or 1/3 that would not compromise power or precision, according to relevant simulation papers on this topic (Wickham & Giordano, 2022).

Multilevel modeling works with available data using full information maximum likelihood and our design satisfied the assumption of MCAR (Missing completely at random) for our song ratings. The number of missing responses due to participants not completing their 12 songs was minimal. In terms of missing data on the predictors, there were a few participants who did not indicate their gender. In MLM, cases are omitted if they have missing participant or song predictor data. Given the large number of participants who did not identify their ethnic identity, we did not include this variable as a predictor in our models. We reported the exact number of participants and observations in the individual analyses.

We used a specific type of design within the MLM literature referred to as a cross-classified model with two random factors consisting of participants and songs. Common

traditional analytic procedures such as ANOVA or multiple regression also treat participants as a random factor, and we often do not pay attention to it recognizing that it explains a substantial proportion of variance in the outcome. In the proposed model, we could isolate the proportion of variance due to participants and songs from the third source (within residual) and calculated an intra-class correlation (ICC; proportion of variance in the outcome variable accounted for by a random factor) for each of these (e.g., Carson & Beeson, 2013; Locker et al., 2007). Following the first step known as the intercept only model, we then focused on investigating the influence of individual differences such as gender of the participant and individual differences in misogyny. Additionally, for the songs, we investigated the role of the artists' genders and genres of music. This model also provided a way to investigate the interaction between the gender of participants and the gender of artists.

The sample size calculations for this type of study were a bit complex and typically require simulations and different considerations for the diverse effects in the multilevel models. Considering that interactions often have small effects in applied psychology (e.g., Aguinis et al., 2005), we ensured that power was sufficient by collecting many ratings from the ideal combination of sample size and number of stimuli (songs). A sample size of 505 with 36 repeated observations surpassed the required size for the tests of significance of interactions (Arend & Schäfer, 2019; Muthén & Muthén, 2002). We recognize that we have more power to detect predictors of participants than predictors of songs, given the much smaller sample of songs treated as a random factor. The alternative would have been to treat the songs as a fixed factor, but then we would have traded a way to be able to generalize to the population of *Hot 100* songs for an increase in power.

We used both jamovi version 2.5.3.0 and SPSS 28-29 for data inspection, creation of composite scores (SPSS), and to prepare the data files from wide to long format (SPSS) for the MLM analyses. These MLM analyses were performed in the jamovi module GAMLj3 (Version 3.3.1; Gallucci, n.d.) and replicated in Mplus 8.11 (1998-2017). Although the GAMLj3 module in jamovi has functionality to run analyses with ordinal outcomes, the Mplus software was more familiar to us, especially for evaluating whether a model converged properly. Thus, we reported the analyses for ordinal outcomes from Mplus.

Chapter 3

3 Results

The Results chapter consists of two sections. The first focuses on preliminary descriptive statistics and bivariate associations while the second part details the multilevel modeling analyses.

3.1 Descriptive Statistics and Bivariate Associations

3.1.1 Participants' Perceptions of Misogyny in Lyrics

The following analyses report on participant responses to the six items (Offensiveness of lyrics, Sexual violence against women, Women wreck men's lives, Women use men, Women are inferior, Women are useable) and the composite of the six items. It should be noted that these statistics include a blend of between person and song and within person by song sources of variances that have not been disaggregated. As such, the purpose was to focus on the point estimates (descriptive statistics) without making inferences about standard errors or tests of significance, which was done in the MLM section.

Regarding the variables' distributions, the skewness level was highest for Sexual violence at 1.56, suggesting that most ratings of Sexual violence were low (M = 0.50, SD = 0.80). The kurtosis was also found to be high for Sexual violence at 1.61. All other variables were normally distributed. As mentioned in the method section, we ran MLM analyses comparing the continuous outcome approach to an ordinal approach, especially for the Sexual violence outcome.

The correlation matrix in Table 3.1.1 is based on n = 6010 to 6043 observations across the six individual items from 505 participants. Without missing data, the total observations would have been 505 x 12 = 6060. Therefore, the proportion of missing data on the outcome data was less than 1% (ranging from 0.28% to 0.82% depending on the item).

The correlation matrix shows a range of correlations from $r = .25$ to $r = .69$, all at $p < .001$ (recognizing that the standard errors did not account for the clustering effect due to repeated observations in these analyses). This finding suggests that the six items did not contribute equally to an underlying latent variable of misogyny. Also, it seemed just as conceptually reasonable to treat the six items as a composite, rather than as a latent variable that "caused" the presence of each of these examples of misogyny. Even if we tried to conceptualize an underlying latent "misogyny overall attitude or related individual difference variable", we could certainly imagine that song lyrics (across songs) differ in their major themes and do not contain all the elements captured by the six items. Instead, we see the composite as a formative aggregate variable which captured the extent to which few or many of these aspects of misogyny were included in the lyrics of a particular song. From this perspective, there was no expectation for high or equal correlations among these items and internal consistency across the six items was not relevant.

Table 3.1.1

Correlation Matrix of the Six Misogyny Variables

	Offensive	Sexual Violence	Wreck Men	Use Men	Inferior	Useable
Offensive	-	-	-	-	-	-
Sexual Violence	.59***	-	-	-	-	-
Wreck Men	.37***	.27***	-	-	-	-
Use Men	.39***	.25***	.52***	-	-	-
Inferior	.62***	.56***	.35***	.29***	-	-
Usable	.64***	.53***	.31***	.33***	.69***	-

*** indicates $p < .001$

The analyses below provide the descriptive statistics for these items by gender and by sample. Note that for gender there are 339 women, 151 men, and 13 individuals with

another gender that we included into one “other gender” category so that we would have a large enough number to calculate statistics in this third group.

Table 3.1.2

Descriptives of Misogyny Variables by Gender

	Gender	Offensive	Violence	Wreck Men	Use Men	Inferior	Usable	Composite
n	Men	1802	1810	1808	1806	1806	1798	1809
	Women	4062	4063	4059	4050	4054	4051	4061
	Other	155	156	155	155	156	154	155
M	Men	0.91	0.48	0.77	0.88	0.52	0.83	0.73
	Women	1.05	0.51	0.84	1.00	0.67	0.97	0.84
	Other	0.92	0.42	0.72	0.84	0.52	0.71	0.68
SD	Men	0.91	0.78	0.95	0.99	0.79	0.94	0.65
	Women	0.99	0.81	0.98	1.06	0.87	1.01	0.70
	Other	0.99	0.85	0.98	1.04	0.88	0.92	0.78

Note. The six misogyny variables were measured on a four-point Likert scale (*0 = no clear evidence*, *1 = some minor evidence*, *2 = fairly clear evidence*, and *3 = absolutely clear evidence*). The *n* values refer to the total number of observations.

Table 3.1.3

Descriptives of Misogyny Variables by Sample

	Sample	Offensive	Violence	Wreck Men	Use Men	Inferior	Usable	Composite
n	SONA	3624	3632	3630	3627	3628	3625	3632
	Prolific	2419	2431	2416	2407	2412	2401	2416
M	SONA	1.06	0.55	0.89	1.04	0.70	1.00	0.87
	Prolific	0.92	0.43	0.69	0.84	0.50	0.81	0.69
SD	SONA	0.98	0.82	0.99	1.06	0.87	1.00	0.69
	Prolific	0.96	0.76	0.93	1.00	0.80	0.96	0.67

Note. The six misogyny variables were measured on a four-point Likert scale (*0 = no clear evidence*, *1 = some minor evidence*, *2 = fairly clear evidence*, and *3 = absolutely clear evidence*). The *n* values refer to the total number of observations.

3.1.2 Mean Composite Misogyny Scores on Individual Songs

In selecting the sample of songs for this research, we wanted to include a heterogeneous selection in terms of the gender of the Artist(s) who performed the song as well as the genre of music. Of the 36 *Billboard* songs, 19 were recorded by male artists, 12 by women, and 5 by a mixed gender group. Six of these artists had multiple songs that were included in our sample. The most common genre was Rap/Hip Hop (see Table 3.1.4), as categorized by Apple Music.

Table 3.1.4

Songs and Artists by Genre

Genre	Song Count	Female Artist(s)	Male Artist(s)	Mixed Gender
Afrobeats	2	0	1	1
Country	3	0	3	0
Pop	12	8	2	2
Rap/Hip Hop	15	2	11	2
R&B	4	2	2	0
Total	36	12	19	5

Table 3.1.5 presents the Title, Artist, and Genre of each song, along with descriptive statistics for the composite misogyny score described in the previous section. In terms of sample size, given that 505 participants rated a random sample of 12 of the 36 songs, the mean number of responses per song was 168. The highest misogyny ratings occurred for the songs “One Right Now” (M = 1.59, SD = 0.76), “Puffin On Zootiez” (M = 1.37, SD = 0.62), and “Smokin Out The Window” (M = 1.36, SD = 0.56). In contrast, the lowest ratings were for the songs “Shivers” (M = 0.12, SD = 0.24), “Stay” (M = 0.19, SD = 0.37), and “Boyfriend” (M = 0.28, SD = 0.41).

Table 3.1.5

Descriptives of Misogyny Composite Scores by Song

			SONA		Prolific	
Song Title	Artist(s)	Genre	*M*	*SD*	*M*	*SD*
One Right Now	Post Malone & The Weeknd (M)	Rap / Hip Hop	1.59	0.76	1.52	0.72
Puffin On Zootiez	Future (M)	Rap / Hip Hop	1.37	0.62	1.11	0.71
Pushin P	Gunna & Future ft. Young Thug (M)	Rap / Hip Hop	1.34	0.64	1.13	0.74
What Happened To Virgil	Lil Durk ft. Gunna (M)	Rap / Hip Hop	1.26	0.69	1.04	0.77
Broadway Girls	Lil Durk ft. Morgan Wallen (M)	Rap / Hip Hop	1.20	0.61	1.01	0.64
Jimmy Cooks	Drake ft. 21 Savage (M)	Rap / Hip Hop	1.14	0.71	1.07	0.79
To The Moon!	JNR CHOI & Sam Tompkins (M)	Rap / Hip Hop	1.12	0.67	0.96	0.70
Knife Talk	Drake ft. 21 Savage & Project Pat (M)	Rap / Hip Hop	1.07	0.76	0.67	0.64
Super Freaky Girl	Nicki Minaj (W)	Rap / Hip Hop	1.03	0.68	1.11	0.75
Big Energy	Latto (W)	Rap / Hip Hop	0.97	0.60	1.03	0.68
Super Gremlin	Kodak Black (M)	Rap / Hip Hop	0.95	0.80	0.46	0.54
Wait For U	Future ft. Drake & Tems (Am)	Rap / Hip Hop	0.92	0.62	0.68	0.57
Industry Baby	Lil Nas X & Jack Harlow (M)	Rap / Hip Hop	0.84	0.66	0.86	0.64
I Like You (A Happier Song)	Post Malone ft. Doja Cat (Am)	Rap / Hip Hop	0.71	0.62	0.73	0.63
First Class	Jack Harlow (M)	Rap / Hip Hop	0.63	0.56	0.51	0.57

			SONA		Prolific	
Song Title	Artist(s)	Genre	*M*	*SD*	*M*	*SD*
Smokin Out The Window	Silk Sonic (M)	R&B	1.36	0.56	1.35	0.53
I Hate U	SZA (W)	R&B	0.76	0.58	0.78	0.64
Bad Habit	Steve Lacy (M)	R&B	0.73	0.58	0.57	0.57
Kiss Me More	Doja Cat ft. SZA (W)	R&B	0.65	0.55	0.52	0.53
Unholy	Sam Smith & Kim Petras (Am)	Pop	1.03	0.63	0.64	0.66
Need To Know	Doja Cat (W)	Pop	1.00	0.59	0.80	0.64
You Right	Doja Cat & The Weeknd (Am)	Pop	1.00	0.53	0.64	0.49
Sweetest Pie	Megan Thee Stallion & Dua Lipa (W)	Pop	0.86	0.63	0.71	0.57
Get Into It (Yuh)	Doja Cat (W)	Pop	0.83	0.70	0.78	0.62
Vegas	Doja Cat (W)	Pop	0.78	0.66	0.50	0.47
Woman	Doja Cat (W)	Pop	0.69	0.67	0.39	0.41
abcdefu	GAYLE (W)	Pop	0.67	0.54	0.60	0.59
She's All I Wanna Be	Tate McRae (W)	Pop	0.56	0.48	0.42	0.46
Stay	The Kid LAROI & Justin Bieber (M)	Pop	0.45	0.53	0.19	0.37
Boyfriend	Dove Cameron (W)	Pop	0.34	0.46	0.28	0.41
Shivers	Ed Sheeran (M)	Pop	0.31	0.43	0.12	0.24
Fancy Like	Walker Hayes (M)	Country	0.81	0.81	0.31	0.45
Wasted On You	Morgan Wallen (M)	Country	0.77	0.54	0.59	0.56
AA	Walker Hayes (M)	Country	0.73	0.67	0.33	0.41
Essence	Wizkid ft. Justin Bieber & Tems (Am)	Afrobeats	0.55	0.56	0.30	0.43
Love Nwantiti (Ah Ah Ah)	Ckay (M)	Afrobeats	0.37	0.44	0.29	0.38
Total			0.87	0.42	0.70	0.40

Note. The "misogyny composite scores" refer to a mean of the six misogyny variable ratings in each song. The variables were measured on a four-point Likert scale (*0 = no clear evidence*, *1 = some minor evidence*, *2 = fairly clear evidence*, and *3 = absolutely clear evidence*). The artists' genders are included after their names (*M = man, W = woman, Am = group of men and women*).

In terms of sample differences in the composite misogyny ratings, an independent samples t-test revealed that the overall mean across songs differed significantly between samples, $t(503)$ 4.54, $p < .001$, $d = 0.41$, with slightly higher ratings for SONA ($M = 0.87$, $SD = 0.42$) than Prolific ($M = 0.70$, $SD = 0.40$).

Table 3.1.6

Descriptives of Misogyny Composite Scores by Gender

	SONA			Prolific		
Gender	*n*	*M*	*SD*	*n*	*M*	*SD*
Men	68	0.85	0.42	82	0.63	0.38
Women	231	0.87	0.42	107	0.76	0.41
Other	3	1.27	0.78	10	0.51	0.24

3.1.3 Ambivalent Sexism Descriptive Statistics

The internal consistency reliability values (McDonal's omega ω) for the Hostile sexism scale were .91 in the SONA sample and .94 in the Prolific sample. The values for the Benevolent sexism scale were .77 for SONA and .84 for Prolific. A lower omega was anticipated for Benevolent sexism due to the variation in its three subscales (Protective Paternalism $\omega = .539$ and .690, Complementary Gender Differences $\omega = .713$ and .772, and Heterosexual Intimacy $\omega = .670$ and .763 in SONA and Prolific samples respectively; Glick & Fiske, 1996). A medium positive relationship was found between Benevolent and Hostile sexism for both SONA ($r = .33$, $p < .001$) and Prolific ($r = .46$, $p < .001$), indicating that they are separate but related constructs.

In terms of sample differences between the two sexism scales, mean differences are shown in Table 3.1.7. The SONA participants had significantly higher scores than the Prolific participants in Benevolent sexism, $t(500)$ 3.08, $p = .002$, $d = 0.38$). No significant differences between the samples were found in Hostile sexism, $t(501)$ 1.02, $p = .309$.

Table 3.1.7

Ambivalent Sexism Inventory Scores by Sample

	SONA			Prolific		
	n	*M*	*SD*	*n*	*M*	*SD*
Benevolent Sexism	302	2.26	0.80	200	2.02	0.93
Hostile Sexism	302	1.62	1.02	201	1.72	1.16

We ran independent samples t-tests to see if there were differences between sexism found in men and women within each sample. There was no significant difference in Benevolent sexism scores for the SONA participants, $t(297)$ 1.27, $p = .205$. However, SONA men scored higher in Hostile sexism than did women, $t(297)$ 5.76, $p < .001$, $d = .67$. Additionally, Prolific men were higher in both Benevolent, $t(187)$ 2.58, $p = .012$, $d = .38$ and Hostile, $t(187)$ 5.45, $p < .0001$, $d = .80$, sexism than the female participants.

Table 3.1.8

Ambivalent Sexism Inventory Scores by Gender

	SONA Benevolent			Prolific Benevolent		
Gender	*n*	*M*	*SD*	*n*	*M*	*SD*
Men	68	2.36	0.83	83	2.22	0.92
Women	231	2.22	0.79	106	1.88	0.88
Other	3	2.64	0.36	10	1.88	1.20
	Hostile			Hostile		
Gender	*n*	*M*	*SD*	*n*	*M*	*SD*
Men	68	2.20	1.07	83	2.22	1.12
Women	231	1.44	0.92	106	1.36	1.04
Other	3	2.45	1.97	10	1.71	1.42

3.2 Cross-Classified Multilevel Modelling

As described in the 2.5 Data Analytic Approach section, multilevel modeling (MLM) was used to analyze cross-classified designs with two random factors (Participants and Songs). In the following sections, MLM models are presented for each of the six misogyny outcome response variables, followed by a similar model with a composite of the six misogyny responses as the outcome variable. Each of these models were run in hierarchical steps starting with an Intercept only model, a model with all predictors but no interaction, and a third model with a gender of Participant by gender of Artist interaction. These models were all run with the Restricted Maximum Likelihood (REML) estimator to get the best estimate of the random effect variance estimates. Also as indicated in Section 2.5, due to moderate departure from normality for some of the outcome variables, we ran the models specifying the outcome variable as ordinal instead of continuous. Given the similarities in the results of the two approaches, only the final model with the interaction was presented for the ordinal outcome version, along with the estimated zero-order correlations treating the variables as ordinal.

The SONA and Prolific samples were combined into one, but we included Sample as a binary predictor in the analyses. Categorical predictors were dummy coded and left uncentered, while continuous predictors were grand mean centered.

Each of the six individual outcome variables were in response to the instructions: "Indicate the extent to which you perceive the lyrics to have clear evidence of misogyny (a disgust or hatred for women) in the six following questions." Participants used the following scale: 0 = *not at all*, 1 = *some minor evidence*, 2 = *fairly clear evidence*, and 3 = *absolutely clear evidence*. All coefficients in the tables are unstandardized (which is the typical presentation in MLM) along with standard errors in parentheses. Indication of significant

results is left out for intercepts which more than often differ significantly from 0. Although the log likelihood of the model was provided, we used Wald tests (instead of log likelihood ratio tests) to assess statistical significance of the regression coefficients.

3.2.1 Insulting/Offensive/Demeaning Statement About Women

The first outcome variable was in response to "*This song includes insulting, offensive or demeaning statements about women*". Participants rated their agreement with the statement from 0 = *not at all* to 3 = *absolutely clear evidence.*

The intercept only model in Table 3.2.1 sheds light on the different sources of variance in this outcome variable. The three sources are attributed to characteristics of Participants (0.199), the Songs (0.203) and to the Residual (0.546) which includes within Participant by Song variation. More importantly, this information can be used to calculate the Intra Class Correlations (ICCs) for the random factors Participants and Songs, which are the proportions of the total variance in the outcome variable attributable to those factors. The total variance is 0.199 + 0.203+ 0.546 = 0.948, and therefore the ICC for Participants and Songs are 0.199/0.948 = .210 and 0.203/0.948 = .214 respectively. These values indicate that 21% of the variance in the outcome response is attributable to Participant characteristics, while another 21.4% is due to characteristics of the Songs. As a general observation, it is not uncommon to see similar or larger proportions for Participants. As for Songs, this suggests to us that our sample of Songs includes substantial heterogeneity in presence of offensive statements in the lyrics.

The second model includes predictors that explain the three sources of variance described above. Focusing on the model without the interaction, we see that the significant predictors in the within Person by Song section are **Liking the lyrics** (-0.254) at $p < .001$ and Song familiarity (0.072) at $p < .05$. In order to maintain Type 1 error rate at a reasonable

level for each model, we will only interpret coefficients significant at $p < .01$ or smaller. In terms of the interpretation of the intercept of 0.614 and the -0.254 coefficient for Liking lyrics as an example, we would say that for each one unit higher in Liking lyrics (i.e., -2 to 2), the predicted or expected response to the offensiveness variable decreases by -0.254 units (from the intercept value of 0.614), taking into account the other variables in the model.

At the between Person level, the only significant Person predictor at $p < .01$ was the **Sample** with a coefficient 0.216 ($p < .001$), indicating that participants in the SONA sample have a 0.216 higher mean response than the Prolific sample on the outcome, controlling for the other predictors in the model. At the between Song level, the categorical predictor **Genre** of music, with the specific contrast of Rap vs. Pop had a significant coefficient of 0.463, $p < .001$. This coefficient indicates that responses on the outcome variable have a 0.463 higher mean for Rap songs than Pop songs, controlling for other predictors in the model.

We also report the Conditional R^2 and Marginal R^2 values for the model. The Conditional value of 0.464 is the total amount of variance in the outcome explained by the combination of the random factors and fixed predictors, whereas the Marginal R^2 of .184 explains the proportion of variance explained by the fixed predictors (not unlike an R^2 in regular multiple linear regression).

The next model was first conducted in jamovi with the interaction (i.e., the four contrasts for the interaction between Participant gender and Artist gender), but these contrasts were not significant. As a result, this model requires no further discussion except to say that predictors that make up the interaction should be interpreted with the model without the interaction.

Moving to the model in Mplus with specification of the outcome variable as ordinal, the variables that were statistically significant were identical to the previous model in jamovi

with the interaction and the continuous outcome. The coefficients are somewhat more challenging to interpret with the ordinal outcome because they are in probit units which differ slightly from logit units which can be easily converted into odds ratios or probabilities. Also, instead of an intercept, the model includes thresholds which are similar to difficulty parameters in item response theory (IRT) and less meaningful for our purposes in this study.

The zero order correlations in the last column indicate the magnitude of the relationship between the individual predictors and the outcome variable (treating it as ordinal) and without controlling for other predictors in the model. Standard errors were not provided in the software for these correlations. One important observation when contrasting the results for the Person and Song predictors is that the standard errors are much larger for the song coefficients mainly because of the small number of songs (i.e., 36) in comparison to the number of participants (505), resulting in fewer statistically significant coefficients.

Table 3.2.1

Offensive Statements About Women Outcome Variable

Model Parameters	Jamovi REML with outcome as continuous models			Mplus Bayes estimation with outcome as ordinal cumulative logit using Probit link model	
	Intercept only	Without interaction	With interaction	With interaction	zero order correlation
Regression coefficients (fixed effects)					
Intercept (or thresholds for ordinal model)	1.003 (.078)	0.614 (.146)	0.597 (.146)	Tr1 0.294 (.262) Tr2 1.621 (.262) Tr3 2.752 (.264)	
Within person by song predictors					

Model Parameters	Jamovi REML with outcome as continuous models			Mplus Bayes estimation with outcome as ordinal cumulative logit using Probit link model	
	Intercept only	Without interaction	With interaction	With interaction	zero order correlation
Like lyrics		-0.254 (.011)***	-0.254 (.011)***	-0.424 (.019)***	-.428
Song familiarity		0.072 (.028)*	0.075 (.028)**	0.120 (.047)**	-.156
Artist familiarity		-0.013 (.029)	-0.011 (.029)	-0.026 (.049)	-.137
Gender person x Gender artist(s)					
Woman1; Man0 x WomanA1; ManA0			-0.041 (.046)	-0.095 (.077)	
Other1; Man0 x WomanA1; ManA0			0.180 (.140)	0.282 (.228)	
Woman1; Man0 x MixedA1; ManA0			-0.111 (.063)	-0.176 (.105)	
Other1; Man0 x MixedA1; ManA0			-0.210 (.176)	-0.338 (.309)	
Between Person predictors					
Sample (1 = SONA; 0 = Prolific)		0.216 (.046)***	0.215 (.046)***	0.384 (.078)***	.303
Gender (Woman1; Man0)		0.130 (.051)*	0.158 (.054)**	0.244 (.092)**	.214
Gender (Other1; Man0)		-0.046 (.134)	-0.068 (.146)	-0.122 (.243)	-.096
Hostile sexism		0.012 (.022)	0.012 (.022)	0.015 (.037)	-.023
Benevolent sexism		0.024 (.027)	0.023 (.027)	0.046 (.045)	.084
Listen to Lyrics		-0.004 (.027)	-0.003 (.027)	-0.002 (.045)	.000
Understand Lyrics		0.004 (.036)	0.002 (.036)	-0.017 (.061)	.009
Listen to Hip Hop		-0.010 (.046)	-0.010 (.046)	0.005 (.077)	.038
Between Song predictors					
Gender Artist(s) (WomanA1; ManA0)		-0.053 (.136)	-0.030 (.139)	0.040 (.252)	-.139

Model Parameters	Jamovi REML with outcome as continuous models			Mplus Bayes estimation with outcome as ordinal cumulative logit using Probit link model	
	Intercept only	Without interaction	With interaction	With interaction	zero order correlation
Gender Artist(s) (MixedA1; ManA0)		-0.100 (.165)	-0.019 (.171)	0.072 (.311)	-.057
Song Genre (RBlues1; Pop0)		0.189 (.206)	0.189 (.206)	0.373 (.373)	-.009
Song Genre (Country1; Pop0)		0.051 (.223)	0.052 (.223)	0.194 (.403)	-.095
Song Genre (Rap1; Pop0)		0.463 (.135)**	0.464 (.135)**	0.809 (.244)**	.554
Song Genre (Afrobeat1; Pop0)		-0.259 (.249)	-0.258 (.249)	-0.430 (.452)	-.287
Variance components					
Residual	0.546	0.499	0.499		
Participants Intercepts random effect	0.199	0.170	0.170	0.476 (.041)	
Songs Intercepts random effect	0.203	0.090	0.090	0.295 (.095)	
Conditional R^2	0.424	0.464	0.464		
Marginal R^2	0	0.184	0.185		
Model summary					
Log Likelihood	-7242.987	-6860.684	-6863.118		
Number of estimated parameters	4	21	25	26	
Number of cases (observation/ people/ songs)	6042/ 505/ 36	5947/ 499/ 36	5947/ 499/ 36	5948/ 499/ 36	

Note. *p<.05, **p < .01, ***p < .001. Regression coefficients with standard errors in parentheses are unstandardized. REML refers to Restricted Maximum Likelihood Estimation. Tr refers to thresholds. In the Mplus model, coefficients are in Probit units. Categorical predictors dummy coded.

3.2.2 Statements About Sexual Violence Against Women

The second outcome variable was in response to "*This song includes statements about sexual violence against women*". Participants rated their agreement with the statement from 0 = *not at all* to 3 = *absolutely clear evidence*. From the sources of variance in the intercept

only model in Table 3.2.2, the ICC is 0.270 for Participants and 0.132 for Songs. That is, 27% of the variance in the outcome variable ratings was attributed to Participant characteristics and 13.2% was attributed to Song characteristics.

In the model without the interaction, the significant predictor in the within Person by Song section is **Liking the lyrics** (-0.132) at $p < .001$. Thus, for each one unit higher in Liking lyrics, the expected response to the Sexual violence variable decreases by -0.132 units. At the between Person level, the significant predictors were the **Sample** with a coefficient of 0.203 ($p < .001$) and **Hostile sexism** at 0.079 ($p < .001$). This indicates that participants in the SONA sample have a 0.203 higher mean response than the Prolific sample, and for each unit higher on the Hostile sexism measure (scale ranging from 0 to 5), the expected response increase is 0.079 units, controlling for the other predictors in the model. At the between Song level, the predictor **Genre** of music, with the specific contrast of Rap vs. Pop had a significant coefficient of 0.289 ($p < .01$). This coefficient indicates that responses on the outcome variable have a 0.289 higher mean for Rap songs than Pop songs, controlling for other predictors in the model. The Conditional R^2 and Marginal R^2 for the model were 0.424 and 0.128 respectively.

In the next model in jamovi, the four contrasts for the interaction between Participant gender and Artist gender were not significant. As for the model for the first outcome variable, the model with the ordinal outcome produced identical results in terms of the predictors that were significant.

Table 3.2.2

Statements About Sexual Violence Outcome Variable

Model Parameters	jamovi REML with outcome as continuous models			Mplus Bayes estimation with outcome as ordinal cumulative logit using Probit link model	
	Intercept only	Without interaction	With interaction	With interaction	zero order correlation
Regression coefficients (fixed effects)					
Intercept (or thresholds for ordinal model)	0.501 (.053)	0.285 (.099)	0.275 (.099)	Tr1 1.222 (.246) Tr2 2.395 (.248) Tr3 3.357 (.250)	
Within person by song predictors					
Like lyrics		-0.132 (.009)***	-0.132 (.009)***	-0.337 (.022)***	-.374
Song familiarity		-0.013 (.024)	-0.011 (.024)	-0.018 (.056)	-.180
Artist familiarity		-0.029 (.025)	-0.027 (.025)	-0.042 (.058)	-.144
Gender person x Gender artist(s)					
Woman1; Man0 x WomanA1; ManA0			-0.026 (.040)	-0.046 (.090)	
Other1; Man0 x WomanA1; ManA0			0.063 (.121)	0.010 (.292)	
Woman1; Man0 x MixedA1; ManA0			-0.055 (.054)	-0.047 (.132)	
Other1; Man0 x MixedA1; ManA0			-0.074 (.152)	-0.600 (.546)	
Between Person predictors					
Sample (1 = SONA; 0 = Prolific)		0.203 (.043)***	0.202 (.043)***	0.534 (.099)***	.302
Gender (Woman1; Man0)		0.069 (.048)	0.085 (.050)	0.188 (.114)	.213

Model Parameters	jamovi REML with outcome as continuous models			Mplus Bayes estimation with outcome as ordinal cumulative logit using Probit link model	
	Intercept only	Without interaction	With interaction	With interaction	zero order correlation
Gender (Other1; Man0)		-0.064 (.126)	-0.072 (.135)	-0.199 (.309)	-.096
Hostile sexism		0.079 (.021)***	0.079 (.021)***	0.166 (.047)***	-.023
Benevolent sexism		0.031 (.025)	0.031 (.025)	0.092 (.057)	.084
Listen to Lyrics		-0.002 (.025)	-0.002 (.025)	-0.024 (.057)	.000
Understand Lyrics		-0.026 (.034)	-0.027 (.034)	-0.114 (.077)	.009
Listen to Hip Hop		-0.025 (.043)	-0.025 (.043)	-0.031 (.098)	.036
Between Song predictors					
Gender Artist(s) (WomanA1; ManA0)		-0.056 (.086)	-0.040 (.090)	-0.076 (.223)	-.091
Gender Artist(s) (MixedA1; ManA0)		-0.160 (.104)	-0.121 (.111)	-0.243 (.275)	-.139
Song Genre (RBlues1; Pop0)		-0.004 (.130)	-0.004 (.130)	0.081 (.321)	-.057
Song Genre (Country1; Pop0)		-0.205 (.141)	-0.204 (.141)	-0.577 (.351)	-.366
Song Genre (Rap1; Pop0)		0.289 (.085)**	0.289 (.085)**	0.651 (.212)**	.628
Song Genre (Afrobeat1; Pop0)		-0.103 (.157)	-0.102 (.157)	-0.289 (.386)	-.229
Variance components					
Residual	0.385	0.371	0.371		
Participants Intercepts random effect	0.174	0.156	0.156	0.782 (.071)	
Songs Intercepts random effect	0.085	0.035	0.035	0.202 (.068)	
Conditional R^2	0.402	0.424	0.424		
Marginal R^2	0	0.128	0.129		
Model summary					

Model Parameters	jamovi REML with outcome as continuous models			Mplus Bayes estimation with outcome as ordinal cumulative logit using Probit link model	
	Intercept only	Without interaction	With interaction	With interaction	zero order correlation
Log Likelihood	-6236.577	-6027.422	-6033.096		
Number of estimated parameters	4	21	25	26	
Number of cases (observation/ people/ songs)	6052/ 505/ 36	5947/ 499/ 36	5957/ 499/ 36	5958/ 499/ 36	

Note. *p<.05, **p < .01, ***p < .001. Regression coefficients with standard errors in parentheses are unstandardized. REML refers to Restricted Maximum Likelihood Estimation. Tr refers to thresholds. In the Mplus model, coefficients are in Probit units. Categorical predictors dummy coded.

3.2.3 Statements Suggesting Women Wreck Men's Lives

The third outcome variable was in response to "*This song includes statements suggesting that women make men's lives difficult and/or wreck men's lives*". Participants rated their agreement with the statement from 0 = *not at all* to 3 = *absolutely clear evidence*.

Based on the sources of variance in the intercept only model in Table 3.2.3, the ICC is 0.161 for Participants and 0.266 for Songs. Thus, 16.1% of the variance in the outcome variable ratings was attributed to Participant characteristics and 26.6% was attributed to Song characteristics. In comparison with models for the two previous outcome variables, we see that the proportion of variance attributable to Participants is a bit smaller, while the proportion due to Songs is a bit larger. This indicates that for this particular outcome, there is slightly more heterogeneity among Participants, and less heterogeneity across Songs than for the two previous outcome variables.

In the model without the interaction, the significant predictor in the within Person by Song section is **Liking the lyrics** (-0.129) at $p < .001$. At the between Person level, the significant predictor was the **Sample** with a coefficient of 0.267 ($p < .001$), indicating that

participants in the SONA sample have a 0.267 higher mean response than the Prolific sample on the outcome, controlling for the other predictors in the model. None of the predictors found in the between Song level were significant when controlling for other predictors in the model. The Conditional R^2 value was 0.467, while the Marginal R^2 was 0.095 and slightly lower than in the previous models.

In the next model, the four contrasts for the interaction between Participant gender and Artist gender were not significant at $p < .01$. However, it should be cautiously pointed out that one contrast had a $p = .01$, and in the ordinal version (Mplus column), the same contrast had an exact p value of .006. The interpretation of this interaction contrast is that both male and female participants had nearly equal ratings on the outcome variable when the Artist was female, but that although both male and female Participants had higher scores when the Artist was male, those scores were substantially higher for female Participants. In summary, for Songs with male Artists, female Participants reported higher scores than did male Participants on lyrics suggesting that Women wreck men's lives, controlling for other variables in the model.

Table 3.2.3

Statements That Women Wreck Men's Lives Outcome Variable

Model Parameters	Jamovi REML with outcome as continuous models			Mplus Bayes estimation with outcome as ordinal cumulative logit using Probit link model	
	Intercept only	Without interaction	With interaction	With interaction	zero order correlation
Regression coefficients (fixed effects)					
Intercept (or thresholds for ordinal model)	0.814 (.086)	0.573 (.220)	0.550 (.221)	Tr1 0.349 (.323)	

Model Parameters	Jamovi REML with outcome as continuous models			Mplus Bayes estimation with outcome as ordinal cumulative logit using Probit link model	
	Intercept only	Without interaction	With interaction	With interaction	zero order correlation
				Tr2 1.404 (.324) Tr3 2.405 (.325)	
Within person by song predictors					
Like lyrics		-0.129 (.011)***	-0.126 (.011)***	-0.217 (.019)***	-.251
Song familiarity		-0.020 (.029)	-0.015 (.029)	-0.038 (.048)	-.127
Artist familiarity		0.041 (.030)	0.043 (.030)	0.067 (.050)	-.070
Gender person x Gender artist(s)					
Woman1; Man0 x WomanA1; ManA0			-0.122 (.047)*	-0.217 (.079)**	
Other1; Man0 x WomanA1; ManA0			-0.018 (.143)	-0.016 (.239)	
Woman1; Man0 x MixedA1; ManA0			0.027 (.065)	0.015 (.107)	
Other1; Man0 x MixedA1; ManA0			-0.168 (.184)	-0.247 (.322)	
Between Person predictors					
Sample (1 = SONA; 0 = Prolific)		0.267 (.043)***	0.264 (.043)***	0.475 (.075)***	.346
Gender (Woman1; Man0)		0.059 (.047)	0.095 (.051)	0.162 (.088)	.156
Gender (Other1; Man0)		-0.038 (.126)	-0.004 (.138)	-0.015 (.236)	-.063
Hostile sexism		0.042 (.021)*	0.041 (.021)*	0.079 (.035)*	.076
Benevolent sexism		-0.000 (.025)	-0.001 (.025)	0.006 (.043)	.087

Model Parameters	Jamovi REML with outcome as continuous models			Mplus Bayes estimation with outcome as ordinal cumulative logit using Probit link model	
	Intercept only	Without interaction	With interaction	With interaction	zero order correlation
Listen to Lyrics		-0.011 (.025)	-0.011 (.025)	-0.022 (.043)	-.035
Understand Lyrics		-0.039 (.034)	-0.041 (.034)	-0.085 (.058)	-.047
Listen to Hip Hop		0.007 (.043)	0.005 (.043)	0.009 (.073)	.051
Between Song predictors					
Gender Artist(s) (WomanA1; ManA0)		-0.238 (.215)	-0.155 (.217)	-0.227 (.325)	-.165
Gender Artist(s) (MixedA1; ManA0)		0.164 (.261)	0.148 (.265)	0.224 (.401)	.049
Song Genre (RBlues1; Pop0)		0.664 (.325)	0.663 (.326)	0.875 (.487)	.290
Song Genre (Country1; Pop0)		0.203 (.352)	0.206 (.352)	0.189 (.521)	.054
Song Genre (Rap1; Pop0)		0.094 (.213)	0.097 (.213)	0.080 (.317)	.019
Song Genre (Afrobeat1; Pop0)		-0.347 (.393)	-0.341 (.393)	-0.556 (.583)	-.153
Variance components					
Residual	0.544	0.529	0.528		
Participants Intercepts random effect	0.153	0.140	0.139	0.415 (.038)	
Songs Intercepts random effect	0.253	0.229	0.229	0.522 (.164)	
Conditional R^2	0.427	0.467	0.467		
Marginal R^2	0	0.095	0.096		
Model summary					
Log Likelihood	-7188.008	-7000.718	-7001.709		
Number of estimated parameters	4	21	25	26	
Number of cases (observation/ people/ songs)	6045/ 505/ 36	5950/ 499/ 36	5950/ 499/ 36	5951/ 499/ 36	

Note. *p < .05, **p < .01, ***p < .001. Regression coefficients with standard errors in parentheses are unstandardized. REML refers to Restricted Maximum Likelihood Estimation. Tr refers to thresholds. In the Mplus model, coefficients are in Probit units. Categorical predictors dummy coded.

3.2.4 Statements Suggesting Women Use Men

The fourth outcome variable was in response to "*This song suggests that women use men for their own personal gain or enjoyment*". Participants rated their agreement with the statement from 0 = *not at all* to 3 = *absolutely clear evidence.*

From the intercept only model in Table 3.2.4, the sources of variance in this outcome variable translate into an ICC of 0.162 for Participants and 0.234 for Songs. In the model without the interaction, the significant predictor in the within Person by Song section is **Liking the lyrics** with a value of -0.127 at p < .001. Thus, for each one unit higher in Liking lyrics, the predicted or expected response to the Women use men variable decreases by -0.127 units, controlling for other predictors in the model. At the between Person level, the significant predictor was the **Sample** with a coefficient of 0.211 (p < .001), indicating that participants in the SONA sample have a 0.211 higher mean response than the Prolific sample on the outcome when controlling for the other predictors in the model. There were no significant predictors at the between Song level at p < .01 when controlling for other predictors in the model.

The Conditional R^2 for this model was 0.420, while the Marginal R^2 was 0.097. The next model testing for the gender of Participant by gender of Artist was not significant. Results of the model with the ordinal outcome specification in Mplus produced similar results.

Table 3.2.4

Statements That Women Use Men Outcome Variable

Model Parameters	Jamovi REML with outcome as continuous models			Mplus Bayes estimation with outcome as ordinal cumulative logit using Probit link model	
	Intercept only	Without interaction	With interaction	With interaction	zero order correlations
Regression coefficients (fixed effects)					
Intercept (or thresholds for ordinal model)	0.814 (.086)	0.413 (.207)	0.412 (.208)	Tr1 0.525 (.273) Tr2 1.477 (.274) Tr3 2.412 (.274)	
Within person by song predictors					
Like lyrics		-0.127 (.012)***	-0.127 (.012)***	-0.193 (.018)***	-.196
Song familiarity		0.061 (.032)	0.062 (.032)	0.079 (.047)	-.047
Artist familiarity		0.041 (.033)	0.041 (.033)	0.055 (.049)	-.028
Gender person x Gender artist(s)					
Woman1; Man0 x WomanA1; ManA0			-0.008 (.052)	-0.037 (.076)	
Other1; Man0 x WomanA1; ManA0			0.104 (.158)	0.156 (.229)	
Woman1; Man0 x MixedA1; ManA0			0.013 (.071)	-0.027 (.104)	
Other1; Man0 x MixedA1; ManA0			-0.168 (.199)	-0.243 (.308)	
Between Person predictors					
Sample (1 = SONA; 0 = Prolific)		0.211 (.046)***	0.210 (.046)***	0.319 (.069)***	.276
Gender (Woman1; Man0)		0.097 (.051)	0.098 (.055)	0.153 (.084)	.157
Gender (Other1; Man0)		-0.023 (.135)	-0.028 (.149)	-0.056 (.227)	-.067

Model Parameters	Jamovi REML with outcome as continuous models			Mplus Bayes estimation with outcome as ordinal cumulative logit using Probit link model	
	Intercept only	Without interaction	With interaction	With interaction	zero order correlations
Hostile sexism		0.022	0.022	0.034	.040
		(.022)	(.022)	(.033)	
Benevolent sexism		0.017	0.017	0.043	.106
		(.027)	(.027)	(.040)	
Listen to Lyrics		-0.018	-0.018	-0.019	-.036
		(.027)	(.027)	(.040)	
Understand Lyrics		-0.072	-0.073	-0.114	-.079
		(.036)*	(.036)*	(.054)	
Listen to Hip Hop		0.007	0.036	-0.019	.069
		(.046)	(.046)	(.040)	
Between Song predictors					
Gender Artist(s) (WomanA1; ManA0)		0.402	0.406	0.532	.250
		(.200)	(.204)	(.277)	
Gender Artist(s) (MixedA1; ManA0)		0.428	0.424	0.618	.094
		(.243)	(.248)	(.348)	
Song Genre (RBlues1; Pop0)		0.673	0.672	0.867	.263
		(.304)*	(.304)*	(.420)*	
Song Genre (Country1; Pop0)		0.072	0.073	0.022	-.162
		(.328)	(.328)	(.448)	
Song Genre (Rap1; Pop0)		0.216	0.217	0.255	.025
		(.199)	(.199)	(.268)	
Song Genre (Afrobeat1; Pop0)		-0.411	-0.409	-0.693	-.266
		(.367)	(.367)	(.506)	
Variance components					
Residual	0.652	0.639	0.639		
Participants Intercepts random effect	0.175	0.159	0.158	0.356 (.033)	
Songs Intercepts random effect	0.252	0.198	0.198	0.387 (.123)	
Conditional R^2	0.396	0.420	0.420		
Marginal R^2	0	0.097	0.097		
Model summary					
Log Likelihood	-7707.803	-7532.101	-7536.657		
Number of estimated parameters	4	21	25	26	
Number of cases (observation/ people/	6033/ 505/ 36	5939/ 499/ 36	5939/ 499/ 36	5940/ 499/ 36	

Note. *p<.05, **p < .01, ***p < .001. Regression coefficients with standard errors in parentheses are unstandardized. REML refers to Restricted Maximum Likelihood Estimation. Tr refers to thresholds. In the Mplus model, coefficients are in Probit units. Categorical predictors dummy coded.

3.2.5 Statements Suggesting Women are Inferior to Men

The fifth outcome variable was in response to "*This song includes statements saying that women are inferior to or less human than men*". From the intercept only model in Table 3.2.5, the sources of variance in this outcome variable translate into an ICC is 0.255 for Participants and 0.139 for Songs. In the next model with all predictors without the interaction, the significant predictor in the within Person by Song section is **Liking the lyrics** (-0.175) at $p < .001$. Thus, for each one unit higher in Liking lyrics, the predicted or expected response to the Women are inferior variable decreases by -0.175 units, controlling for other predictors in the model.

At the between Person level, the significant predictors were the **Sample** with a coefficient of 0.251 ($p < .001$), and the **Gender** contrast of participants who identify as women vs. men at 0.149 ($p < .01$). This indicates that participants in the SONA sample have a 0.251 higher mean response than participants in Prolific, and women have a 0.149 higher mean response than men on the outcome when controlling for the other predictors in the model. At the between Song level, the predictor **Genre** of music, with the specific contrast of Rap vs. Pop had a significant coefficient of 0.295, $p < .01$. This coefficient indicates that responses on the outcome variable have a 0.295 higher mean for Rap songs than Pop songs, controlling for other predictors in the model. The Conditional R^2 value was 0.427 and the Marginal R^2 was 0.153.

In the next model with the gender of Participant by gender of Artist interaction, no support was found for that interaction. The results for the model with the outcome variable

specified as ordinal produced identical results in terms of predictors that were significant, with only slight deviations for some predictors as to whether they were significant at .01 or .001.

Table 3.2.5

Statements That Women are Inferior Outcome Variable

Model Parameters	Jamovi REML with outcome as continuous models			Mplus Bayes estimation with outcome as ordinal cumulative logit using Probit link model	
	Intercept only	Without interaction	With interaction	With interaction	**zero order correlations**
Regression coefficients (fixed effects)					
Intercept (or thresholds for ordinal model)	0.814 (.086)	0.358 (.100)	0..342 (.101)	Tr1 1.002 (.221) Tr2 2.215 (.222) Tr3 3.272 (.224)	
Within person by song predictors					
Like lyrics		-0.175 (.010)***	-0.175 (.010)***	-0.370 (.021)***	-.381
Song familiarity		0.036 (.026)	0.038 (.026)	0.073 (.052)	-.140
Artist familiarity		0.005 (.027)	0.006 (.027)	0.014 (.054)	-.110
Gender person x Gender artist(s)					
Woman1; Man0 x WomanA1; ManA0			-0.041 (.042)	-0.015 (.088)	
Other1; Man0 x WomanA1; ManA0			0.055 (.127)	0.019 (.282)	
Woman1; Man0 x MixedA1; ManA0			-0.089 (.058)	-0.149 (.117)	
Other1; Man0 x MixedA1; ManA0			-0.039 (.161)	-0.073 (.346)	
Between Person predictors					

Model Parameters	Jamovi REML with outcome as continuous models			Mplus Bayes estimation with outcome as ordinal cumulative logit using Probit link model	
	Intercept only	Without interaction	With interaction	With interaction	**zero order correlations**
Sample (1 = SONA; 0 = Prolific)		0.251 (.044)***	0.250 (.044)***	0.573 (.094)***	.340
Gender (Woman1; Man0)		0.149 (.049)**	0.174 (.052)***	0.321 (.110)**	.199
Gender (Other1; Man0)		-0.003 (.130)	-0.013 (.140)	-0.027 (.290)	-.075
Hostile sexism		0.053 (.021)*	0.053 (.021)*	0.106 (.045)*	.085
Benevolent sexism		0.036 (.026)	0.036 (.026)	0.088 (.054)	.150
Listen to Lyrics		-0.012 (.026)	-0.011 (.026)	-0.037 (.054)	-.041
Understand Lyrics		-0.012 (.035)	-0.014 (.035)	-0.067 (.073)	-.030
Listen to Hip Hop		-0.031 (.044)	-0.032 (.044)	-0.058 (.093)	.021
Between Song predictors					
Gender Artist(s) (WomanA1; ManA0)		-0.227 (.086)*	-0.202 (.091)*	-0.337 (.193)	-.437
Gender Artist(s) (MixedA1; ManA0)		-0.119 (.105)	-0.058 (.113)	0.025 (.236)	.035
Song Genre (RBlues1; Pop0)		0.016 (.131)	0.016 (.131)	0.107 (.275)	-.099
Song Genre (Country1; Pop0)		-0.026 (.142)	-0.025 (.142)	0.071 (.298)	-.058
Song Genre (Rap1; Pop0)		0.295 (.086)**	0.296 (.086)**	0.649 (.181)***	.660
Song Genre (Afrobeat1; Pop0)		-0.148 (.158)	-0.149 (.158)	-0.289 (.333)	-.198
Variance components					
Residual	0.439	0.415	0.415		
Participants Intercepts random effect	0.185	0.163	0.163	0.705 (.063)	
Songs Intercepts random effect	0.101	0.035	0.035	0.148 (.050)	
Conditional R^2	0.395	0.427	0.427		
Marginal R^2	0	0.153	0.154		

Model Parameters	Jamovi REML with outcome as continuous models			Mplus Bayes estimation with outcome as ordinal cumulative logit using Probit link model	
	Intercept only	Without interaction	With interaction	With interaction	**zero order correlations**
Model summary					
Log Likelihood	-6600.324	-6327.462	-6332.268		
Number of estimated parameters	4	21	25	26	
Number of cases (observation/ people/ songs)	6039/ 505/ 36	5944/ 499/ 36	5944/ 499/ 36	5945/ 499/ 36	

Note. *p <.05, **p < .01, ***p < .001. Regression coefficients with standard errors in parentheses are unstandardized. REML refers to Restricted Maximum Likelihood Estimation. Tr refers to thresholds. In the Mplus model, coefficients are in Probit units. Categorical predictors dummy coded.

3.2.6 Statements Suggesting Women as Useable/Discardable

The sixth outcome variable was in response to "*This song suggests that women are usable and discardable*".

From the intercept only model in Table 3.2.6, the sources of variance in the outcome variable translate to an ICC of 0.223 for Participants and 0.170 for Songs. In the model without the interaction, the significant predictors in the within Person by song section were **Liking the lyrics** with a value of -0.235) at p < .001, and **Song familiarity** with a value of 0.086) at p < .01 (but noting that this coefficient was significant only at p < .05 in the ordinal outcome model). These coefficients indicate that for each one unit higher in Liking lyrics, the expected response to the Women are useable variable decreases by -0.235 units, while for each unit higher in Song familiarity, the predicted response increased by 0.086 units, taking into account the other predictors in the model.

At the between Person level, the significant predictor was the **Sample** with a coefficient of 0.259 (p < .001). This suggests that participants in the SONA sample have a

0.259 higher mean response than Prolific when controlling for the other predictors in the model. At the between Song level, the predictor **Genre** of music, with the specific contrast of Rap vs. Pop had a significant coefficient of 0.383, $p < .001$, indicating that responses on the outcome variable have a 0.383 higher mean for Rap than Pop songs when controlling for other predictors in the model. The Conditional R^2 value was 0.431 and the Marginal R^2 was 0.164.

In the next model, no evidence of a significant interaction between Participant gender and Artist gender was found. In the final model with the outcome specified as ordinal, the results were identical with only slight differences in *p* values.

Table 3.2.6

Statements That Women are Useable Outcome Variable

Model Parameters	Jamovi REML with outcome as continuous models			Mplus Bayes estimation with outcome as ordinal cumulative logit using Probit link model	
	Intercept only	Without interaction	With interaction	With interaction	zero order correlations
Regression coefficients (fixed effects)					
Intercept (or thresholds for ordinal model)	0.814 (.086)	0.625 (.131)	0.610 (.132)	Tr1 0.414 (.185) Tr2 1.513 (.186) Tr3 2.565 (.187)	
Within person by song predictors					
Like lyrics		-0.235 (.011)***	-0.234 (.012)***	-0.386 (.019)***	-.384
Song familiarity		0.086 (.030)**	0.088 (.030)**	0.146 (.048)*	-.119
Artist familiarity		0.014 (.031)	0.015 (.031)	0.018 (.049)	-.099

Model Parameters	Jamovi REML with outcome as continuous models			Mplus Bayes estimation with outcome as ordinal cumulative logit using Probit link model	
	Intercept only	Without interaction	With interaction	With interaction	zero order correlations
Gender person x Gender artist(s)					
Woman1; Man0 x WomanA1; ManA0			-0.047 (.047)	-0.110 (.078)	
Other1; Man0 x WomanA1; ManA0			-0.101 (.149)	-0.240 (.247)	
Woman1; Man0 x MixedA1; ManA0			-0.049 (.067)	-0.128 (.108)	
Other1; Man0 x MixedA1; ManA0			-0.113 (.186)	-0.226 (.313)	
Between Person predictors					
Sample (1 = SONA; 0 = Prolific)		0.259 (.049)***	0.258 (.049)***	0.447 (.080)***	.315
Gender (Woman1; Man0)		0.104 (.054)	0.126 (.052)*	0.209 (.093)*	.189
Gender (Other1; Man0)		-0.131 (.143)	-0.083 (.155)	-0.065 (.250)	-.075
Hostile sexism		0.021 (.024)	0.021 (.024)	0.035 (.038)	-.003
Benevolent sexism		0.008 (.028)	0.008 (.028)	0.008 (.046)	.054
Listen to Lyrics		0.024 (.029)	0.024 (.029)	0.018 (.047)	.016
Understand Lyrics		-0.020 (.038)	-0.021 (.038)	-0.059 (.063)	-.018
Listen to Hip Hop		-0.013 (.049)	-0.014 (.049)	0.015 (.079)	.041
Between Song predictors					
Gender Artist(s) (WomanA1; ManA0)		-0.122 (.118)	-0.088 (.123)	-0.017 (.190)	-.124
Gender Artist(s) (MixedA1; ManA0)		-0.094 (.144)	-0.058 (.152)	0.054 (.247)	-.011
Song Genre (RBlues1; Pop0)		-0.055 (.179)	-0.055 (.179)	-0.001 (.290)	-.133
Song Genre (Country1; Pop0)		-0.216 (.194)	-0.215 (.194)	-0.262 (.307)	-.268

Model Parameters	Jamovi REML with outcome as continuous models			Mplus Bayes estimation with outcome as ordinal cumulative logit using Probit link model	
	Intercept only	Without interaction	With interaction	With interaction	zero order correlations
Song Genre (Rap1; Pop0)		0.383 (.117)**	0.383 (.118)**	0.649 (.179)***	.639
Song Genre (Afrobeat1; Pop0)		-0.262 (.217)	-0.261 (.217)	-0.421 (.355)	-.271
Variance components					
Residual	0.598	0.556	0.556		
Participants Intercepts random effect	0.220	0.193	0.193	0.512 (.045)	
Songs Intercepts random effect	0.168	0.067	0.067	0.182 (.059)	
Conditional R^2	0.393	0.431	0.431		
Marginal R^2	0	0.164	0.164		
Model summary					
Log Likelihood	-7493.423	-.7162.554	-7167.579		
Number of estimated parameters	4	21	25	26	
Number of cases (observation/ people/ songs)	6025/ 505/ 36	5931/ 499/ 36	5931/ 499/ 36	5932/ 499/ 36	

Note. *p<.05, **p < .01, ***p < .001. Regression coefficients with standard errors in parentheses are unstandardized. REML refers to Restricted Maximum Likelihood Estimation. Tr refers to thresholds. In the Mplus model, coefficients are in Probit units. Categorical predictors dummy coded.

3.2.7 Composite of the Six Individual Misogyny Items

In this section, the outcome variable is a composite of the six individual misogyny variables assigned equal weights.

From the intercept only model in Table 3.2.7, the sources of variance translated into an ICC of 0.321 for Participants and 0.197 for Songs. In the model without the interaction, the significant predictor in the within Person by Song section is **Liking the lyrics** (-0.173) at

$p < .001$. Thus, for each one unit higher in Liking lyrics, the predicted response on the composite outcome decreases by -0.173 units, taking into account the other variables in the model.

At the between Person level, the significant predictor was the **Sample** with a coefficient of 0.236 ($p < .001$), indicating that participants in the SONA sample have 0.236 higher mean responses than the Prolific sample when controlling for the other predictors in the model. At the between Song level, the predictor **Genre** of music, with the specific contrast of Rap vs. Pop had a significant coefficient of 0.290 ($p < .01$). This coefficient indicates that the mean composite outcome value is 0.290 units higher for Rap than Pop songs, controlling for other predictors in the model. The Conditional R^2 for the model was 0.564, while the Marginal R^2 was 0.189.

The next model testing the interaction between Participant gender and Artist gender was not significant. The final model with the outcome variable specified as ordinal (by rounding to composite value to integers) produced very similar results in terms of the *p* values of predictors.

Table 3.2.7

Composite of the Six Misogyny Outcome Variables

Model Parameters	Jamovi REML with outcome as continuous models			Mplus Bayes estimation with outcome as ordinal cumulative logit using Probit link model	
	Intercept only	Without interaction	With interaction	With interaction	zero order correlations
Regression coefficients (fixed effects)					
Intercept (or thresholds for ordinal model)	0.814 (.086)	0.477 (.104)	0.462 (.105)	Tr1 0.357 (.241)	

Model Parameters	Jamovi REML with outcome as continuous models			Mplus Bayes estimation with outcome as ordinal cumulative logit using Probit link model	
	Intercept only	Without interaction	With interaction	With interaction	zero order correlations
				Tr2 2.306 (.241) Tr3 4.111 (.246)	
Within person by song predictors					
Like lyrics		-0.173 (.007)***	-0.172 (.007)***	-0.426 (.020)***	-.427
Song familiarity		0.034 (.018)	0.036 (.018)*	0.110 (.049)*	-.153
Artist familiarity		0.010 (.019)	0.011 (.019)	0.027 (.051)	-.119
Gender person x Gender artist(s)					
Woman1; Man0 x WomanA1; ManA0			-0.050 (.029)	-0.162 (.080)	
Other1; Man0 x WomanA1; ManA0			0.034 (.090)	-0.030 (.241)	
Woman1; Man0 x MixedA1; ManA0			-0.050 (.067)	-0.129 (.110)	
Other1; Man0 x MixedA1; ManA0			-0.118 (.113)	-0.522 (.331)	
Between Person predictors					
Sample (1 = SONA; 0 = Prolific)		0.236 (.038)***	0.235 (.038)***	0.606 (.095)***	.340
Gender (Woman1; Man0)		0.100 (.043)*	0.123 (.044)**	0.266 (.109)*	.181
Gender (Other1; Man0)		-0.056 (.113)	-0.047 (.118)	-0.052 (.293)	-.073
Hostile sexism		0.038 (.019)*	0.038 (.019)*	0.081 (.046)	.058
Benevolent sexism		0.020 (.022)	0.019 (.022)	0.070 (.055)	.125
Listen to Lyrics		-0.004 (.023)	-0.004 (.023)	-0.010 (.055)	-.017

Model Parameters	Jamovi REML with outcome as continuous models			Mplus Bayes estimation with outcome as ordinal cumulative logit using Probit link model	
	Intercept only	Without interaction	With interaction	With interaction	zero order correlations
Understand Lyrics		-0.029 (.030)	-0.030 (.030)	-0.101 (.074)	-.037
Listen to Hip Hop		-0.006 (.038)	-0.007 (.038)	-0.007 (.094)	.043
Between Song predictors					
Gender Artist(s) (WomanA1; ManA0)		-0.049 (.094)	-0.016 (.097)	0.121 (.238)	-.078
Gender Artist(s) (MixedA1; ManA0)		0.023 (.115)	0.060 (.118)	0.268 (.300)	.004
Song Genre (RBlues1; Pop0)		0.248 (.143)	0.248 (.143)	0.580 (.359)	.086
Song Genre (Country1; Pop0)		-0.021 (.155)	-0.020 (.155)	0.087 (.383)	-.155
Song Genre (Rap1; Pop0)		0.290 (.094)**	0.292 (.094)**	0.751 (.228)***	.505
Song Genre (Afrobeat1; Pop0)		-0.257 (.173)	-0.255 (.173)	-0.656 (.437)	-.346
Variance components					
Residual	0.227	0.204	0.204		
Participants Intercepts random effect	0.151	0.132	0.132	0.771 (.063)	
Songs Intercepts random effect	0.093	0.043	0.044	0.281 (.089)	
Conditional R^2	0.518	0.564	0.564		
Marginal R^2	0	0.189	0.189		
Model summary					
Log Likelihood	-4726.761	-4343.900	-4349.123		
Number of estimated parameters	4	21	25	26	
Number of cases (observation/ people/	6047/ 505/ 36	5953/ 499/ 36	5953/ 499/ 36	5954/ 499/ 36	

Note. *p < .05, **p < .01, ***p < .001. Regression coefficients with standard errors in parentheses are unstandardized. REML refers to Restricted Maximum Likelihood Estimation.

Tr refers to thresholds. In the Mplus model, coefficients are in Probit units. Categorical predictors dummy coded.

3.2.8 Summary of MLM Results

Although there was a consistent pattern of results across the six individual misogyny items, which was to be expected given that some of those items correlated with each other substantially (see Table 3.1.1), we also anticipated nuanced differences across the results. Highlights of the results are summarized below.

1. The ICCS for Participants range from .161 (Women wreck men's lives) to .270 (Sexual violence against women) across the outcome variables. These values suggest that participants show a bit more heterogeneity in their perceptions of the presence of statements in the song lyrics about Sexual violence against women than statements suggesting Women wreck men's lives.
2. The ICCs for the Songs range from .132 (Sexual violence) to .266 (Women wreck men's lives). This pattern is in a sense the opposite of the pattern for the ICCs for participants. Here we see that responses averaged for Songs rather than Participants show more heterogeneity across the responses for Women wreck men's lives and less for Sexual violence against women.
3. The proportion of variance explained by the fixed predictors (Marginal R^2) ranged from .095 in the model when the outcome in Women wreck men's lives to .184 for Offensive statements. In fact, the highest value was for the composite outcome, with a value of .189. There is no obvious explanation for this minor range except perhaps a combination of factors such as slight variation in the means, variances, and reliabilities of each variable.

4. In terms of the within Participant by Song predictors, the predictor Liking (vs. disliking) the lyrics had a consistent negative association with perceived statements of misogyny in the Songs (with unstandardized regression coefficients ranging from -.127 to -.254). Little or no evidence was found for a role of Song familiarity or Artist familiarity.
5. For the Participant predictors, the SONA sample consistently reported higher levels of misogyny on all the items than the Prolific sample (range of mean difference from .203 for Sexual violence to .267 Wreck men's lives). As described in the participant section, there was a large difference in the mean age and distribution for the two samples. We found Participant gender differences (.149 higher for female participants) only in the model with the outcome of statements that Women are inferior to men. At the same time, it should also be noted that across the models, the zero order correlations for the gender contrast (women vs. men) and the outcome ranged from .156 to .214. No evidence was found for a role of the individual difference of music listening habits variables of Listening to lyrics, Understanding lyrics, or Listening to Hip Hop.
6. When investigating the hypothesized effects of individual difference in Hostile and Benevolent sexism on outcomes, a significant association was found for Hostile sexism only in the model where the outcome variable was Sexual violence against women. However, this effect size was small and in the opposite of the hypothesized direction.
7. In regards to the hypothesized interaction between Participant gender and Artist gender, partial support was found only for the outcome variable of Women wreck men's lives and will be discussed further in the next section.

8. Lastly, for the predictors within Songs, the specific contrast between Rap to the reference group (Pop) revealed significantly higher perceptions of misogyny in Rap songs across four of the outcome variables (ranging from .295 to .463 units). Gender of the Artist was not significant in any of the models.

Chapter 4

4 Discussion

The purpose of this study was to investigate if participants were able to perceive six themes of misogyny in some of the most popular songs of 2022, to detect how much the participants varied in their ratings of misogyny, and to explore how individual characteristics potentially affected these ratings. To our knowledge, this study was the first of its kind to ask participants to perform their own content analyses in lyrics, and now we have some evidence to determine the extent of problematic content in music from 2022. We created three main hypotheses to direct our work: 1) female participants would perceive more evidence of misogyny in the song lyrics than would male participants, 2a) participants who scored higher on the Hostile sexism scale of the Ambivalent Sexism Inventory would perceive the songs as having less evidence of misogyny, 2b) participants who scored higher on Benevolent sexism would perceive more misogyny in the song lyrics, and 3) female participants would perceive more evidence of misogyny in the lyrics of songs performed by male artists than in song by female artists.

We used a relatively large sample of 36 songs for the lyrics, which allowed us to treat them as a random factor. With this model, we were able to investigate variation in the properties of the songs, such as their genre and the gender of the performing artists. Prior to the main multilevel modeling analyses, we found it very insightful to investigate the descriptive statistics of the individual songs. Participants from the combined SONA and Prolific samples rated “One Right Now” by Post Malone and The Weeknd, “Smokin Out The Window” by Silk Sonic and “Puffin On Zootiez” by Future as the songs with the highest levels of misogyny. With the exception of “Smokin Out The Window” (R&B), these songs fell within the Rap/Hip Hop category, aligning with previous research that found Rap to be

the most misogynistic out of all genres (e.g., Flynn et al., 2016; Frisby & Behm-Morawitz, 2019). There was some evidence from the MLM analyses that lyrics from Rap/Hip Hop songs were rated as having more evidence of misogyny than Pop lyrics. These findings are supported by previous work as Rap music tends to be more explicit than other musical genres (Craig, 2015; Tyree & Jones, 2015). Our rationale for including various genres was encouraged by previous work that found misogyny across most genres of music (Flynn et al., 2016; Frisby & Behm-Morawitz, 2019) and in multiple decades (Boghrati & Berger, 2023; Smiler et al., 2017). However, it is important to note that the fact that we did not find significant differences between Rap/Hip Hop and genres other than Pop may have been influenced by the low power for those comparisons (i.e., the majority of the songs were either Rap/Hip Hop or Pop).

One unexpected finding was how relatively low the highest misogyny ratings were. As noted above, "One Right Now" was rated the most misogynistic by both samples, yet the composite mean for that song was 1.59 (*SD* = 0.76) for SONA and 1.52 (*SD* = 0.72) for Prolific, scores halfway between *"some minor evidence"* and *"fairly clear evidence"* on the misogyny scales. The Women wreck men's lives item for this song was the highest in misogyny for both SONA (*M* = 2.10, *SD* = 0.94) and Prolific (*M* = 2.14, *SD* = 0.94) and the other five items ranged between 1.09-1.79 for SONA and 0.88-1.76 for Prolific. In contrast, the preliminary song selection ratings from four of us (i.e., myself, thesis advisor, and two grad students) resulted in a mean rating of 2.5 out of a possible 3 (between *moderate* and *severe* evidence) albeit, we used a different set of anchors and a single misogyny item. It is likely that our group was less familiar with Rap/Hip Hop music, so the lyrics were more shocking. Below is an excerpt from the song in which the lyrics portray vivid and vulgar imagery of a jilted male lover who feels his ex owes him for treating her well.

Said you wanna have my babies
I fucked you so good, you should pay me
Don't call me "baby" when you did me so wrong
(When you did me so wrong)
But I got over what you did already
Body for a body, I'm so petty
How many of your friends fit in my Rolls? (Can you fit in my Rolls?)
Bought you a new face, you should call me "Dad," baby
Hermès, but you dropped the bag, baby
Truth is, maybe one's just not enough

Said you love me, but I don't care
That I broke my hand on the same wall
That you told me that he fucked you on (Oh)
You think it's so easy fuckin' with my feelings
I got one comin' over and one right now (Uh)
(Post Malone & The Weeknd, 2021)

This song was performed by two male artists and, although a larger proportion of our samples were women, gender differences were quite small overall. However, our participants commonly listen to Rap/Hip Hop (SONA = 69% and Prolific = 52%), which may be why "One Right Now" was not rated higher. A potential explanation for the low misogyny ratings can be found in work by Boghrati and Berger (2023), who discovered that lyrics tend to strongly correlate with societal stereotypes, such that current public opinion may be reflected in today's popular lyrics. Thus, it may still be a prominent opinion that a woman owes a man for his attention, and that men have many other options if a particular woman leaves/cheats (i.e., wrecking his life). Therefore, when this trope is portrayed in music, red flags aren't waved, and misogyny isn't detected.

We also found that female participants rated the songs higher than men, suggesting that women perceived more evidence of misogyny on all six items and the composite score. However, the only statistically significant difference (.149 units higher for female participants) was on the Women are inferior to men outcome variable. This could be explained by social hierarchy theory, as women are subjected daily to gender discrimination

and are therefore treated as inferior to men in society. Thus, this social role makes women more sensitive to prejudiced content. We had originally hypothesized that women would find the lyrical content to be more misogynistic than men, so Hypothesis 1 was partially supported.

Although gender differences were not presented separately for each song in the descriptive statistics, a supplementary table is provided in Appendix D showing that female participants have slightly higher misogyny composite means than males on 30 of the 36 songs. Mean differences for those 30 songs ranged from 0.004 to 0.326 units, and the differences between genders were not as large as we anticipated. The song that divided the sexes most was "I Like You (A Happier Song)", with women (M = 0.826, SD = 0.665) finding it more misogynistic than men (M = 0.500, SD = 0.429), although the higher mean only came close to "*some minor evidence*". Participants may have been divided most on this song because it was sung by both a male (Post Malone) and female (Doja Cat) artist. Interestingly, this is the second Post Malone song we use as an example of clear misogyny. Participants may have been divided on the ratings for this song because of repeating messages presented by both the male and female artists. That is, the male artist incorporates some clearly sexist themes in his verse, suggesting he can "pull" a girl away from her boyfriend. Additionally, he calls other girls "hoes".

> [Verse 1: Post Malone]
> *Oh, girl, I know you only like it fancy (Fancy)*
> *So I pull up in that Maybach Candy*
> *Yeah, your boyfriend'll never understand me (Understand)*
> *'Cause I'm 'bout to pull his girl like a hammy, hammy (Wow)*
> *Let's take a lil' dip, lil' lady*
> *Hit PCH, 180*
> *Hey, I been thinkin' lately*
> *That I need someone to save me*
> *Now that I'm famous, I got hoes all around me*
> *But I need a good girl, I need someone to ground me*

So, please be true, don't fuck around with me
I need someone to share this heart with me
Fill you up, then run it back again (Run it back again)
(Post Malone & Doja Cat, 2022)

Further, the female artist's verse seems to validate the male artist's verse and take on masculine traits herself (i.e., saying she is also trying to "hit it"). Additionally, she appears to be fine with being put "on a leash". Thus, perhaps this verse from Doja Cat "excused" the misogyny from Post Malone's verse; thereby dividing the ratings from male and female participants.

[Verse 2: Doja Cat]
Let me know when you're free
'Cause I been tryna hit it all week, babe
Why you actin' all sweet?
I know that you want little ol' me
I get a little OD, but ain't shit new to a freak
Let me drop bands, put a jewel in ya teeth
He love the way I drip, turn that pool to the beach
And I coulda copped a Birkin but I cop Celine
Why we got the same taste for the finer things?
Brand new nigga with the same old team
Now he got me on a leash 'cause he said no strings
You know I'm cool with that
Stole the pussy, you ain't get sued for that (Get sued, sued)
Wonder what a nigga might do for that (Do, might do)
I could be your Chaka, where Rufus at? (Where?)
80 in the Benz when that roof go back, ayy
They don't wanna see us get too attached
I just got a feelin' that we might be friends for a long, long time
You don't mind and you know I like you for that
(Post Malone & Doja Cat, 2022)

Although not hypothesized, participants from the SONA sample perceived more evidence of misogyny in the song lyrics than did the participants from the Prolific sample. One obvious demographic variable distinguishing these samples was age, as SONA's university students ranged from 17-25 (M = 18.39, SD = 0.99) and Prolific's general adult sample ranged between 18-86 (M = 35.58, SD = 12.91). As Prolific had a wider distribution

of ages that went beyond the typical university student age, it may be the case that many Prolific participants were exposed to different injunctive norms or raised with distinct beliefs from SONA. Different generations are raised in varying cultural climates, so our Gen Z participants in the SONA sample may be slightly more sensitive to offensive content than older participants. Additionally, other demographics such as ethnic or country identification differed to some extent in the samples. The largest group within the SONA sample was Asian (37%) and the largest group within Prolific was European (50%), with 52% coming from the UK. However, these differences were not investigated further due to substantial missing data on that variable, so we don't know how a diverse range of cultures might interpret these lyrics. Therefore, future work could use focus groups with different ethnicities to investigate how music is differentially perceived.

Little support was found for a link between individual differences on the Ambivalent Sexism Inventory scores and ratings of misogyny in the song lyrics. One unexpected contrary finding, albeit with a small effect, was that the participants higher on Hostile sexism perceived more evidence of Sexual violence against women. This is an interesting finding, as one might expect an individual high in Hostile sexism to agree with similar ideas in the music, and therefore discount or be desensitized to misogyny. In this case, it is possible that participants with misogynistic beliefs were implementing confirmation bias by looking to find reinforcement of their views in the lyrics (e.g., "Women are usable because they are being described as "hoes"). Alternatively, male participants in particular may have been acting in a socially desirable way. That is, even though men may have been higher in Hostile sexism, they may have realized that sexual violence is not socially acceptable and reported more sexually violent statements.

There were no significant findings that correlated Benevolent sexism and misogyny, contrary to Hypothesis 2b. We had anticipated that high scores on Benevolent sexism would be associated with high ratings of misogyny in the lyrics, but this was not supported. Benevolent sexism is based in Right-Wing Authoritarianism beliefs (Sibley et al., 2007), meaning that women are protected as long as they adhere to their traditional gender roles. It is possible that participants who scored high on Benevolent sexism felt the women portrayed in the lyrics were not performing their proper roles as women and/or were not submitting to the male artist's authority. If this was the case, participants potentially believed the women in these songs were getting what they deserved, thereby justifying any misogyny.

In regard to the gender of the artists, we expected that lyrics from songs designated for male artists would have more evidence of misogyny (Betti et al., 2023). In addition, we felt that there would be an interaction between gender of the participant and gender of the artist, such that female participants would rate the lyrics from male artists as more offensive than lyrics from female artists (Hypothesis 3). This interaction was only weakly supported, as it occurred only in the Women wreck men's lives model. A potential reason for this interaction may simply be because women are more sensitive to men's criticisms due to the fact that the criticisms come from the opposite sex (and a potential attack on their intentions). More broadly, women wrecking men's lives is a stereotype that runs rampant throughout our culture, so women may be especially sensitized to those messages than perhaps even the other five outcome variables.

In the MLM analyses, it was possible to investigate the role of predictors that varied within individuals across songs. Although not hypothesized, when a participant encountered a song that they liked, they reported lower evidence of misogyny in the lyrics (i.e., lower perception of offensive/demeaning content, sexually violent content, instances of women

wrecking men's lives, statements about women using men, instances of women being inferior to men, and statements about women being usable). Therefore, perhaps to minimize a potential cognitive dissonance from liking misogynistic lyrics, participants dismissed the misogynistic themes especially if they liked other aspects of the songs (e.g., the artist).

The final piece we wish to highlight in this section is that another *Billboard* year-end chart was released after our data collection period ended. Incidentally, five songs in our study also charted on the year-end *Hot 100* chart for 2023 ("Bad Habit" by Steve Lacy, "I Like You (A Happier Song)" by Post Malone ft. Doja Cat, "Super Freaky Girl" by Nicki Minaj, "Unholy" by Sam Smith & Kim Petras, and "Wait For U" by Future ft. Drake & Tems), indicating that they had widespread appeal and made a significant cultural contribution across multiple years. Just looking at these songs, both SONA and Prolific reported that "Super Freaky Girl" *(*M_{SONA} = 1.03, *SD* = 0.68; $M_{Prolific}$ = 1.11, *SD* = 0.75) had the highest amount of misogyny (using composite scores). Yet, all five songs were similarly rated and hovered around "*some minor evidence*" of misogyny ("Unholy" (M_{SONA} = 1.03, *SD* = 0.63; $M_{Prolific}$ = 0.64, *SD* = 0.66), "Wait For U" (M_{SONA} = 0.92, *SD* =0.62; $M_{Prolific}$ = 0.68; *SD* = 0.57), "Bad Habit" (M_{SONA} = 0.73, *SD* = 0.57; $M_{Prolific}$ = 0.58, *SD* = 0.57), and "I Like You (A Happier Song)" (M_{SONA} = 0.71, *SD* = 0.62; $M_{Prolific}$ = 0.73, *SD* = 0.63).

4.2 Limitations

Our study had a few key limitations. The first was that our study, in a sense, used a completely artificial environment, such that listeners do not tend to thoroughly read through and analyze lyrics. Thus, the misogyny perceived in this work was due to diligent scrutiny rather than passive internalization. Originally, we had planned to use an experimental design manipulating the medium and including conditions in which participants would hear the song or hear the song and see the video. We deliberated about the value of improving the external

validity while potentially introducing confounding variables about the tone and appearance of the artists. In the end, we saw a need to start with a simpler design. Further, participants were only given scales to express their opinions, limiting the richness of our data. A potential modification to the study could provide participants with open-ended questions and/or text boxes so they can justify and express their viewpoints qualitatively. As it stands, we collected a limited range of quantitative answers.

The second limitation to this work was that we had six artists that were repeated in our song sample (Drake, Future, Post Malone, Doja Cat, Walker Hayes, and Lil Dunk), with Doja Cat representing most of our female artist sample. Thus, this introduced a bit of non-independence among some songs.

In regard to an adequate sample of stimuli, we had a good representation of songs with the 36 we used, but even more (i.e., 50 songs) would have helped to increase statistical power. With this additional number of songs, we might have been able to find a stronger effect of artist gender, and therefore, find stronger evidence for a participant gender by artist gender interaction. Relatedly, we only had a large enough sample to compare Rap and Pop songs on differences in misogyny. There were not enough songs from the other genres (R&B, Country, and Afrobeats) to be able to make the same comparisons in our MLM analyses, so we may be missing genre effects on these.

4.3 Implications and Future Directions

Ours is the first study of its kind to use a random factor design for a sample of songs (providing a stronger approach to make inferences to other songs) and to have created a composite score of misogyny based on previous content analysis studies about different manifestations of misogyny. Thus, our results allow us to conclude that there is at least some

level of awareness of the messaging found in music and provides a key jump off point for looking into how music can influence people.

Secondly, since we chose to use the most recent year-end chart (at the time), we now have a gauge for the amounts of misogynistic messaging that is consumed in the present day. We can gather that, since *Billboard* collected a list of the most popular songs, our sample of 36 are some of the most familiar and widely listened to songs. Thus, we can extrapolate our findings to the rest of the 2022 year-end chart.

Thirdly, a link between higher scores of Hostile sexism and higher ratings of misogyny was established, but only in the Sexual violence against women scale. However, this was of little significance and the effect was in the opposite hypothesized direction. Future work may choose to pivot focus from sexist beliefs to other facets of personality (i.e., the Dark Triad) to investigate potential relationships with misogyny.

Last, this project is a catalyst for readers to pause and critique popular media on potentially damaging messages. To be clear, our intent is not to promote censorship, but rather to spark conversation about media consumption. Individuals may reflect on what types of messages they absorb regularly and may choose to shift their listening habits to more positive music. Additionally, this critique could be taken a step further by entering the educational sphere. That is, it might be an important conversation for educators to have their students question and dissect the messaging found in popular music. This in turn could help promote conversations of diversity and inclusivity.

A potential follow up study could focus on measuring misogyny found in lyrics taken out of context. Perhaps participants can look at individual lines from popular songs and rate each on Adams and Fuller's (2006) six themes of misogyny. Perhaps these lines separated

from a whole song would evoke stronger reactions to discrimination than lyrics embedded into the context of the full lyric sheet.

Another future direction could involve measuring participants' reactions to lyrics presented as a different medium, such as poetry. In the current study, perhaps the fact that participants knew ours were lyrics (and not poetry) was a moderating factor, as poems are seen as having a more formal linguistic style than song lyrics (Astor, 2010). If participants are given the same songs but are told they are poems rather than lyrics, perhaps the ratings of misogyny will vary.

On a much broader scale, researchers should keep an eye on the future of artificial intelligence's (AI) integration into the music industry. What the industry has coined as "deepfake vocals" presents a unique challenge to the integrity of human-made music today, as AI-generated songs that clone artists' voices are being released to the public. For instance, in early 2023, a Drake and The Weeknd AI deepfake called "Heart on My Sleeve" was distributed and immediately went viral across social media (Coscarelli, 2023). The song racked up millions of streams before being taken down. This was only one instance of a changing musical landscape, as by the end of 2023, the industry was split in deciding how to deal with AI. Sony Music requested that 10,000 AI deepfake recordings be stripped from the internet while some artists released deepfakes of their own voices to stay ahead of AI's rapid evolution (Chow, 2023). Thus, as the world argues over the use of AI and the enforcement of potential regulations within music, deepfake music remains an issue with the potential for degrading lyrical messaging and the misrepresentation of artists.

4.5 Conclusion

Pop culture and society tend to mirror each other, so it is a safe assumption that any misogynistic views portrayed in music are also commonplace in society (even if they are

becoming less acceptable). Thus, this study attempted to find evidence for awareness of misogynistic themes in popular music. We did indeed discover that participants were aware of chauvinistic messaging, but this seemed to affect them less if they liked the lyrics. Hopefully though, this project encouraged them and the readers of this manuscript to thoughtfully consider what messages they consume on a regular basis and potentially what messages impressionable youth are also taking in. Perhaps with more of this awareness, we can continue to shift the narrative towards more inclusive language and beliefs that benefit everyone.

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Appendices

Appendix A: Initial Song Selection and Misogyny Scores

Songs selected for the study by three graduate students and a professor (mean score)

How much promotion, glamorization, support, humourization, justification, or normalization of oppressing women do you feel are in these lyrics? (0 = none, 1 = mild, 2 = moderate, 3 = severe):

1. Smokin Out The Window - Silk Sonic (3)
2. Big Energy - Latto (2.75)
3. Super Freaky Girl - Nicki Minaj (2.5)
4. Puffin On Zootiez - Future (2.5)
5. One Right Now - Post Malone & The Weeknd (2.5)
6. You Right - Doja Cat & The Weeknd (2.25)
7. I Like You (A Happier Song) - Post Malone ft. Doja Cat (2.25)
8. To The Moon! - JNR CHOI & Sam Tompkins (2)
9. What Happened To Virgil - Lil Durk ft. Gunna (2)
10. First Class - Jack Harlow (2)
11. Sweetest Pie - Megan Thee Stallion & Dua Lipa (1.75)
12. Pushin P - Gunna & Future ft. Young Thug (1.75)
13. Jimmy Cooks - Drake ft. 21 Savage (1.75)
14. Industry Baby - Lil Nas X & Jack Harlow (1.75)
15. Fancy Like - Walker Hayes (1.5)
16. Wait For U - Future ft. Drake & Tems (1.5)
17. Super Gremlin - Kodak Black (1.5)
18. Shivers - Ed Sheeran (1.5)
19. Need To Know - Doja Cat (1.25)
20. Woman - Doja Cat (1)
21. Abcdefu - GAYLE (1)
22. Broadway Girls - Lil Durk ft. Morgan Wallen (1)
23. Love Nwantiti (Ah Ah Ah) - Ckay (1)
24. Stay - The Kid LAROI & Justin Bieber (1)
25. Unholy - Sam Smith & Kim Petras (0.75)
26. Kiss Me More - Doja Cat ft. SZA (0.75)
27. Get Into It (Yuh) - Doja Cat (0.75)
28. Boyfriend - Dove Cameron (0.75)
29. Vegas - Doja Cat (0.75)
30. Essence - Wizkid ft. Justin Bieber & Tems (0.75)
31. AA - Walker Hayes (0.75)
32. Knife Talk - Drake ft. 21 Savage & Project Pat (0.75)
33. Bad Habit - Steve Lacy (0.75)
34. She's All I Wanna Be - Tate McRae (0.5)
35. I Hate U - SZA (0.5)
36. Wasted On You - Morgan Wallen (0.5)

Appendix B: Demographic Questionnaire

FOR BOTH SONA AND PROLIFIIC

How old are you? (Free-form box)

What gender do you identify as? 'Cisgender' means that your assigned sex at birth (e.g., female) matches your gender identity (e.g., woman). 'Transgender' means that your assigned sex at birth (e.g., male) does not match your gender identity (e.g., woman). (Multiple choice)

- Man (cisgender)
- Non-binary individual
- Transgender man
- Transgender woman
- Woman (cisgender)
- Prefer not to say
- Self-identify: (Free-form box)

How would you describe your sexual orientation? (Multiple choice)

- Asexual
- Bisexual
- Gay
- Lesbian
- Pansexual
- Queer
- Questioning
- Straight
- Prefer not to say
- If not listed above, please specify (Free-form box)

How would you rate your English proficiency? (Multiple choice)

- Basic
- Intermediate
- Fluent

How would you describe your own socioeconomic status? I consider myself to be… (Multiple choice)

- Lower class
- Working class
- Lower middle class
- Middle class
- Upper middle class
- Upper class

- Prefer not to say

How would you describe your ethnicity? Ethnicity refers to a shared cultural heritage that distinguishes one group of people from another including ancestry, a sense of history, language, religion, foods, and clothing (e.g., Japanese, Eastern European, Nigerian, Greek, Canadian). You may type in more than one ethnicity. (Multiple choice)

- African
- Asian
- Caribbean
- Central/South American
- European
- Indigenous
- North American
- Oceanian (e.g., Australia)
- Prefer not to say
- If not listed above, please specify (Free-form box)

FOR SONA ONLY

How would you describe the program(s) of study that you plan to pursue during your undergraduate studies (e.g., Psychology, Computer Science, Nursing, Music, Biochemistry, English). If you are not certain, indicate uncertain. (Multiple choice)

- Accounting
- Biochemistry
- Biology
- Business
- Chemistry
- Classical Studies
- Communications
- Computer Science
- Digital Humanities
- Education
- Engineering
- Film
- Fine Arts
- Gender/Women Studies
- Geography
- Health Sciences
- History
- Indigenous Studies
- Kinesiology
- Languages
- Linguistics

- Math
- Media
- Music
- Nursing
- Philosophy
- Physics
- Political Science
- Psychology
- Sociology
- Sports Management
- Theatre
- Visual Arts
- Uncertain
- Prefer not to say
- If not listed above, please specify (Free-form box)

FOR PROLIFIC ONLY

What country do you live in?

- Australia
- Canada
- United Kingdom
- United States
- Prefer not to say
- If not listed above, please specify (Free-form box)

FOR BOTH

What genres of music do you listen to? Check all that apply. (Multiple choice)

- Adult Contemporary
- Alternative
- Blues
- Classical
- Country
- Dance
- Disco
- Easy listening
- Electronic
- Folk
- Grunge
- Hip-hop
- Indie
- Industrial

- Jazz
- Latin
- Metal
- New Age
- New Wave
- Opera
- Pop
- Punk
- Reggae
- Rock
- Rhythm & Blues
- Ska
- Soul
- Techno
- Trance
- Trap
- World
- Prefer not to say
- If not listed above, please specify (Free-form box)

How many hours a week do you typically listen to music? (Free-form box)

When listening to music, do you typically focus on the lyrics of the songs? (Multiple choice)

- Always
- Often
- Sometimes
- Rarely
- Never

Overall, how much would you say you understood the lyrics in this study? I understood... (Multiple choice)

- All of the lyrics
- Most of the lyrics
- Some of the lyrics
- None of the lyrics

Appendix C: Perceptions of Misogyny in Lyrics Questionnaire (Adapted from themes of misogyny presented by Adams and Fuller, 2006)

Indicate the extent to which you perceive the lyrics to have clear evidence of misogyny in the six following questions (0 = not at all, 1 = some minor evidence, 2 = fairly clear evidence, 3 = absolutely clear evidence)

1. This song includes insulting, offensive or demeaning statements about women.
2. This song includes statements about sexual violence against women.
3. This song includes statements suggesting that women make men's lives difficult and/or wreck men's lives.
4. This song suggests that women use men for their own personal gain or enjoyment.
5. This song includes statements saying that women are inferior to or less human than men.
6. This song suggests that women are usable and discardable.

Indicate your feelings towards the lyrics.

1. How much do you like the lyrics in this song? (-2 = I strongly dislike them, -1 = I moderately dislike them, 0 = I don't dislike or like them, 1 = I moderately like them, 2 = I strongly like them)

Answer the following questions with a yes or no response.

1. Is this a song that you are familiar with? (Yes/No)
2. Are you familiar with the artist(s) of this song? (Yes/No)

Appendix D: Gender Breakdown by Song

Descriptives

	Recoded Gender	N	Missing	Mean	MDN	SD	Min	Max
Smokin out the window	man	54	97	1.195	1.167	0.427	0.167	2.500
	woman	110	229	1.450	1.500	0.573	0.000	2.667
	other	6	7	1.111	1.250	0.672	0.167	1.833
Big Energy	man	54	97	1.037	1.000	0.668	0.000	3.000
	woman	112	227	0.975	1.000	0.619	0.000	2.833
	other	3	10	0.944	1.000	0.419	0.500	1.333
Super Freaky Girl	man	49	102	0.983	0.833	0.771	0.000	2.833
	woman	117	222	1.084	1.167	0.656	0.000	3.000
	other	6	7	1.294	0.800	1.106	0.333	3.000
Puffin On Zootiez	man	45	106	1.089	1.167	0.671	0.000	2.333
	woman	117	222	1.325	1.333	0.638	0.000	2.833
	other	4	9	1.208	0.750	1.228	0.333	3.000
One Right Now	man	49	102	1.466	1.500	0.712	0.000	3.000
	woman	112	227	1.613	1.667	0.745	0.000	3.000
	other	3	10	0.944	1.333	0.822	0.000	1.500
You Right	man	47	104	0.775	0.667	0.506	0.000	2.167
	woman	118	221	0.894	0.833	0.551	0.000	2.333
	other	4	9	0.583	0.500	0.553	0.000	1.333
I Like You (A Happier Song)	man	45	106	0.500	0.500	0.429	0.000	1.833
	woman	111	228	0.826	0.833	0.665	0.000	2.667
	other	5	8	0.300	0.167	0.321	0.000	0.833
To The Moon!	man	53	98	0.952	0.833	0.746	0.000	3.000
	woman	109	230	1.117	1.167	0.648	0.000	3.000
	other	3	10	0.389	0.500	0.347	0.000	0.667
What Happened To Virgil	man	47	104	1.011	1.000	0.706	0.000	2.167
	woman	117	222	1.248	1.167	0.725	0.000	3.000
	other	4	9	0.792	0.667	0.685	0.167	1.667
First Class	man	65	86	0.491	0.333	0.521	0.000	2.000
	woman	104	235	0.641	0.500	0.590	0.000	2.167
	other	2	11	0.500	0.500	0.236	0.333	0.667
Sweetest Pie	man	40	111	0.642	0.500	0.627	0.000	2.500
	woman	125	214	0.833	0.800	0.576	0.000	2.200
	other	4	9	1.250	0.750	1.175	0.500	3.000
Pushin P	man	52	99	1.106	1.000	0.608	0.000	2.333
	woman	102	237	1.372	1.333	0.671	0.000	2.833

Descriptives

	Recoded Gender	N	Missing	Mean	MDN	SD	Min	Max
	other	8	5	0.771	0.667	0.972	0.000	3.000
Jimmy Cooks	man	50	101	0.933	0.833	0.654	0.000	2.333
	woman	111	228	1.184	1.167	0.747	0.000	3.000
	other	7	6	1.286	1.500	1.189	0.000	3.000
Industry Baby	man	48	103	0.813	0.667	0.664	0.000	3.000
	woman	117	222	0.871	0.833	0.648	0.000	2.833
	other	4	9	0.708	0.750	0.551	0.000	1.333
Fancy Like	man	45	106	0.533	0.167	0.728	0.000	3.000
	woman	120	219	0.619	0.333	0.704	0.000	3.000
	other	6	7	0.944	0.750	1.119	0.000	3.000
Wait For U	man	46	105	0.710	0.750	0.566	0.000	2.167
	woman	109	230	0.896	0.833	0.621	0.000	2.833
	other	5	8	0.367	0.333	0.274	0.167	0.833
Super Gremlin	man	49	102	0.608	0.333	0.715	0.000	2.667
	woman	110	229	0.839	0.667	0.753	0.000	3.000
	other	4	9	0.667	0.250	0.892	0.167	2.000
Shivers	man	46	105	0.295	0.000	0.480	0.000	1.833
	woman	119	220	0.216	0.000	0.336	0.000	1.500
	other	1	12	0.000	0.000	NaN	0.000	0.000
Need To Know	man	58	93	0.888	0.667	0.617	0.000	2.333
	woman	109	230	0.959	0.833	0.629	0.000	2.667
	other	4	9	0.625	0.667	0.250	0.333	0.833
Woman	man	57	94	0.558	0.500	0.509	0.000	2.500
	woman	102	237	0.581	0.333	0.650	0.000	2.667
	other	2	11	0.417	0.417	0.589	0.000	0.833
abcdefu	man	58	93	0.644	0.500	0.507	0.000	2.167
	woman	109	230	0.639	0.500	0.585	0.000	2.500
	other	6	7	0.583	0.333	0.689	0.000	1.667
Broadway Girls	man	60	91	1.072	1.167	0.636	0.000	3.000
	woman	106	233	1.147	1.167	0.599	0.000	2.833
	other	4	9	1.292	1.000	1.235	0.167	3.000
Love Nwantiti (Ah Ah Ah)	man	48	103	0.347	0.167	0.396	0.000	1.500
	woman	121	218	0.343	0.167	0.429	0.000	1.833
	other	4	9	0.250	0.167	0.289	0.000	0.667
Stay	man	57	94	0.346	0.167	0.461	0.000	2.000
	woman	108	231	0.366	0.167	0.515	0.000	3.000

Descriptives

	Recoded Gender	N	Missing	Mean	MDN	SD	Min	Max
	other	5	8	0.133	0.000	0.217	0.000	0.500
Unholy	man	48	103	0.790	0.667	0.694	0.000	3.000
	woman	116	223	0.929	0.917	0.656	0.000	2.667
	other	3	10	0.389	0.500	0.347	0.000	0.667
Kiss Me More	man	51	100	0.621	0.667	0.507	0.000	2.167
	woman	107	232	0.609	0.500	0.573	0.000	2.167
	other	5	8	0.200	0.167	0.139	0.000	0.333
Get Into It (Yuh)	man	42	109	0.715	0.667	0.565	0.000	2.167
	woman	122	217	0.837	0.667	0.680	0.000	3.000
	other	4	9	1.000	0.417	1.340	0.167	3.000
Boyfriend	man	49	102	0.374	0.167	0.481	0.000	2.000
	woman	113	226	0.279	0.167	0.413	0.000	2.333
	other	3	10	0.611	0.333	0.788	0.000	1.500
Vegas	man	51	100	0.660	0.667	0.569	0.000	3.000
	woman	111	228	0.674	0.500	0.582	0.000	3.000
	other	7	6	0.810	0.167	1.132	0.000	3.000
Essence	man	55	96	0.449	0.200	0.585	0.000	3.000
	woman	107	232	0.461	0.333	0.504	0.000	2.000
	other	7	6	0.190	0.167	0.202	0.000	0.500
AA	man	45	106	0.411	0.167	0.487	0.000	1.833
	woman	118	221	0.660	0.500	0.651	0.000	2.833
	other	4	9	0.083	0.083	0.096	0.000	0.167
Knife Talk	man	51	100	0.778	0.667	0.692	0.000	3.000
	woman	111	228	0.988	0.833	0.764	0.000	3.000
	other	8	5	0.563	0.583	0.519	0.000	1.667
Bad Habit	man	47	104	0.561	0.333	0.539	0.000	2.333
	woman	112	227	0.725	0.500	0.592	0.000	2.500
	other	4	9	0.292	0.333	0.250	0.000	0.500
She's All I Wanna Be	man	49	102	0.425	0.333	0.417	0.000	1.667
	woman	117	222	0.537	0.500	0.497	0.000	2.833
	other	2	11	0.417	0.417	0.589	0.000	0.833
I Hate U	man	49	102	0.819	0.833	0.615	0.000	2.167
	woman	121	218	0.747	0.667	0.596	0.000	2.667
	other	1	12	1.667	1.667	NaN	1.667	1.667
Wasted On You	man	50	101	0.611	0.583	0.500	0.000	1.833
	woman	111	228	0.746	0.667	0.573	0.000	2.500
	other	3	10	0.444	0.667	0.385	0.000	0.667

Descriptives

	Recoded Gender	N	Missing	Mean	MDN	SD	Min	Max
tot_song	man	150	1	0.731	0.656	0.416	0.056	1.847
	woman	338	1	0.838	0.778	0.418	0.056	2.236
	other	13	0	0.682	0.697	0.506	0.097	2.167

Appendix E: Recruitment Materials

For SONA
Study Name: Investigating Perceptions of Misogyny in Popular Music Lyrics

Brief Abstract: Using the Year-End *Billboard Hot 100* chart, participants will read lyrics from the most popular songs of 2022 and rate the content on themes of misogyny.

Detailed Description
You are invited to participate in an online study investigating perceptions of how women are portrayed in popular songs. Participants will read through the lyrics of 12 songs from the 2022 *Billboard Hot 100* Year-End chart and will be asked to rate each song on various themes of sexism/discrimination. The online survey also includes a questionnaire on sexism and a few demographic items. Please be advised that some lyrics in some of the songs used in this study may contain explicit sexual or violent content that may be offensive to some individuals. Your discretion is advised in deciding if you might find the topic of this study too offensive to participate in this study.

If you have questions about this study, please contact either:

Michelle Praymayer, Master's Thesis Student, Department of Psychology, Western University

Paul Tremblay, PhD., Principal Investigator, Department of Psychology, Western University

Eligibility Requirements
The requirements will be an age 17 or older, an ability to understand English fluently (in order to understand the nuances of music lyrics) and enrollment in a psychology course that uses the Psychology Research Participant pool at Western University.

Duration (Minutes)
30

Credits
0.5

For Prolific
Study Name: Investigating Perceptions of Misogyny in Popular Music Lyrics

Brief Abstract: Using the Year-End *Billboard Hot 100* chart, participants will read lyrics from the most popular songs of 2022 and rate the content on themes of misogyny.

Detailed Description
You are invited to participate in an online study investigating perceptions of how women are portrayed in popular songs. Participants will read through the lyrics of 12 songs from the 2022 *Billboard Hot 100* Year-End chart and will be asked to rate each song on various themes of sexism/discrimination. The online survey also includes a questionnaire on sexism and a few demographic items. Please be advised that some lyrics in some of the songs used in this study may contain explicit sexual or violent content that may be offensive to some individuals. Your discretion is advised in deciding if you might find the topic of this study too offensive to participate in this study.

If you have questions about this study, please contact either:

Michelle Praymayer, Master's Thesis Student, Department of Psychology, Western University

Paul Tremblay, PhD., Principal Investigator, Department of Psychology, Western University

Eligibility Requirements
The requirements will be an age 18 or older; residing in Canada, the United States of America, the United Kingdom, or Australia; and an ability to understand English fluently (in order to understand the nuances of music lyrics).

Duration (Minutes)
35

Compensation
£5.25 (approximately $6.52 USD), a rate of £9.00 ($11.18 USD) per hour

Appendix F: Letter of Information and Consent

For SONA

Letter of Information & Consent

Project Title: Investigating Perceptions of Misogyny in Popular Music Lyrics
Principal Investigator: Dr. Paul Tremblay, Department of Psychology
Additional Researcher: Michelle Praymayer, Graduate Thesis student

You are invited to participate in an online study investigating perceptions of how women are portrayed in popular music, using top songs from the 2022 *Billboard Hot 100* Year-End chart. This project is conducted by Michelle Praymayer as part of her graduate Master's thesis and her supervisor, Dr. Paul Tremblay, in the department of Psychology. The purpose of this letter is to provide you information to make an informed decision regarding participation in this research.

Study Information: The objective of this study is to investigate individual differences in ratings of misogynistic content found in the lyrics of popular songs. This investigation will help us understand how strongly people's perceptions are influenced by properties of the songs as well as their own individual differences. If you consent to participate, you will be presented with the music lyrics of 12 songs and asked to rate misogynistic content such as the level of sex-related derogatory statements about women. The online study will also include a questionnaire on sexism and the entire survey will take approximately 30 minutes.

Potential Risks and Resource Information: Please be advised that some lyrics in some of the songs used in this study may contain explicit sexual or violent content that may be offensive to some individuals. Your discretion is advised in deciding if you might find the topic of this study too offensive to participate in this study. If you do decide to participate, you are not compelled to read the entire lyrics for any song that lead to any discomfort or unpleasant feelings.
If you feel distressed at any point during the study, some available on-campus services are listed here: Student Development Services is available or Student Health Services. If you feel you need academic support, the Student Success Centre is available, and Peer Support Network is available.

Benefits to Participation: You will not benefit directly from this research. However, your participation in this study will provide valuable information regarding which songs people tend to rate as containing the strongest elements of misogyny and what those songs have in common. In addition, this research will inform us about the extent to which people disagree about the presence of misogyny in some songs and properties of the songs that may lead to that ambiguity. Ultimately, this research will help raise awareness about particular elements in music lyrics that people find most offensive.

Compensation: Participants enrolled in the introductory psychology course will be rewarded with a 0.5 research credit toward this course. For students in other non-introductory psychology courses, you will be compensated as indicated on your relevant course outline.

Your Rights as a Participant: Your participation in this study is voluntary. You may decide not to participate in this study. Even if you consent to participate, you have the right to not answer individual questions or to withdraw from the study at any time. If you choose not to participate or to leave the study at any time it will have no effect on your academic standing. You do not waive any legal right by consenting to this study. If you decide to withdraw from the study, you may do so at any time by exiting the survey window. Any data collected prior to exiting the survey will be discarded from analyses. Due to the anonymous nature of your data, once your survey responses have been submitted, the researchers will be unable to withdraw your data.

Confidentiality: We will be collecting demographic information such as age, gender identity, sexual orientation, English proficiency, socioeconomic status, ethnicity, program of study, music genres you listen to, hours a week you listen to music, how much you focus on the lyrics of music, and if you understood the lyrics in this study. These responses will be used in our analyses to detect patterns of answers and to find potential correlations between the lyrics and your responses. All information that we obtain from you is confidential. Your responses to our questionnaires will be collected anonymously through a third party, secure online survey platform called Qualtrics. Qualtrics uses encryption technology and restricted access authorizations to protect the privacy and security of all data collected and retained, including personal information. In addition, Western's Qualtrics server is in Ireland. Please refer to Qualtrics' Privacy Policy (https://www.qualtrics.com/privacystatement/) for more details about Qualtrics' information management practices. The data will then be exported from Qualtrics and securely stored on Western University's server. Because your personal information (name and student identification number) appears on a separate platform (SONA), your responses cannot be tied to your identity. The collected data will be stored electronically in password-protected, encrypted files for 7 years, per Western University guidelines. While we do our best to protect your information, there is no guarantee that we will be able to do so.

Usually, it is only the research staff that will have access to the data. However, representatives of Western University's Non-Medical Research Ethics Board may require access to your study-related records to monitor the conduct of the research. In addition, in the interest of promoting research transparency and facilitating independent scrutiny of our data, anonymized data from the study, excluding all demographics except age and gender, and containing no information that could identify you, may be uploaded onto the lab's Open Science Framework (OSF; https://osf.io) site so that data may be inspected and analyzed by other researchers.

Contacts for Further Information: If you have any questions about your rights as a research participant or the conduct of this study, you may contact The Office of Human Research Ethics. You may also choose to direct any questions about this research or to address any concerns about your participation to Dr. Paul Tremblay at Western University in London, Ontario.

This letter is yours to keep for future reference. You can download it into a new window here.

Consent. Before beginning the survey online, you will be asked to indicate your acknowledgement of having read this letter of information and your consent to participate by clicking yes or no, below this letter. By clicking 'yes' below, you indicate that you have read the letter of information, and voluntarily consent to participate in this study.

Do you consent to participate in this survey?

○ Yes I consent
○ No I do not consent

For Prolific

Letter of Information & Consent

Project Title: Investigating Perceptions of Misogyny in Popular Music Lyrics
Principal Investigator: Dr. Paul Tremblay, Department of Psychology
Additional Researcher: Michelle Praymayer, Graduate Thesis student

You are invited to participate in an online study investigating perceptions of how women are portrayed in popular music, using top songs from the 2022 *Billboard Hot 100* Year-End chart. This project is conducted by Michelle Praymayer as part of her graduate Master's thesis and her supervisor, Dr. Paul Tremblay, in the department of Psychology at Western University. The purpose of this letter is to provide you information to make an informed decision regarding participation in this research.

Study Information: The objective of this study is to investigate individual differences in ratings of misogynistic content found in the lyrics of popular songs. This investigation will help us understand how strongly people's perceptions are influenced by properties of the songs as well as their own individual differences. If you consent to participate, you will be presented with the music lyrics of 12 songs and asked to rate misogynistic content such as the level of sex-related derogatory statements about women. The online study will also include a questionnaire on sexism and the entire survey will take approximately 35 minutes.

Potential Risks and Resource Information: Please be advised that some lyrics in some of the songs used in this study may contain explicit sexual or violent content that may be offensive to some individuals. Your discretion is advised in deciding if you might find the topic of this study too offensive to participate in this study. If you do decide to participate, you are not compelled to read the entire lyrics for any song that lead to any discomfort or unpleasant feelings.

If you reside in the United States:

- You can call the suicide and crisis lifeline anytime by dialing 988
- Text HOME to 741741 to connect with a volunteer Crisis Counselor 24/7 (https://www.crisistextline.org/)

If you reside in Canada:

- You can visit suicide.ca or you can contact Talk Suicide Canada 24/7 by phone at 1-833-456-4566 or by text at 45645, or for residents of Quebec, call 1-866-277-3553.
- For phone counselling available 24/7 call 1-866-585-0445

If you reside in the United Kingdom:

- You can obtain phone, text, and email support between 4pm and 10pm through https://www.sane.org.uk/how-we-help/emotional-support
- You can Contact Samaritans any time on 116 123. They offer a listening service (https://www.samaritans.org/how-we-can-help/contact-samaritan/talk-us-phone/).
- SHOUT offers text support any time, text SHOUT to 85258 (https://giveusashout.org/get-help/how-shout-works/)

If you reside in Australia:

- You can call lifeline Australia 24/7 for crisis support at 13 11 14 (https://www.lifeline.org.au/131114/)
- You can text (SMS) 0477 13 11 14 or receive online chat support at https://www.lifeline.org.au/crisis-chat/

Benefits to Participation: You will not benefit directly from this research. However, your participation in this study will provide valuable information regarding which songs people tend to rate as containing the strongest elements of misogyny and what those songs have in common. In addition, this research will inform us about the extent to which people disagree about the presence of misogyny in some songs and properties of the songs that may lead to that ambiguity. Ultimately, this research will help raise awareness about particular elements in music lyrics that people find most offensive.

Compensation: Participants will be rewarded with £5.25 (approximately $6.52 USD) for their participation, a rate of £9.00 ($11.18 USD) per hour, which will be added to your Prolific profile upon providing consent at the beginning of the study.

To receive compensation for your participation in the study you must submit the survey; however you are not compelled to respond to any items in the survey. Due to the anonymous nature of your data, once your survey responses have been submitted, the researchers will be unable to withdraw your data.

Your Rights as a Participant: Your participation in this study is voluntary. You may decide not to participate in this study. Even if you consent to participate, you have the right to not answer individual questions or to withdraw from the study at any time. To receive compensation for your participation in the study you must submit the survey, however you are not compelled to respond to any items in the survey that you do not wish to answer. Due to the anonymous nature of your data, once your survey responses have been submitted, the researchers will be unable to withdraw your data.

Confidentiality: We will be collecting demographic information such as age, gender identity, sexual orientation, English proficiency, socioeconomic status, ethnicity, country of residence, music genres you listen to, hours a week you listen to music, how much you focus on the lyrics of music, and if you understood the lyrics in this study. These responses will be used in our analyses to detect patterns of answers and to find potential correlations between the lyrics and your responses. All information that we obtain from you is confidential. Your responses to our questionnaires will be collected anonymously through a third party, secure online survey platform called Qualtrics. Qualtrics uses encryption technology and restricted access authorizations to protect the privacy and security of all data collected and retained, including personal information. In addition, Western's Qualtrics server is in Ireland. Please refer to Qualtrics' Privacy Policy (https://www.qualtrics.com/privacystatement/) for more details about Qualtrics' information management practices. The data will then be exported from Qualtrics and securely stored on Western University's server.

Usually, it is only the research staff that will have access to the data. However, representatives of Western University's Non-Medical Research Ethics Board may require

access to your study-related records to monitor the conduct of the research. In addition, in the interest of promoting research transparency and facilitating independent scrutiny of our data, anonymized data from the study, excluding all demographics except age and gender, and containing no information that could identify you, may be uploaded onto the lab's Open Science Framework (OSF; https://osf.io) site so that data may be inspected and analyzed by other researchers.

Contacts for Further Information: If you have any questions about your rights as a research participant or the conduct of this study, you may contact The Office of Human Research Ethics. You may also choose to direct any questions about this research or to address any concerns about your participation to Dr. Paul Tremblay at Western University in London, Ontario.

This letter is yours to keep for future reference. You can download it into a new window here.

Consent. Before beginning the survey online, you will be asked to indicate your acknowledgement of having read this letter of information and your consent to participate by clicking yes or no, below this letter. By clicking 'yes' below, you indicate that you have read the letter of information, and voluntarily consent to participate in this study.

Do you consent to participate in this survey?

○ Yes I consent
○ No I do not consent

Appendix G: Debrief Letter

For SONA

Debrief

Project Title: Investigating Perceptions of Misogyny in Popular Music Lyrics

Principal Investigator: Dr. Paul Tremblay, Department of Psychology at Western University
Co-investigator: Michelle Praymayer, Graduate Thesis student at Western University

Thank you for your participation in our study. The objective of this study is to investigate individual differences in ratings of misogynistic content found in the lyrics of popular songs. This investigation will help us understand how strongly people's perceptions are influenced by properties of the songs as well as their own individual differences including their gender and their views on sexism.

The prevalence of misogyny and sexual objectification of women run rampant in North American media, namely in music. Research has confirmed an abundance of misogynistic themes in rap, rock, hip-hop, R&B, country, adult contemporary, and metal songs over the course of decades worth of music (e.g., Weitzer & Kubrin, 2009; Flynn et al., 2016). Most themes surround gendered power differences and the sexual objectification, abuse, violence, and distrust of women (Adams & Fuller, 2006). We also know that misogyny is associated with negative mental health outcomes such as depression, lower self-esteem, and body dissatisfaction (APA, 2007). Previous work has focused on the priming effects of sexually explicit media content on participant attitudes towards women (e.g., Karsay et al., 2018). However, to our knowledge, no study has investigated participants' perceptions of how much misogyny they perceive in music lyrics of several popular songs.

Our general aim will be to investigate the extent to which misogynistic perceptions of each song are due to the song itself (i.e., some songs contain more misogynistic content than others), individual characteristics of the participants (i.e., gender, dispositional sexism) and the statistical interactions between those hypothesized contributing factors.

As part of this aim, we will measure prevalence of responses on rating scales such as this song includes insulting, offensive, or demeaning statements about women" (not at all, some minor evidence, fairly clear evidence, absolutely clear evidence). Three main hypotheses that we will test are as follows.

(1) Women will find the content to be more misogynistic than men, especially when the artists are male. This is based on previous work which found that men did not find the lyrics to be as misogynistic as did women, and men were more likely than women to sexually objectify women and be more amenable to rape myths and gender stereotypes after viewing sexualized content (Kistler & Lee, 2009).

(2) High scores on the Ambivalent Sexism Inventory (Glick & Fiske, 1996) will predict low ratings of misogyny in the lyrics. This is based on previous work by Hyatt and colleagues (2017) who discovered that when provoked with misogynistic lyrics, male participants who scored high on hostile sexism were aggressive towards women more often, for longer periods, and at higher intensities. In that these men had low opinions of women and were willing to harm them, it is not a far reach to propose that these men would likely not rate the misogynistic lyrics in our study as offensive.

(3) There will be a participant gender-by-artist(s) gender interaction. Specifically, we hypothesize that women should rate the lyrical messages from male artists as most offensive than lyrics from female artists (exploratory).

If you are interested in this topic, we have listed below some relevant references.

Adams, T. M., & Fuller, D. B. (2006). The words have changed but the ideology remains the same: Misogynistic lyrics in rap music. *Journal of Black Studies, 36*(6), 938-957.

Flynn, M. A., Craig, C. M., Anderson, C. N., Holody, K. J. (2016). Objectification in popular music lyrics: An examination of gender and genre differences. *Sex Roles: A Journal of Research, 75*(3-4), 164-176.

Glick, P., & Fiske, S. T. (1996). The ambivalent sexism inventory: Differentiating hostile and benevolent sexism. *Journal of Personality and Social Psychology, 70*(3), 491-512. https://doi.org/10.1037/0022-3514.70.3.491

Hyatt, C.S., Berke, D.S., Miller, J.D., & Zeichner, A. (2017). Do beliefs about gender roles moderate the relationship between exposure to misogynistic song lyrics and men's female-directed aggression? *Aggressive Behavior, 43*(2), 123-132. DOI: 10.1002/ab.21668

Karsay, K., Matthes, J., Platzer, P., & Plinke, M. (2018). Adopting the objectifying gaze: Exposure to sexually objectifying music videos and subsequent gazing behavior. *Media Psychology, 21*(1), 27–49.

Kistler, M. E., & Lee, M. J. (2009). Does exposure to sexual Hip-Hop music videos influence the sexual attitudes of college students? *Mass Communication and Society, 13*(1), 67–86. https://doi.org/10.1080/15205430902865336

Weitzer, R., & Kubrin, C. E. (2009). Misogyny in rap music: A content analysis of prevalence and meanings. *Men and Masculinities, 12*(1), 3-29.

If you have any questions about this research study, please contact Dr. Paul Tremblay, Department of Psychology, Western University.

If you have any questions about your rights as a research participant or the conduct of this study, you may contact The Office of Human Research Ethics.

If you or someone you know is experiencing distress, please contact your local mental health services. For more information about mental health services on campus, please visit: https://www.uwo.ca/health//psych/index.html

Additional References

American Psychological Association's Task Force on the Sexualization of Girls. (2007). *Report of the APA task force on the sexualization of girls*. American Psychological Association. http://www.apa.org/pi/women/programs/girls/report-full.pdf

Calogero, R. M. (2012). Objectification theory, self-objectification, and body image. *Encyclopedia of Body Image and Human Appearance, 2*, 574-580.

Fredrickson, B. L. & Roberts, T-A. (1997). Objectification theory: Toward understanding women's lived experiences and mental health risks. *Psychology of Women Quarterly*, *21*(2), 173-206.

For Prolific

Debrief

Project Title: Investigating Perceptions of Misogyny in Popular Music Lyrics

Principal Investigator: Dr. Paul Tremblay, Department of Psychology at Western University
Co-investigator: Michelle Praymayer, Graduate Thesis student at Western University

Thank you for your participation in our study. The objective of this study is to investigate individual differences in ratings of misogynistic content found in the lyrics of popular songs. This investigation will help us understand how strongly people's perceptions are influenced by properties of the songs as well as their own individual differences including their gender and their views on sexism.

The prevalence of misogyny and sexual objectification of women run rampant in North American media, namely in music. Research has confirmed an abundance of misogynistic themes in rap, rock, hip-hop, R&B, country, adult contemporary, and metal songs over the course of decades worth of music (e.g., Weitzer & Kubrin, 2009; Flynn et al., 2016). Most themes surround gendered power differences and the sexual objectification, abuse, violence, and distrust of women (Adams & Fuller, 2006). However, to our knowledge, no study has investigated participants' perceptions of the extent of misogyny they perceive in music lyrics of several popular songs.

Our general aim will be to investigate the extent to which misogynistic perceptions of each song are due to the song itself (i.e., some songs contain more misogynistic content than others), individual characteristics of the participants (i.e., gender, dispositional sexism) and the combination of those hypothesized contributing factors. Three main hypotheses that we will test are as follows.

(1) Women will find the content to be more misogynistic than men, especially when the artists are male. This is based on previous work which found that men did not find the lyrics to be as misogynistic as did women, and men were more likely than women to sexually objectify women and be more amenable to rape myths and gender stereotypes after viewing sexualized content (Kistler & Lee, 2009).

(2) High scores on the Ambivalent Sexism Inventory (Glick & Fiske, 1996) will predict low ratings of misogyny in the lyrics. This is based on previous work by Hyatt and colleagues (2017) who discovered that when provoked with misogynistic lyrics, male participants who scored high on hostile sexism were aggressive towards women more often, for longer periods, and at higher intensities.

(3) We will explore the hypothesis that women will rate the lyrics from male artist songs as more offensive than those from female artists songs.

References

Adams, T. M., & Fuller, D. B. (2006). The words have changed but the ideology remains the same: Misogynistic lyrics in rap music. *Journal of Black Studies, 36*(6), 938-957.

American Psychological Association's Task Force on the Sexualization of Girls. (2007). *Report of the APA task force on the sexualization of girls*. American Psychological Association. http://www.apa.org/pi/women/programs/girls/report-full.pdf

Calogero, R. M. (2012). Objectification theory, self-objectification, and body image. *Encyclopedia of Body Image and Human Appearance, 2*, 574-580.

Flynn, M. A., Craig, C. M., Anderson, C. N., Holody, K. J. (2016). Objectification in popular music lyrics: An examination of gender and genre differences. *Sex Roles: A Journal of Research, 75*(3-4), 164-176.

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Glick, P., & Fiske, S. T. (1996). The ambivalent sexism inventory: Differentiating hostile and benevolent sexism. *Journal of Personality and Social Psychology, 70*(3), 491-512. https://doi.org/10.1037/0022-3514.70.3.491

Hyatt, C.S., Berke, D.S., Miller, J.D., & Zeichner, A. (2017). Do beliefs about gender roles moderate the relationship between exposure to misogynistic song lyrics and men's female-directed aggression? *Aggressive Behavior, 43*(2), 123-132. DOI: 10.1002/ab.21668

Kistler, M. E., & Lee, M. J. (2009). Does exposure to sexual Hip-Hop music videos influence the sexual attitudes of college students? *Mass Communication and Society, 13*(1), 67–86. https://doi.org/10.1080/15205430902865336

Weitzer, R., & Kubrin, C. E. (2009). Misogyny in rap music: A content analysis of prevalence and meanings. *Men and Masculinities, 12*(1), 3-29.

If you have any questions about this research study, please contact Dr. Paul Tremblay, Department of Psychology, Western University.

If you have any questions about your rights as a research participant or the conduct of this study, you may contact The Office of Human Research Ethics, Western University.

If you or someone you know is experiencing distress, please contact your local mental health services.

If you reside in the United States:

- You can call the suicide and crisis lifeline anytime by dialing 988
- Text HOME to 741741 to connect with a volunteer Crisis Counselor 24/7 (https://www.crisistextline.org/)

If you reside in Canada:

- You can visit suicide.ca or you can contact Talk Suicide Canada 24/7 by phone at 1-833-456-4566 or by text at 45645, or for residents of Quebec, call 1-866-277-3553.
- For phone counselling available 24/7 call 1-866-585-0445

If you reside in the United Kingdom:

- You can obtain phone, text, and email support between 4pm and 10pm through https://www.sane.org.uk/how-we-help/emotional-support
- You can Contact Samaritans any time on 116 123. They offer a listening service (https://www.samaritans.org/how-we-can-help/contact-samaritan/talk-us-phone/).
- SHOUT offers text support any time, text SHOUT to 85258 (https://giveusashout.org/get-help/how-shout-works/)

If you reside in Australia:

- You can call lifeline Australia 24/7 for crisis support at 13 11 14 (https://www.lifeline.org.au/131114/)
- You can text (SMS) 0477 13 11 14 or receive online chat support at https://www.lifeline.org.au/crisis-chat/

Appendix H: Western Ethics Board Approval Letter

Western Research

Date: 1 November 2023

To: Professor Paul F. Tremblay

Project ID: 122938

Study Title: Investigating Perceptions of Misogyny in Popular Music Lyrics

Short Title: Investigating Perceptions of Misogyny in Popular Music Lyrics

Application Type: NMREB Initial Application

Review Type: Delegated

Full Board Reporting Date: 01/Dec/2023

Date Approval Issued: 01/Nov/2023 15:20

REB Approval Expiry Date: 01/Nov/2024

Dear Professor Paul F. Tremblay,

The Western University Non-Medical Research Ethics Board (NMREB) has reviewed and approved the WREM application form for the above mentioned study, as of the date noted above. NMREB approval for this study remains valid until the expiry date noted above, conditional to timely submission and acceptance of NMREB Continuing Ethics Review.

This research study is to be conducted by the investigator noted above. **All other required institutional approvals and mandated training must also be obtained prior to the conduct of the study.**

Documents Approved:

Document Name	Document Type	Document Date	Document Version
SONA recruitment_final	Recruitment Materials		
Prolific recruitment_final	Recruitment Materials		
Qualtrics Survey - SONA	Online Survey		2
Qualtrics Survey - Prolific	Online Survey		2
Debrief letter SONA_final	Debriefing document		2
Debrief letter Prolific_final	Debriefing document		2
Letter of informed consent SONA_final	Implied Consent/Assent		2
Letter of informed consent Prolific_final	Implied Consent/Assent		2

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario. Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB. The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.

Please do not hesitate to contact us if you have any questions.

Sincerely,

Dr. Trevor Bieber, Research Ethics Officer on behalf of Dr. Isha DeCoito, NMREB Chair

Note: This correspondence includes an electronic signature (validation and approval via an online system that is compliant with all regulations).

Curriculum Vitae

Name:	Michelle Schwier
Post-secondary Education and Degrees:	University of Victoria / Brock University St. Catharines, Ontario, Canada 2018-2022 B.A. Honours Psychology Western University London, Ontario, Canada 2022-2024 M.Sc. Psychology
Related Work Experience	Teaching Assistant Western University 2022-2024