The effects of reading song lyrics on prosocial

and aggressive behaviour, and on homophobic attitudes

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**Declaration**

Declaration

'I declare that this thesis that I have submitted to Dublin Business School for the award of BA (Hons) Psychology is the result of my own investigations, except where otherwise stated, where it is clearly acknowledged by references. Furthermore, this work has not been submitted for any other degree.'

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Abstract

The study investigated the effects of reading prosocial and aggressive song lyrics on prosocial behaviour, aggressive behaviour and homophobic attitudes, and explored how song lyrics are believed to affect behaviours and attitudes. As part of an experiment, 103 participants completed an online survey that included the presentation of either prosocial, aggressive, or neutral song lyrics, scales to measure altruism, aggression and homophobia, and a research question about the perceived impact of lyrics on behaviours and attitudes. The results showed that prosocial and aggressive lyrics had no significant effect on prosocial behaviour, aggressive behaviour and homophobic attitudes, and that gender did not significantly affect homophobic attitudes. Moreover, the participants reported that music lyrics affect their behaviours, attitudes and emotions, have a personal impact on them, or have no effect. The findings suggest that reading lyrics has a lower impact on behaviour and attitudes than listening to lyrics.

## Introduction

**Literature Review**

### Media exposure.

It has become progressively more difficult for researchers to study media consumption, because of the complexity and diversity of the media landscape of the twenty-first century (Rideout, 2015). According to the Common-Sense Consensus report (2015), US-American children between the age of 8 and 12 ("tweens") are exposed to approximately six hours and children aged 13 to 18 ("teens") to roughly nine hours of media content daily (Rideout, 2015). In that regard, the children spent their time watching TV, playing video games, using social media, reading and listening to music (Rideout, 2015). Furthermore, listening to music was found to be one of the most pleasurable and frequent activities for children and tweens, where tweens and teens reported spending 51 minutes and 114 minutes respectively, listening to music daily (Rideout, 2015). Additionally, while 37% of tweens stated to listen to music every day and 54% to enjoy music "a lot", 66% of teens reported to listen to music daily and 73% to enjoy music "a lot" (Rideout, 2015). In summary, the results suggest that listening to music increases in importance and frequency as children age.

Regarding adults, the Nielsen Music 360 study (2017) found that American adults listen to roughly 32 hours of music per week, which indicates that exposure to music rises after childhood. Moreover, the study reports that music consumption increased from 23.5 hours in 2015 to 26.6 in 2016 and 32 hours weekly in 2017 (Nielson, 2017). Similar trends were reported by the Canadian equivalent of the Nielsen Music 360 study (2018) that demonstrated that 91% of adults and 97% of teenagers listen to music.

Globally, the Music Consumer Insight report (2018) showed that individuals across 18 countries indicated to spend 17.8 hours a week listening to music (IFPI, 2018). Furthermore, the report showed that music exposure occurs in all major contexts of life, with 72% of participants between the age of 16 and 24 listening to music on their way to work, 69% when they are at home and 30% in their sleep (IFPI, 2018).

In summary, the findings demonstrate that listening to music has a significant role in the life of children, that music exposure tends to increase with age, that music consumption rises every year, that a significant amount of time is invested in listening to music globally and that music is enjoyed in several settings of everyday life. Because of the considerable amount of time children and adults invest in music, there is a need to study the effects of music exposure on different populations. The current study sets out to investigate the effects of reading prosocial and aggressive song lyrics on prosocial behaviour, aggression and homophobic attitudes.

**Prosocial media and prosocial music lyrics.**

The consequences of media exposure can be investigated from several perspectives and one research focus in the past years has been the area of prosocial media content. Prosocial behaviour is defined as helpful behaviour towards other individuals without an immediate benefit for the helper (Gross, 2015). Prosocial media, characterized by presentations of prosocial behaviour, was found to be associated with higher levels of prosocial behaviour (Mano, 2014), prosocial cognition and affect (Greitemeyer & Mügge, 2014), altruism (Mares & Woodard, 2005), empathy (Coyne et al., 2017) empathic concern (Prot et al., 2014), positive affect (Saleem, Anderson, & Gentile, 2012) and prosocial thoughts (Greitemeyer & Osswald, 2011) as well as lower levels of aggressive behaviour (Greitemeyer & Mügge, 2014), cognition and affect (Greitemeyer, 2011).

Greitemeyer and Mügge (2014) conducted a meta-analysis that examined the relationship between prosocial and aggressive video games and changes in behaviour and demonstrated that exposure to prosocial video games increases prosocial behaviour, cognition and affect. Further empirical evidence was provided by Coyne et al. (2017) who carried out a meta-analysis that investigated the effects of prosocial media content on prosocial behaviour and aggression. The results showed that exposure to prosocial media leads to higher rates of prosocial behaviour and empathy and lower rates of aggression (Coyne et al., 2017). In summary, the findings suggest that there is a strong link between prosocial media consumption and positive changes in behaviour, cognition and emotions.

Over the last ten years, researchers started to explore the relationship between prosocial song lyrics and behaviour. In that context, Greitemeyer (2009a) found that participants who listened to prosocial song lyrics showed higher rates of prosocial thoughts, empathy and prosocial behaviour compared to a control group. Similar results were found by Kennedy (2011) who exposed participants to either prosocial or neutral song lyrics and subsequently measured prosocial behaviour by counting the number of pens the participants would pick up, after the researcher deliberately dropped them. The findings demonstrated that participants in the prosocial lyrics group had a higher rate of prosocial behaviour and picked up more pens than participants in the control group (Kennedy, 2011).

In addition to increases in prosocial-related variables, prosocial lyrics were found to be associated with decreases in aggression. A research paper by Greitemeyer (2011) demonstrated that listening to prosocial song lyrics decreases aggressive thoughts and aggressive cognition compared to neutral song lyrics. Moreover, Böhm, Ruth, and Schramm (2016) showed that prosocial lyrics are linked to lower rates of aggressive thoughts. In summary, the literature indicates that prosocial music results in higher levels of prosocial variables and lower levels of aggressive variables.

In addition to laboratory studies, numerous field studies attempted to replicate the results in natural settings. In that regard, Jacob, Guéguen, and Boulbry (2010) measured the differences in the amount customers tipped in a restaurant setting when exposed to either prosocial or neural song lyrics. The results showed that customers in the prosocial music condition tipped significantly more than the customers in the control group (Jacob et al., 2010). However, conflicting results were reported by Niven (2015) who carried out a field experiment in a call centre and exposed customers to either neural or prosocial song lyrics. In contrast to the results of previous findings, prosocial music did not affect customer aggression (Niven, 2015).  In summary, the findings indicate that there is a relationship between prosocial song lyrics and higher positive outcomes and lower negative outcomes in laboratory environments, but the empirical data from natural experiments is inconclusive.

In order to account for the confounding variable of music, Greitemeyer (2009a) asked participants to complete a pre-test before the experiment and indicate how prosocial or aggressive they perceive the presented lyrics to be. A similar method was used in numerous replications to control for the confounding variable sound (Böhm et al., 2016; Kennedy, 2011; Jacob et al., 2010). Although the songs selected with that method were considered to have prosocial content, the music could have still impacted the results of the studies.

In fact, while the sound of songs was shown to affect mood in some studies (Grewe, Kopiez, & Altenmüller, 2009; Saarakillio & Erkkila, 2007), conflicting results were found for prosocial song lyrics. In that regard, prosocial music was reported to not affect mood in one study (Greitemeyer, 2009a), and to increase positive affect in another (Greitemeyer, 2009b). Furthermore, Kennedy (2011) found that while prosocial songs seem to have no effect on mood, neutral songs seem to be correlated with higher negative affect. Since the variable "sound" was shown to be correlated with mood, but the song lyrics were not, there is a need to investigate if changes in other variables such as prosocial or aggressive behaviour emerge in the presence of lyrics without music. There is a lack of research regarding the exposure to music lyrics alone to study the relationship between lyrical content and numerous outcomes.

**Aggressive music lyrics.**

In contrast to prosocial music, numerous negative outcomes were shown to be attributed to aggressive music exposure. In that context, Anderson et al. (2003) conducted a study that investigated the impact of rock songs, funny songs and unfunny songs with aggressive song lyrics on behaviour. The findings demonstrated increases in hostile thoughts and feelings across all aggressive music conditions compared to non-aggressive music control groups (Anderson et al., 2003). Further evidence for the detrimental effects of aggressive music lyrics was provided by Fischer and Greitemeyer (2006) who studied the relationship between sexually aggressive music and aggressive behaviour in men and women. It was reported that misogynistic song lyrics caused a rise in aggression-related variables in men, like a desire for revenge and a focus on the negative traits of women (Fischer & Greitemeyer, 2006).

The exposure of women to misandristic music lyrics similarly raised aggressive behaviours towards men (Fischer & Greitemeyer, 2006). Additionally, a research paper by Mast and McAndrew (2011) examined the influence of aggressive heavy metal song lyrics on hostile thoughts and feelings by having asked participants to listen to either heavy metal music with aggressive lyrics or heavy metal music without aggressive lyrics. The results showed that participants presented with aggressive lyrics and heavy metal music exhibited higher rates of aggressive behaviours compared to the other music condition and a control group (Mast & McAndrew, 2011). In summary, the research findings suggest that aggressive music is linked to negative behavioural, cognitive and emotional outcomes such as misogynist or misandristic behaviours, aggressive thoughts and aggressive feelings.

When studying the association between music lyrics and variables such as behaviour, thoughts or feelings, the music itself can be a confounding variable that reduces the validity of the research findings. For that reason, a number of techniques have been employed in the previous literature to control for sound, including choosing aggressive songs from seven different artists (Anderson et al., 2003), using aggressive and non-aggressive songs from the same artist (Mast & McAndrew, 2011), conducting pre-tests to measure the aggressive nature of the songs (Fischer & Greitemeyer, 2006), presenting aggressive music with and without lyrics (Lennings & Warburton, 2011; Mast & McAndrew, 2011) and presenting lyrics with either relaxing or aggressive background music (Coker, 2016; Tripplet, 2016). However, the limitations of the methods employed by previous studies have to be outlined. In that regard, the violent sound of the heavy metal songs, that were frequently used in the literature, (Mast & McAndrew, 2011; Tripplet, 2016) might have distracted the participants from the actual lyrics or overrode the effects the lyrics might have had.

Moreover, the contrast between the types of background music played and the types of lyrics presented, for example, prosocial sounds and aggressive lyrics (Coker, 2016; Mast & McAndrew, 2011), could have confused the participants and affected their results. Additionally, using pre-experiment tests to label songs as aggressive and non-aggressive only serves the purpose of classifying songs but does not control for music in the subsequent experiments. Finally, alternating between different musicians and different songs creates more validity, nevertheless participants are still exposed to both lyrics and music, and thus sound might distort the findings. In conclusion, a criticism of past studies is their focus on various types of music to control for sound, and there is currently a lack in research regarding the utilisation of lyrics themselves without accompanied music to control for the variable sound.

**Various music lyrics and behaviours and attitudes.**

In addition to research that shed light on the behavioural, cognitive and emotional consequences of prosocial and aggressive music exposure, several studies explored the association between other types of music such as romantic, misogynistic and misandristic, sexual, heterosexist or pro-equal songs and changes in behaviour and attitudes. In relation to romantic song lyrics, Guéguen, Jabob, and Lamy (2010) discovered that women who listened to romantic music before they were asked to complete a questionnaire in the presence of a male research confederate, were more likely to give their phone numbers to the confederate upon his request, than the female participants in the neutral song condition. Similarly, Jacob, Guéguen, Boulbry, & Sami (2009) showed that flower shops increased their profits from male customers when they played romantic background music compared to pop songs or neural songs.

In addition to romantic music, researchers studied the effects of listening to misogynistic and misandristic, sexual and heterosexist lyrics. In that regard, Fischer and Greitemeyer (2006) demonstrated that men-hating and women-hating music causes higher rates of aggressive behaviours and attitudes towards the opposite sex in men and women. However, Cobb and Boettcher (2007) found that participants who listened to non-misogynistic hip-hop music displayed higher levels of sexism compared to a misogynistic hip-hop music condition and a neutral music condition. The results suggest that misogynistic attitudes might be caused by hip-hop music in general and not by hip-hop songs with misogynistic content. Moreover, Johnson, Olivo, Gibson, Reed, Ashburn-Nardo (2009) conducted a study that exposed white participants to sexual hip-hop music from black artists and discovered that it decreased empathy and political support for black individuals. Another study by Binder and Ward (2016) demonstrated that participants who listened to heterosexist music regarded potential homosexual job applicants less favourably than their heterosexual counterparts and were less likely to recommend them or to agree to meet them personally.

In contrast to the detrimental consequences of listening to misogynistic, sexual and heterosexist music, pro-equality music seems to be linked with positive changes in behaviour and attitudes. In that context, Greitemeyer, Hollingdale and Traut-Mattausch (2015) provided empirical data that indicates that exposure to pro-equality music lyrics causes positive changes in attitudes and behaviours towards women. Moreover, Jang and Lee (2014) supported Greitemeyer et al.'s (2015) results and showed that listening to pro-homosexual song lyrics such as Lady Gaga's "Born This Way" increases attitudes towards homosexuality compared to a non-homosexual music control group.

In conclusion, the research findings indicate that romantic song lyrics increase romantic behaviours towards the opposite sex, that misogynistic and misandristic lyrics cause a rise in sexist attitudes and behaviours, that sexual music decreases understanding and political endorsement for black people, that heterosexist lyrics increase negative attitudes and behaviours towards gay individuals, and that pro-equal lyrics result in heightened positive behaviours towards gay people and women.

In order to account for the inference of sound, a similar approach to the studies on prosocial and aggressive music has been employed. A pre-test has been conducted to establish the most suitable romantic, misogynistic, sexual, heterosexist and pro-equal songs and to control for the variable music (Binder & Ward, 2016; Guéguen et al., 2010; Greitemeyer et al., 2015; Johnson et al., 2009). Nevertheless, the sound of the songs that was presented simultaneously with the lyrics could have interfered with the effects of the lyrical content. Another limitation is the use of content specific lyrics to measure numerous behavioural and attitude-related outcomes, for example, romantic lyrics for romantic behaviours or pro-homosexual songs for homosexual attitudes. In that regard, Cobb and Boettcher's (2007) research results showed that non-misogynistic and non-content related lyrics could increase sexism, which suggests that music lyrics can affect non-lyric related variables. There is currently a lack in research regarding the generalised effects of song lyrics on attitudes, and there is a need to investigate non-lyric related outcomes.

**The general aggression model and the general learning model.**

In order to explain the connection between media related stimuli and alterations in behaviour, the General Aggression Model (GAM) and the General Learning Model (GLM) have been utilised (Greitemeyer, 2009a). The GAM was first proposed by Anderson and Bushman (2002) who attempted to create a theoretical framework of aggression that encompasses other models of aggression such as Albert Bandura's social learning theory (Greitemeyer, 2009a). As part of the GAM, three central components were introduced that included the form of the preceding stimulus, the internal changes that occur as a result of the stimulus, and the behavioural consequences that proceed the modified intrinsic state (Greitemeyer, 2009a). Regarding the stimulus, either person-related variables (such as character or mood) or situation-related variables (such as media content) might be presented to the individual (Greitemeyer, 2009a). As a result, mental states like cognition, affect and arousal are affected (Greitemeyer, 2009a). For example, aggressive media exposure might alter an internal state by increasing aggressive cognition and affect and changing arousal (Greitemeyer, 2009a). Afterwards, the altered internal processes make aggressive behaviours more likely to occur (Greitemeyer, 2009a).

Anderson (2003) provided empirical evidence for the model and showed that aggressive song lyrics change the internal states of cognition and affect by causing higher levels of aggressive cognition and affect in an aggressive music condition compared to a neural music control group. Similarly, Fischer and Greitemeyer (2006) demonstrated that misogynist and misandristic lyrics increase aggressive thoughts and emotions in the research participants.

However, whereas misogynistic lyrics increased aggressive thoughts in men and misandristic lyrics aggressive thinking in women, no change in cognition was observable in men exposed to men-hating music and in women exposed to women-hating music (Fischer & Greitemeyer, 2006). The findings challenge the cognitive aspect of the mental state component of the GAM and indicate that other internal or external variables play an important role in predicting aggressive behaviour (Fischer & Greitemeyer, 2006).

In addition to the GAM that offers a theoretical explanation for aggression, Buckley and Anderson (2006) proposed the GLM to account for the relationship between prosocial media content and prosocial behaviour (Greitemeyer, 2009a). According to the GLM, prosocial stimuli can modify internal factors such as cognition, affect and arousal and subsequently increase prosocial behaviour (Greitemeyer, 2009a). In that context, Greitemeyer (2009b) established that prosocial lyrics cause heightened prosocial behaviour by increasing prosocial cognition and affect. However, Greitemeyer (2009a) and Kenndey (2011) found no difference in prosocial affect between a prosocial and a neutral lyrics group, questioning the validity of the affect component of the GLM. Furthermore, Greitemeyer (2009a; 2009b) provided empirical data that suggest that the internal variable empathy has a significant role in predicting prosocial behaviour.

In addition to explaining the link between prosocial music and prosocial behaviour, the GLM has been used to interpret changes in aggressive behaviours after exposure to prosocial lyrics. Greitemeyer's (2011) results revealed that prosocial songs decrease aggressive behaviour by reducing the level of aggressive cognition and aggressive affect in research participants. Despite that, Böhm et al. (2016) found no differences in affect between different lyrical categories.

In regard to research on music and attitudes, the GLM has been used by Guéguen et al. (2010) to explain the changes in romantic behaviour in women after they have been exposed to romantic lyrics. Guéguen et al., (2010) suggest that the lyrics might have increased positive affect in the female participants which in turn caused a higher level of romantic behaviours.

However, the interpretation of research findings based on the GLM has been less common in studies on non-prosocial and non-aggressive lyrics. For example, negative perceptions of homosexuals after the exposure to heterosexist lyrics was explained by priming of negative attitudes due to the discriminatory type of music listened to. Similarly, Jang and Lee (2014) argued that the positive changes in feelings towards homosexual rights were the result of priming based on positive pro-equality homosexual music lyrics.

In conclusion, the findings indicate that the GAM and GLM offer a substantiated explanation of the effects of prosocial and aggressive songs on prosocial and aggressive behaviours (Anderson, 2003; Fischer & Greitemeyer, 2006; Greitemeyer, 2009b). Nevertheless, conflicting evidence concerning the role of the internal states cognition and affect has emerged as well as evidence for the potentially significant role of empathy in explaining behaviour (Fischer & Greitemeyer, 2006; Greitemeyer 2009a; Kennedy, 2011; Böhm et al., 2016). Henceforth, the validity of the models regarding cognition and affect is challenged, and the question raised on whether a new variable should be included in the GLM.  Additionally, there has been little research focus on arousal, the third intrinsic variable of the GAM and GLM, because it has been argued that all types of music can alter arousal and thus an exact analysis of its role is difficult (Greitemeyer, 2009a).

Furthermore, whereas some attempts have been made to generalise the GLM to non-prosocial and non-aggressive lyrics such as romantic lyrics (Guéguen et al., 2010), there is still a lack in research regarding the efficacy of the GLM in explaining the effects of music on attitudes. In particular, the ability of the GLM to explain the potential effects of non-content specific lyrics on behaviours and attitudes and the role of song lyrics without the presence of sound.

**Rationale**

The current study sets out to extend research on the impact of media exposure in the form of music lyrics on behaviour and attitudes. In that context, the paper offers a replication of previous research that investigated the effects of prosocial and aggressive song lyrics on prosocial and aggressive behaviour by focusing on lyrics without music, an area that has been overlooked in the past. As sound was demonstrated to affect mood, but conflicting evidence was found for prosocial song lyrics, the role of song lyrics without accompanied music on other variables (prosocial behaviour, aggression, homophobic attitudes) will be explored with the current study. Moreover, in contrast to previous studies that controlled for sound by alternating the music condition, the experiment will focus on lyrics only to avoid any interference of sound. Based on that, the study firstly examines differences in prosocial behaviour between three music lyric conditions (prosocial, aggressive, neutral) and secondly differences in aggression between three music lyric conditions (prosocial, aggressive, neutral).

In addition to that, the study focuses on the effects of prosocial and aggressive song lyrics on homophobic attitudes to extend research on discriminatory behaviour and attitudes as a result of music. A limitation of the previous literature was the focus on content-specific song lyrics to study attitudes, such as the use of romantic lyrics to study romantic attitudes and pro-homosexual lyrics to study homophobic attitudes.

In that regard, the project explores the influence on non-homosexual related lyrics (prosocial, aggressive, neutral) on homophobic attitudes. Similar to the prosocial and aggressive literature, research on attitudes focused on modifying the sound to control for the confounding variable music and the current study adds a new research component by using music lyrics alone.

Past research has found conflicting results regarding gender, and while men were found to show a higher desire for revenge after exposure to sexist music than women (Cobb & Boettcher, 2007), no differences between gender were found for racist attitudes after exposure to stereotyped sexual black lyrics (Johnson et al. 2009). As a result of the incongruence regarding the role of gender in research on discriminatory music and attitudes, the current paper will offer further empirical data by examining gender differences in homophobic attitudes after the exposure to song lyrics. In summary, the study will investigate the effects of reading prosocial and aggressive song lyrics on homophobic attitudes, while controlling for the variable gender.

Lastly, a novel qualitative component is added to give insight not only into measurable differences but also into how individuals perceive their behaviour and attitudes to be impacted by the media. The qualitative question will explore how participants think music lyrics impact their behaviour and attitudes.

**Hypotheses and Research Question**

First Hypothesis: There will be a significant difference in prosocial behaviour between three music lyric conditions of prosocial, aggressive and neutral.

Second Hypothesis: There will be a significant difference in aggressive behaviour between three music lyric conditions of prosocial, aggressive and neutral.

Third Hypothesis: There will be a significant difference in homophobic attitudes between three music lyric conditions of prosocial, aggressive and neutral and between male and female participants.

Research Question: Examining participants' perceptions about how they believe music lyrics affect their behaviour and attitudes.

**Methods**

**Participants**

The study included a purposive, non-probability sample of participants drawn from a population of students attending an Irish third level institution in Dublin, because a similar sample of college students has been selected in the previous literature (Greitemeyer, 2009a; Kennedy, 2011) and the study aims to test the validity of past findings under new conditions. Moreover, the project employed a snowball sample of individuals obtained from an online population of social media users on LinkedIn and Facebook to extend the target population beyond college students. In that regard, full – and part-time BA college students, personal connections on LinkedIn, and people from research related Facebook groups were selected to participate on a voluntary basis.  A total of 103 individuals with an age range from 18 to 57, a mean age of 30, a standard deviation of age of 8.95 and a gender distribution of 23 men and 80 women, took part in the experiment. Moreover, 20 participants were randomly assigned to the prosocial lyric condition, 44 to the aggressive music lyric condition and 37 to the neural music lyric condition.

**Design**

The study employed a mixed methods design including a quantitative true experiment with a between subject's design for the three hypothesis and a qualitative design for the research question. Regarding the first hypothesis, the lyric group (prosocial lyrics, aggressive lyrics or neutral lyrics) was classified as the independent variable (IV) and the rate of prosocial behavior as the dependent variable (DV). The second hypothesis included the song condition as the IV and the level of aggressive behavior as the DV. Lastly, the lyric group and gender were chosen as the IVs and the degree of homophobic attitudes as the DV for the third hypothesis. Additionally, the research question enquired about how participants believe to be influenced by music.

As part of the survey, the participants were asked to pick a number (either 1,2 or 3) and based on their selection, they were randomly allocated to a prosocial lyric group (1), a neutral lyric group (2) or an aggressive lyric group (3). The prosocial and aggressive music groups functioned as the experimental conditions and the neutral music group as the control condition.

**Materials**

An information/consent sheet (see Appendix A) was presented to the participants and outlined the objectives of the study, the right to withdraw, the voluntary basis of the study, the confidential nature of the experiment, the potential risks involved, and the possibility of publication and use of quotes. After completion of the study, a debrief sheet (see Appendix B) was displayed that detailed the purpose of the study and provided contact details of support services such as The Samaritans, Aware and LGBT Ireland.

As part of the study, the subjects were assigned to read either the prosocial song lyrics of the song "Count on Me" by Bruno Mars (see Appendix C), or the aggressive song lyrics of the song "Bloodmeat" by Protest the Hero (see Appendix D), or the neural song lyrics of the song "The Lazy Song" by Bruno Mars (see Appendix E). The participants were exposed to either prosocial lines such as "you'll always have my shoulder when you cry", or aggressive lines such as "we will crush them all like vermin", or neutral lines such as "I'll be loungin' on the couch, just chillin' in my snuggie". All songs were selected from the past literature to test the validity of previous research results on under novel conditions. The song "Count on me" was utilized by Böhm et al. (2016), the song "Bloodmeat" by Mast and McAndrew (2011) and the song "The Lazy Song" by Böhm et al. (2016).

The survey included demographic questions about age and gender, a measure of prosocial behavior (Helping Attitude Scale, Nickell, 1998) (see Appendix F), aggressive behavior (Buss-Perry's Aggression Questionnaire, Buss and Perry, 1957) (see Appendix G) and homophobic attitudes (The Homophobia Scale, Wright et al., 1999) (see Appendix H), and a research question ("How do you think music lyrics affect your behavior and attitudes?").

The Helping Attitude Scale entails 20 questions that measure prosocial behavior, thoughts and attitudes and answers are given on a Likert scale from 1 (strongly disagree) to 5 (strongly agree). All values are combined to a minimum score of 20, a middle score of 60 and a maximum score of 100. Example questions include "it feels wonderful to assist others in need" and "helping others is usually a waste of time". Internal consistency is demonstrated with a Cronbach's Alpha value of 0.869 (Nickell, 1998).

The Buss and Perry's Aggression Questionnaire consists of 29 questions and four subscales (physical aggression, verbal aggression, anger, and hostility) and participants describe how the statements apply to them form 1 (extremely uncharacteristic of me) to 7 (extremely characteristic of me). A final value is calculated by adding up all individual numbers and ranges from 9-45 for physical aggression, from 5-25 for verbal aggression, from 7-35 for anger, and from 8-40 to hostility. Examples include "If somebody hits me, I hit back" and "once in a while I can't control the urge to strike another person". The reliability of the scale is evidenced by a Cronbach's Alpha score of 0.89 (Valdivia-Peralta et al., 2014).

The Homophobia Scale uses 25 statements and three subscales (Behavior/Negative Affect, Affect/Behavioral Aggression, and Cognitive Negativism) to examine homophobic behaviour, thoughts and attitudes and responses are given on a Likert scale from 1 (strongly agree) to 5 (strongly disagree). The overall score is the summation of all sub scores minus 10 for Behaviour/Negative Affect and Affect/Behavioral Aggression and minus 5 for Cognitive Negativism, totalling in a score between 0 and 40 for the first two subscales and a score between 0-20 for the third one. Example items include "homosexuality is immoral" and "Gay people deserve what they get". Research evidence indicates high internal consistency of the scale with a Cronbach's Alpha coefficient of 0.92 (Ciocca et al., 2015).

**Procedure**

The participants completed the study in three different settings (see Appendix I). One group of third level psychology students was approached during a lecture and asked to participate in a study about music lyrics, behaviors and attitudes. Moreover, information regarding the voluntary nature of the study and consent, the structure of the experiment, and the debrief process were provided. Afterwards, the students completed a ten-minute survey on a computer screen in front of them. As part of the questionnaire, they read an information sheet, ticked a mandatory consent box, chose a number (either 1, 2 or 3), indicated their age and gender, read either prosocial lyrics , aggressive lyrics or neutral lyrics, completed the Helping Attitude Scale, the Buss and Perry's Aggression Questionnaire and the Homophobia Scale, and answered a qualitative question about their perception of music impact. After the submission of answers, a debrief sheet was displayed on the computer screen.

Another group of psychology students was sent to a laboratory room equipped with computers during a lecture by a lecturer. Upon entering the room, the were welcomed, introduced to the nature of the study, asked to take a seat next to a computer and fill out the same questionnaire than the first group. Thereafter, they were thanked for participation and questions regarding the study were answered. A third group of online participants on the social media sites LinkedIn and Facebook completed an identical survey online. No differences between the three groups of participants are expected as all individuals completed the same survey on a computer screen.

**Ethics**

Regarding the ethical guidelines set out by the Psychological Society of Ireland, issues regarding the rights and dignity of the participants, and the responsibility and the integrity of the researcher must be discussed.

In relation to the rights and dignity of the participants, the personal data collected throughout the experiments has to be protected. The data was stored on a password-locked computer and USB drive and personal written and oral information about participants that emerged pre-and post-experiment was destroyed or stored safely or will remain confidential between researcher and participant.

In terms of the responsibility of the researcher, aggressive song lyrics such as "we will crush them all like vermin" and the homophobia scale might cause distress for participants. An information sheet outlined the potential for distress and participants had to tick a consent box before they could start the experiment. Moreover, the voluntary nature of the experiment and the right to withdraw at any time was emphasized before the participants commenced the study. Additionally, the study listed mental health support lines such as The Samaritans, Aware and LGBT Ireland in the debrief sheet.

Regarding the integrity of the researcher, some details about the study were withheld from participants who were informed that the experiment is about song lyrics and behavior and attitudes. Similarly, information has been withheld in the past literature (Böhm et al., 2016; Greitemeyer, 2009) to avoid the interference of previous knowledge. An information sheet explained that some details regarding the experiment will be withheld and participants had to tick a consent box before they could continue. Furthermore, a debrief sheet that outlined the purpose of the study was available after completion of the experiment.

**Data Analysis**

Regarding the qualitative component of the study, a thematic analysis based on Braun and Clarke's six step analysis with a description of the entire dataset, an inductive manner of identifying themes, a semantic level of coding and an essentialist epistemological approach was conducted. For the quantitative component, parametric tests are selected because they represent robust and reliable tools to analyze data.

## Results

**Quantitative Data**

### Descriptive statistics.

Table 1. Depiction of descriptive statistics of data.

| | Mean | Standard Deviation | Range | Minimum | Maximum | Cronbach's Alpha |
|---|---|---|---|---|---|---|
| Prosocial Behavior | 79.64 | 11.81 | 74 | 26 | 100 | .89 |
| Physical Aggression[1] | 17.85 | 6.08 | 27 | 9 | 36 | .78 |
| Verbal Aggression[1] | 13.95 | 4.1 | 19 | 5 | 24 | .74 |
| Anger[1] | 16.5 | 6.04 | 24 | 7 | 31 | .84 |
| Hostility[1] | 21.32 | 6.12 | 28 | 8 | 36 | .77 |
| Behaviour/Negative Affect[2] | 3.43 | 6.65 | 38 | 0 | 38 | .9 |
| Affect/Behavioral Aggression[2] | 2.93 | 5.86 | 40 | 0 | 40 | .9 |
| Cognitive Negativism[2] | 2.34 | 3.44 | 19 | 0 | 19 | .7 |

[1] Aggressive Behaviour, [2] Homophobic Attitudes

Table 1 outlines the descriptive statistics of the data set, including the mean, standard deviation, range, minimum, maximum and Cronbach's alpha for the prosocial, aggressive and homophobic variables and sub-categories.

**Inferential statistics.**

*First Hypothesis.*

The first hypothesis predicated that prosocial behaviour would significantly differ between three music groups. A one-way analysis of variance showed that the level of prosocial behaviour did not differ significantly between the three groups ($F_{(2,92)} = 1.88$, $p = 0.158$). In summary, there was no significant difference in prosocial behavior between three music lyric conditions. Thus, highlighting that the music lyrics did not significantly affect prosocial behaviour.
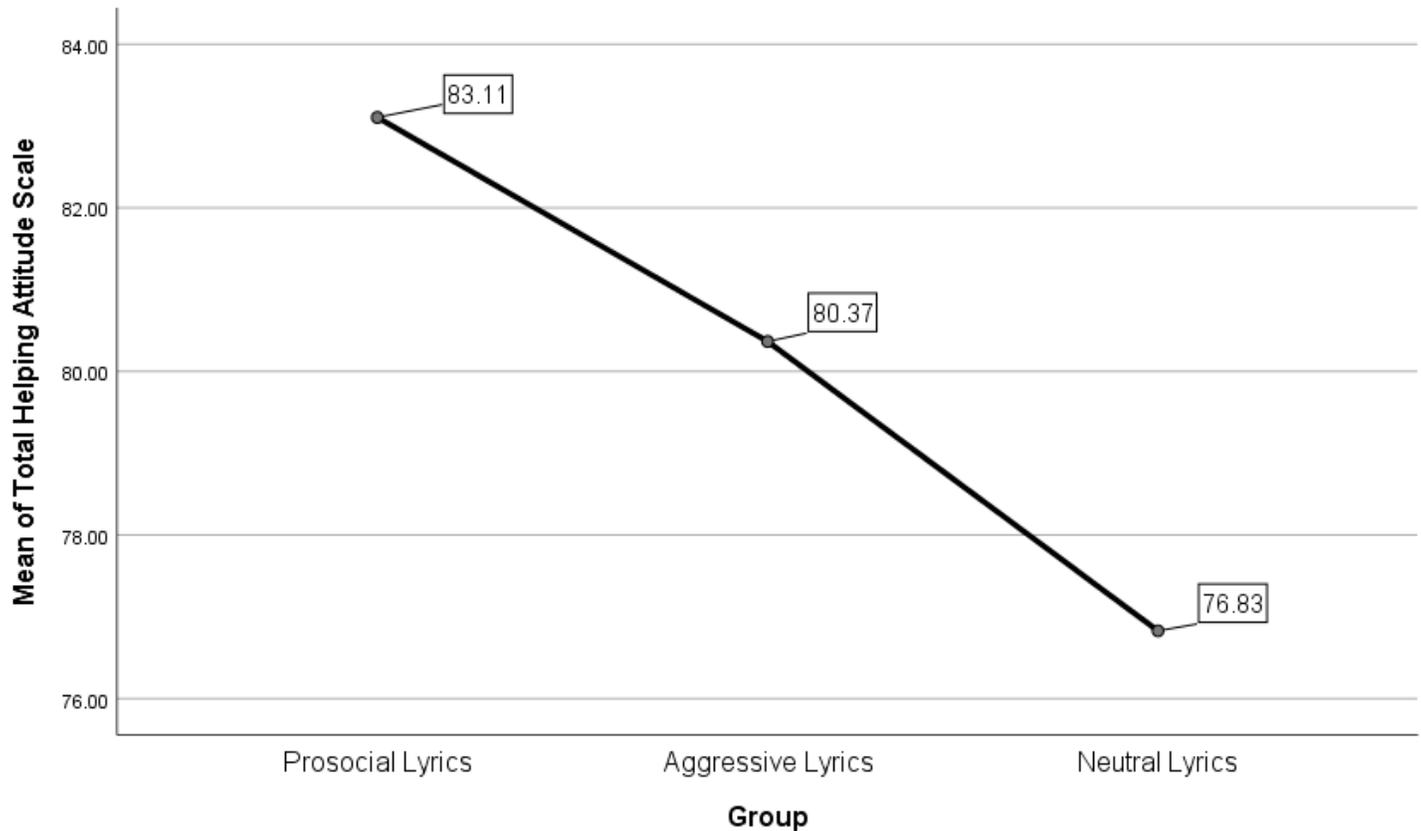


Figure 1. Depiction of helping attitude scores for three lyric conditions.

Figure 1 shows the mean helping attitude scores reported for the prosocial, aggressive and neutral lyric conditions. It demonstrates that the prosocial lyric condition had the highest scores, followed by the aggressive and neural conditions.

***Second Hypothesis.***

Regarding the second hypothesis, it was hypothesized that the rate of aggressive behavior would significantly differ between three lyric groups.

Table 2. Depiction of one-way analysis of variance results for the second hypothesis.

| Variable | F | df | p |
|---|---|---|---|
| Physical Aggression | .29 | 2,94 | .752 |
| Verbal Aggression | .05 | 2,96 | .955 |
| Anger | 1.1 | 2,96 | .352 |
| Hostility | .99 | 2,95 | .376 |

A one-way analysis of variance showed that the level of hostility did not differ significantly between the three groups (F (2,95) = 0.99, p = 0.376). Likewise, levels of physical aggression, verbal aggression, and anger did not differ significantly between the groups (see Table 2.). In summary, there was no significant difference in aggressive behavior between three music lyric conditions. Thus, demonstrating that aggression scores were unaffected by the lyrics.

Table 3. Depiction of aggression subscale scores between lyric groups.

| Lyric Group | Physical Aggression | Verbal Aggression | Anger | Hostility |
|---|---|---|---|---|
| Prosocial | 18.11 | 13.8 | 15.4 | 19.7 |
| Aggressive | 17.4 | 14.1 | 15.98 | 21.41 |
| Neutral | 18.44 | 13.86 | 17.57 | 22.08 |

Table 3 illustrates that participants in the neural lyric condition scored higher than the participants in the prosocial and neural conditions on three aggression sub-scales.

### Third Hypothesis.

The third hypothesis predicted that levels of homophobic attitudes would differ between three lyric groups and between male and female participants.

Table 4. Depiction of two-way analysis of variance results for the third hypothesis.

| Variable | Group | F | df | p |
|---|---|---|---|---|
| Behavior/Negative Affect | Lyrics Group | .37 | 2,91 | .695 |
| | Gender | .27 | 1,91 | .604 |
| | Lyrics & Gender | .16 | 2,91 | .854 |
| | | | | |
| Affect/Behavioral Aggression | Lyrics Group | 1.56 | 2,92 | .216 |
| | Gender | .05 | 1,92 | .832 |
| | Lyrics & Gender | .21 | 2,92 | .811 |
| | | | | |
| Cognitive Negativism | Lyrics Group | .52 | 2,93 | .596 |
| | Gender | .04 | 1,93 | .847 |
| | Lyrics & Gender | .82 | 2,93 | .44 |

A two-way between groups ANOVA examined the role of music lyrics and gender on levels of affect/behavioral aggression and found no significant interaction effect ($F_{(2,92)} = 0.21$, $p = 0.811$). No main effects were reported for music lyrics ($F_{(2,92)} = 1.56$, $p = 0.216$) or for gender ($F_{(1,92)} = 0.21$, $p = 0.811$). Likewise, no significant interaction effects were found for behavior/negative affect and cognitive negativism and no main effects were reported for music lyrics or for gender (see Table 3). In summary, there was no significant difference in homophobic attitudes between male and female participants and between three song conditions. Thus, showing that gender and music lyrics do not affect homophobia.

Table 5. Depiction of homophobia sub-scores across lyric groups.

| Lyric Group | Behavior/Negative Affect | Affect/Behavioral Aggression | Cognitive Negativism |
|---|---|---|---|
| Prosocial | 2.11 | 1.05 | 1.7 |
| Aggressive | 4.4 | 3.74 | 2.74 |
| Neutral | 3.17 | 2.97 | 2.22 |
| Total[*] | 3.5 | 2.93 | 2.34 |

*Total score across all three groups.

Table 5 highlights that scores on all homophobic sub-scales were higher in the aggressive condition that in the prosocial and neutral condition.

**Qualitative Data**

The research question asked how the participants perceive their behaviour and attitudes to be affected by reading song lyrics. In order to analyse the data, a thematic analysis as per Braun and Clark's six step analysis was conducted. As part of the first stage, a general idea about the data was developed through repeated reading and note taking of early discoveries. Afterwards, important elements of the data set were grouped together and integrated into preliminary codes in stage two. Overarching themes that represented and encompassed the codes were formulated as part of stage three, reassessed and edited in stage four, and described and named in stage five. Lastly, the results were outlined in a detailed report in stage six. A thematic analysis reported four central themes that describe the qualitative data: behaviours and attitudes, emotions, personal impact, and no effect (see Figure 2).
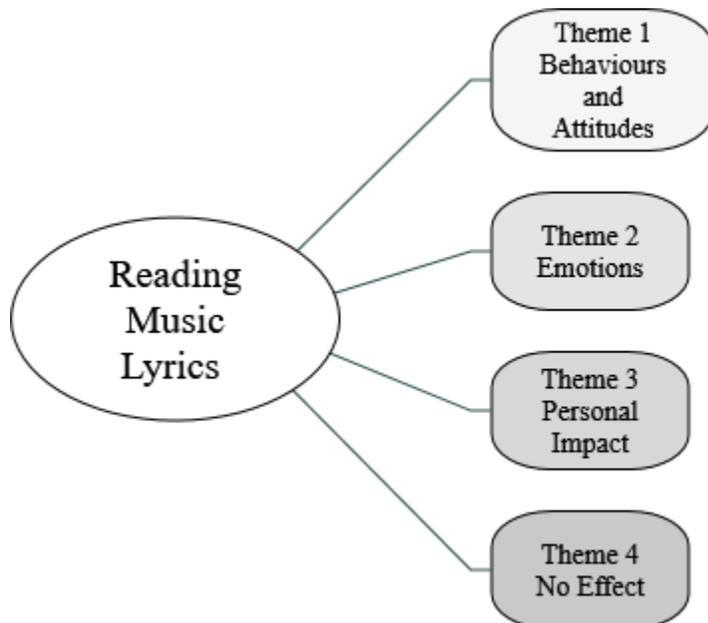


Figure 2. Depiction of the main themes of the data set.

Table 6. Depiction of themes with corresponding subthemes.

| Theme | Subtheme |
|---|---|
| Theme 1 – Behaviour and Attitudes | • Change in Behaviour and Attitudes<br>• Affect Music Choice |
| Theme 2 – Emotions | • Positive Emotions<br>• Negative Emotions<br>• Amplification of Emotions |
| Theme 3 – Personal Impact | • Personal Connection<br>• Coping<br>• Reflection |
| Theme 4 – No Effect | • Temporary Effect<br>• Effect of Sound |

**Theme 1.**

The first theme describes how the exposure to music lyrics affects behaviours and attitudes by altering them, and how behaviours and attitudes affect music choice (see Table 6). A number of individuals reported that they believe to be impacted by reading music lyrics and provided statements such as "For me, music lyrics can have a significant impact on your behaviour and attitudes". In that context, it was found that aggressive lyrics can cause an increase in positive attitudes as a consequence of compensating for the negative nature of the lyrics presented (e.g. "Made feel disgusted and so made my attitudes I feel go more in a positive way to get over the hatred lyrics"). Furthermore, pre-existing behaviours and attitudes were perceived to affect the choice of songs in the life of the participants ("my behaviour & attitudes dictate my choice of music").

In summary, the data suggests that there is an association between reading lyrics and changes in behaviours and attitudes. The impact of reading lyrics seems to be particularly strong for aggressive lyrics that were reported to result in positive behaviours and attitudes, presumably to diminish the negative impact of the negative lyrics. In addition to being influenced by music, behaviours and attitudes were indicated to conversely impact the selection of music.

**Theme 2.**

The second theme refers to the responses that indicate that music lyrics cause emotional reactions in listeners such as positive or negative feelings or increases in emotions (see Table 6). In that regard, the participants emphasized that they perceive to be emotionally affected by reading lyrics (e.g. "descriptive lyrics can evoke emotional responses in me"). For example, lyrics were suggested to have the potential to improve mood, motivate, help to unwind and increase energy levels. At the same time, negative responses such as lower mood and feelings of sadness and disgust were likewise attributed to music. Example statements include "Positive lyrics create positivity". Moreover, music was reported to amplify existing feelings depending on the lyrical content of the song (e.g. "if im happy I can get more pumped or if im sad I can often be brought to tears by a song"). In summary, the data indicates that music has the power to simultaneously change the emotional state of individuals and to intensify already existing feelings.

**Theme 3.**

Theme three details the response that centre around the personal impact that music is reported to have on the lives of the participants such as a personal connection, a coping mechanism and an influence on reflection (see Table 6). In relation to that, it was found that music lyrics have the potential to conjure up past memories about significant experiences and important people in the lives of the listener (e.g. "music and lyrics can lift my mood or bring me back to a memory"). Furthermore, music was regarded as important to cope with stressful life events, to diminish negative feelings, to feel less alone, to relax and to concentrate. (e.g. "Theyre a way to deal with emotion, a positive exertion of feeling and a way to deal with any confusion or cloudy-thoughts"). Additionally, the participants' responses suggest that music encourages the reflection on thoughts and feelings, aspirations, perceptions, values and desires (e.g. "Encourages introspection, encourages activity in oursuit of ideals"). In summary, the statements indicate that music plays a significant role in the life of the participants and functions as a connection to the past, as a method to deal with challenges and as tool for reflection.

**Theme 4.**

The fourth theme relates to the participants who perceived to be unaffected by the lyrics they were presented with and who argued that there might be a short-term effect or an effect when sound is taking into consideration (see Table 6). The study found that music lyrics were not assumed to be associated with changes in behavior and attitudes because people reported to be used to lyrics, to separate the music from life, to be unable to relate to the lyrics, to be me more impacted by everyday life or by the way they were raised (e.g." Negative lyrics don't change my attitude as I think people are quite desensitized to them now"). Additionally, sound was interpreted to be a more significant predictor of behavior and attitudes than lyrics alone.

In that context, the participants argued that other factors such as the melody, tone, tempo, and volume have to be considered in conjunction with lyrics (e.g." I think lyrics have less impact on my behavior, melody however can influence my behavior or mood").  However, some listeners indicated to be only temporarily affected by the music, but do not regard the impact to be long-term (e.g." I think song lyrics can make me feel down or happy in the moment, but they don't really affect my behavior or long-term attitudes". In summary, the exposure to song lyrics does not seem to be a relevant factor in shaping behaviours and attitudes, at least not beyond a transient effect. The reason for that was indicated to be the absence of sound which is perceived to be a more important variable in predicting changes in behaviours and attitudes.

**Discussion**

**First Hypothesis**

The current study investigated the impact of song lyrics on prosocial and aggressive behaviours and on homophobic attitudes. Regarding the first hypothesis, it was predicted that prosocial scores would significantly differ between three lyric conditions of prosocial, aggressive and neutral. The results showed no significant differences between the lyric groups. However, the participants who read prosocial song lyrics scored higher on the Helping Attitude Scale than the participants who read aggressive song lyrics or neutral song lyrics (see Figure 2). Additionally, Figure 2 illustrates that the exposure to aggressive lyrics resulted in higher prosocial behaviour scores than the exposure to neutral lyrics. The findings are contrary to the previous literature that observed significant increases in prosocial behaviours after the presentation of prosocial music (Greitemeyer, 2009a; Kennedy, 2011). Furthermore, in contrast to past papers, the current project found that aggressive lyrics have the potential to increase altruistic behaviours. Although past papers acknowledged that aggressive music leads to increases in aggressive behaviours (Anderson, 2003; Fischer & Greitemeyer, 2006), there are no reports on a link between aggressive music exposure and higher altruistic behaviours.

One explanation for the discrepancy between the findings might be that the use of song lyrics without accompanied music produces different behavioural outcomes than the use of lyrics in combination with music. While past research reported a relationship between the sound of prosocial songs and changes in mood (Grewe et al., 2009; Saarakillio & Erkkila, 2007), no correlation between prosocial lyrics and mood was found (Greitemeyer, 2009a). Similarly, the absence of sound in the current study might explain the lack of significance, which suggests that sound is more predictive of changes in behaviours than lyrics.

However, the previous literature employed a number of strategies to control for the confounding variable sound and reported no interference. Alternatively, the different cognitive processes involved in listening to lyrics compared to reading lyrics might enhance or facilitate the prosocial effects of lyrics. In view of that, the current study showed that the prosocial music group had the highest rates of prosocial behaviours, which indicates that prosocial lyrics have some effect on altruistic behaviours. Regarding the high prosocial scores in the aggressive lyric group, an overcompensation for the negativity in the lyrics by displaying prosocial behaviours might have occurred. In comparison, the neutral lyrics might have elicited no response in the participants.

**Second Hypothesis**

The second hypothesis stated that rates of aggression would significantly differ between three lyric groups of prosocial, aggressive and neutral. A data analysis revealed no significant differences between the music groups. Nevertheless, Table 3 highlights that the participants in the neutral music condition scored higher on three of the four subscales of the Buss and Perry's Aggression Questionnaire than the participants in the other music conditions. In that respect, individuals exposed to neutral song lyrics demonstrated the highest levels of physical aggression, anger and hostility (see Table 3). The results are in contrast to previous findings that established that prosocial song lyrics significantly decrease aggression (Böhm et al., 2010, Greitemeyer, 2011), and that aggressive song lyrics significantly increase aggression (Greitemeyer, 2006; Mast & McAndrew, 2011). One explanation might be that the lack of sound reduced or prevented the reduction of aggression by prosocial lyrics or the increase of aggression by aggressive lyrics. In relation to the higher aggression scores in the neutral lyric condition than in the aggressive condition, the participants might have compensated for the negative nature of the aggressive lyrics by producing altruistic behaviours.

In contrast, the participants in the neutral condition might have experienced no prevention of negative responses by either prosocial lyrics or aggressive lyrics that might facilitate altruistic behaviours. The potential of neutral lyrics to facilitate negative outcomes was highlighted by Kennedy (2011) who found that neutral lyrics result in significantly higher levels of negative affect than prosocial lyrics.

**Third Hypothesis**

The third hypothesis predicted that the level of homophobic attitudes would significantly differ between male and female participants and between three music conditions which were prosocial, aggressive and neutral. The findings revealed no significant differences between the sexes and between the music groups. However, the participants in the aggressive lyric group scored higher on all three subscales of the Homophobia Scale (see Table 5). In that context, Table 5 illustrates that aggressive lyrics resulted in the highest rates of behavioural/negative affect, affect/behavioural aggression, and cognitive negativism. In comparison to previous research, the current study offers additional empirical support for findings that proved that gender does not predict discriminatory attitudes (Johnson et al., 2009). However, the results are contrary to the previous literature that reported significant increases in discriminatory attitudes due to music exposure (Boetcher et al., 2007; Johnson et al., 2009). One explanation might be that reading lyrics instead of listening to them decreases or inhibits the effects of prosocial and aggressive lyrics on homophobic attitudes. Another explanation might be that the use of non-content specific lyrics in the current study produced different behavioural effects than the homophobic lyrics employed in the previous literature (Binder & Ward, 2016; Jang & Lee, 2014). Additionally, the results demonstrated low levels of homophobic attitudes across all conditions with average scores ranging from 2.34 to 3.5 from a maximum score of 40, which indicates a universal acceptance of homosexual individuals.

**Research Question**

The research question asked participants how they think music lyrics affect their behaviour and attitudes. A data analysis revealed four core themes that included "behaviour and attitudes", "emotions", "personal impact" and "no effect (see Figure 2). Some participants indicated that aggressive song lyrics caused them to experience higher prosocial behaviours and attitudes to compensate for the aggressive material. In that regard, the data supports the quantitative findings that imply that an overcompensation for negative content might have produced higher rates of altruistic behaviours. Furthermore, a considerable number of participants believed that while music lyrics have no effect on their behaviour or attitudes, the sound associated with music would significantly affect them. These reports deliver additional evidence for the quantitative results that suggest that the variable sound has a greater effect on behaviours and attitudes than music lyrics. Although the research question enquired specifically about behaviour and attitudes, the majority of participants reported how their emotions were either positively or negatively affected by the music lyrics. The results indicate, that music has a more significant effect on the variable emotions than on behaviours or attitudes.

**Strengths and Limitations**

One strength of the current study is the high reliability of the sample. Past research focused predominately on a college population for the investigation of the relationship between song lyrics and behaviour and attitudes (Anderson, 2003; Greitemeyer, 2009a; Kennedy, 2011). In comparison, the current study extended the target population beyond college students by including a college and non-college population of participants with a mean age of 30.

Another strength are the novel methodological features employed in the current paper. In view of that, the study used a new method to control for the confounding variable sound by excluding sound altogether instead of utilizing strategies such as alternating the sound condition (Coker, 2016; Lennings &Warburton, 2011) or conducing pre-tests to measure the prosocial or aggressive content of songs (Jacob et al., 2010; Fischer & Greitemeyer, 2006). Additionally, the use of non-content specific lyrics in the current study to measure the generalized effects of prosocial and aggressive lyrics on homophobic attitudes, extends the literature on the impact of non-discriminatory content on discriminatory variables (Cobb & Boetcher, 2007). Lastly, a new qualitative component that was neglected in the past literature was added in the current study.

However, there are several limitations that need to be outlined. Firstly, the study lacks ecological validity as participants were exposed to written song lyrics and tasked to read them, which greatly differs from the to the natural environment in which individuals usually listen to lyrics in a sung form.  The presentation of lyrics in auditory form might have produced different behavioural and attitude-related outcomes than lyrics in visual form, which might explain why no significant results were found in the current study.

Secondly, the research question lacks methodological validity as it did not measure what it was supposed to measure. In relation to that, the research question asked about how behaviours and attitudes are perceived to be affected by lyrics, but only a small fraction of participants answered the question and offered a response that focused on their behaviour or attitudes. The majority of participants based their answer on the how they believed their emotions to be influenced by music or on the personal impact music has on them. One explanation for the lack of topic-related answers might be the phrasing of the research question that might have been too vague and might have provided too little detail on the concepts measured or on the answers that were desired.

**Future Research**

In light of the research findings, future papers should investigate if the processing of auditory music lyrics produces different changes in behaviours or attitudes than the processing of visual music lyrics. The same music lyrics could be presented visually in one condition and audibly in another condition, and subsequently variables such as prosocial behaviour, aggression, or homophobic attitudes could be measured. Additionally, future research should compare the impact of non-content specific lyrics such as prosocial or aggressive lyrics on discriminatory attitudes such as homophobia with content-specific lyrics such as homophobic lyrics. In that context, participants could be exposed to either aggressive lyrics or homophobic lyrics and afterwards their homophobic attitudes could be measured. Another research focus should be the qualitative reports on how participants believe to be influenced by music lyrics. In connection with that, the research question of the current study could be rephrased to more efficiently measure the perceived impact of music lyrics on behaviour and attitudes. Furthermore, the current study showed that many individuals consider their emotions to be strongly affected by music lyrics, and thus future quantitative studies could explore how different types of emotions are influenced by music.

Lastly, the quantitative and qualitative results indicate that aggressive lyrics have the potential to increase prosocial behaviours. Future research should collect additional empirical evidence regarding the possibility of aggressive media content to cause changes in prosocial variables through compensation. Potential studies could include a variety of different aggressive lyrics that are presented to the participants before their altruistic behaviours are measured.

**Implications and Applications**

Regarding the implications of the findings for the research area, the data indicates that sound plays a more significant role in predicting behaviour and attitudes than previous researchers reported. The current study challenges the conception that music lyrics affect behaviours and attitudes independently from sounds associated with the music. Moreover, the results suggest that aggressive media content might not necessarily be linked to negative outcomes only but might in fact facilitate positive changes in individuals. In view of that, the findings challenge the predominately negative associations made with aggressive media content. Finally, the paper extends the current understanding of the impact of music lyrics on behaviours and attitudes by highlighting that individuals seem to be conscious of the way music can influence them.

In relation to the application of the results to real life, the data challenges the notion that aggressive media content leads to negative behavioural outcomes such as higher levels of aggression. As children and adults were shown to dedicate a significant amount of their time listening to music (Rideout, 2015; Nielson, 2017), there is a need to consider how certain types of music lyrics might affect individuals. The current study indicates that aggressive lyrics have no negative impact on behaviours and attitudes. Other factors such as sound, artist or music genre might be more significant predictors of negative outcomes.

Furthermore, the qualitative reports demonstrated that music has an important role in the life of individuals and helps them cope with stressful life events and reduces negative emotions. These findings highlight the potential benefits of using music in therapeutic environments as a tool to help clients to cope with challenging life experiences and to facilitate positive emotions and reduce negative emotions. Lastly, the data highlights that there is a high acceptance of homosexual individuals in the Republic of Ireland across college students and professionals.

**Conclusion**

In conclusion, the study demonstrated that altruism, aggression and homophobia are not significantly influenced by reading prosocial or aggressive music lyrics. The absence of sound seems to have either diminished the effects of the song lyrics or prevented the lyrics from causing any changes in behaviours or attitudes. Additionally, the participants stated that music lyrics have either no effect on them or change their behaviour and attitudes, affect their emotions and have a personal impact on them. The lack of clarity of the research question might have caused topic unrelated answers to emerge. Future research should investigate if the visual processing of song lyrics affects people differently than auditory processing. Additionally, the possibility of aggressive content to produce positive outcomes should be examined. Lastly, the current research question should be rephrased and used to explore people's opinions on how they are influenced by music.

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Appendix A

Information Sheet/Consent Form

# Study on Lyrics, Behaviours and Attitudes

You are invited to participate in a research study that will form the basis for an undergraduate thesis. Please read the following information before deciding whether or not to participate.

What are the objectives of the study? We are conducting research on music lyrics, behaviour and attitudes. A complete debriefing sheet will be offered after participation, where any questions will be answered.

Right to withdraw: Participation is completely voluntary and participants have the right to withdraw from the research at any time before or during the study.

Confidentiality: Participation is anonymous and confidential. For this reason, it will not be possible to withdraw from participation after the questionnaire has been completed.  Any personal information that emerges pre-and post-experiment will remain confidential between participant and researcher. The data from the questionnaires will be securely stored on a password locked computer.

Are there any risks involved in participation? While the survey includes lyrics and questions that might cause some minor negative feelings, the lyrics and questions have been used in previous research. If any of the lyrics or questions do raise difficult feelings for you, contact information for support services are included on the final page.

Publication: The findings from this study may be presented at national and international conferences and will be submitted for publication in peer-reviewed journals. For that reason, the quotes of participants might be used, and the data will be stored for a period of 10 years.

Contact Details:
Researcher: Benjamin Kimmel
Supervisor: Dr. John Hyland

Please tick this box to consent to the information outlined above      ☐

Appendix B

Debrief Sheet


Thank you for participating in the experiment. The goal of the experiment was to investigate the effects of reading prosocial (altruistic) song lyrics and aggressive song lyrics on prosocial behaviour, aggression and homophobic attitudes. As part of the study, you were randomly assigned to one of three conditions and either read prosocial song lyrics ("Count on Me" – Bruno Mars), aggressive song lyrics ("Bloodmeat" – Protest The Hero) or neutral song lyrics ("The Lazy Song" – Bruno Mars). Afterwards you completed a questionnaire that measured your prosocial behaviour (Helping Attitude Scale, Nickell, 1998), your aggressive behaviour (Buss-Perry Aggression Questionnaire, Buss and Perry, 1957) and your homophobic attitudes (The Homophobia Scale, Wright et al., 1999). Lastly, you answered an open-ended question about how you perceive to be affected by music lyrics.

The experiment will extend our knowledge about the impact song lyrics have on our behaviour and attitudes. I ask you not to discuss the experiment with anyone else unless they have also taken part in the study, as it will affect future participants.

If any issues emerged as a result of the study, below are contact details of support groups which can help.


The Samaritans:

Telephone: (01) 671 0071                                      Email: jo@samaritans.org


Aware:

Telephone: (01) 661 7211                                      Email: supportmail@aware.ie


LGBT Ireland:

Telephone: 1890 929 539                                       Email: info@lgbt.ie


Contact Details

If you have any further questions about the research you can contact:


Researcher: Benjamin Kimmel – xxxxxx@mydbs.ie

Supervisor: Dr. John Hyland – xxxxxx@dbs.ie

Appendix C

Bruno Mars – "Count on Me"

If you ever find yourself stuck in the middle of the sea,
I'll sail the world to find you
If you ever find yourself lost in the dark and you can't see,
I'll be the light to guide you

Find out what we're made of
When we are called to help our friends in need

You can count on me like one two three
I'll be there
And I know when I need it I can count on you like four three two
You'll be there
'Cause that's what friends are supposed to do, oh yeah

If you tossin' and you're turnin' and you just can't fall asleep
I'll sing a song
Beside you
And if you ever forget how much you really mean to me
Everyday I will
Remind you

Find out what we're made of
When we are called to help our friends in need

You can count on me like one two three
I'll be there
And I know when I need it I can count on you like four three two
You'll be there
'Cause that's what friends are supposed to do, oh yeah

You'll always have my shoulder when you cry
I'll never let go
Never say goodbye
You know you can

Count on me like one two three
I'll be there
And I know when I need it I can count on you like four three two
And you'll be there
'Cause that's what friends are supposed to do, oh yeah
You can count on me 'cause I can count on you

Appendix D

Protest the Hero – "Bloodmeat"

Enemies of the Khanate strung on hooks like pigs to slaughter
Heads will roll
Heads will roll, throats will be slit
Blood will flow like springs of water
Heads will roll
To the river red (across the Ochre Steppe)

A thousand fathers killed
A thousand virgin daughters spread
With swords still wet, with swords still wet
With the blood of their dead

Nurjan is upon us, he kills in silence after prayers
Genghis Khan is upon us, and he slays his betrayers
Thus still the fools of God will guard the city of our birth
Hold an ear to the ground
Hear the sound
Of Clamoring and horses stammer as their gallop meets the earth

A thousand fathers killed
A thousand virgin daughters spread
With swords still wet, with swords still wet
With the blood of their dead

A thousand fathers killed
A thousand virgin daughters spread
With swords still wet, with swords still wet
With the blood of their dead

Tomorrow
Tomorrow they will find us
Hide the children free of sin
We will meet their blades by morning
Protected only by our skin
Tomorrow we will find them
Seek the youngest of their kin
And we will meat them with our fury

And we will crush them all like vermin
And we will crush them all like vermin

Appendix E

Bruno Mars – "The Lazy Song"

Today I don't feel like doing anything

I just wanna lay in my bed

Don't feel like picking up my phone

So leave a message at the tone

'Cause today I swear I'm not doing anything

Uh, I'm gonna kick my feet up and stare at the fan

Turn the TV on

Throw my hand in my pants

Nobody's gon' tell me I can't, no

I'll be loungin' on the couch, just chillin' in my snuggie

Flip to MTV so they can teach me how to Dougie

'Cause in my castle I'm the freakin' man

Yes I said it

I said it

I said it 'cause I can

Today I don't feel like doing anything

I just wanna lay in my bed

Don't feel like picking up my phone

So leave a message at the tone

'Cause today I swear I'm not doing anything

Nothing at all

Tomorrow, I'll wake up, do some P90x

Meet a really nice girl, have some really nice sex

And she's gonna scream out, "This is great"

I might mess around and get my college degree

I bet my old man will be so proud of me

But sorry pops, you'll just have to wait


Yes I said it

I said it

I said it 'cause I can


Today I don't feel like doing anything

I just wanna lay in my bed

Don't feel like picking up my phone

So leave a message at the tone

'Cause today I swear I'm not doing anything


No, I ain't gonna comb my hair

'Cause I ain't goin' anywhere

No no no no no no no no no oh

I'll just strut in my birthday suit

And let everything hang loose


Oh, today I don't feel like doing anything

I just wanna lay in my bed

Don't feel like picking up my phone

So leave a message at the tone

'Cause today I swear I'm not doing anything

Nothing at all

Appendix F

Helping Attitudes Scale

Reference:
Nickell, G.(1998). The Helping Attitudes Scale. Paper presented at 106th Annual
Convention of the American Psychological Association at San Francisco, August, 1998.

Description of Measure:
A 20-item measure of respondents' beliefs, feelings, and behaviors associated with
helping. Each item is answered on a 5-point Likert scale, ranging from 1 (strongly
disagree) to 5 (strongly agree).

Instructions:
This instrument is designed to measure your feelings, beliefs and behaviors concerning
your interactions with others. It is not a test, so there are no right or wrong answers.
Please answer the questions as honestly as possible. Using the scale below, indicate
your level of agreement or disagreement in the space which is next to each statement.

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Strongly | Disagree | Undecided | Agree | Strongly |
| Disagree | | | | Agree |

___ 1. Helping others is usually a waste of time.

___ 2. When given the opportunity, I enjoy aiding others who are in need.

___ 3. If possible, I would return lost money to the rightful owner.

___ 4. Helping friends and family is one of the great joys in life.

___ 5. I would avoid aiding someone in a medical emergency if I could.

___ 6. It feels wonderful to assist others in need.

___ 7. Volunteering to help someone is very rewarding.

___ 8. I dislike giving directions to strangers who are lost.

___ 9. Doing volunteer work makes me feel happy.

___10. I donate time or money to charities every month.

___11. Unless they are part of my family, helping the elderly isn't my responsibility.

___12. Children should be taught about the importance of helping others.

___13. I plan to donate my organs when I die with the hope that they will help someone else live.

___14. I try to offer my help with any activities my community or school groups are carrying out.

___15. I feel at peace with myself when I have helped others.

___16. If the person in front of me in the check-out line at a store was a few cents short, I would pay the difference.

___17. I feel proud when I know that my generosity has benefited a needy person.

___ 18. Helping people does more harm than good because they come to rely on others and not themselves.

___19. I rarely contribute money to a worthy cause.

___20. Giving aid to the poor is the right thing to do.


Scoring:

Items 1, 5, 8, 11, 18, 19 are reverse scored. The scores for each item are summed up to form an overall score, ranging from 20 to 100. According to the author, a 60 is a neutral score.

Appendix G

Buss and Perry's Aggression Questionnaire

Instructions:
Using the 5 point scale shown below, indicate how uncharacteristic or characteristic each of the following statements is in describing you. Place your rating in the box to the right of the statement.

1 = extremely uncharacteristic of me

2 = somewhat uncharacteristic of me
3 = neither uncharacteristic nor characteristic of me
4 = somewhat characteristic of me
5 = extremely characteristic of me

| | | | |
|---|---|---|---|
| 1. | Some of my friends think I am a hothead | ☐ | A |
| 2. | If I have to resort to violence to protect my rights, I will. | ☐ | PA |
| 3. | When people are especially nice to me, I wonder what they want. | ☐ | H |
| 4. | I tell my friends openly when I disagree with them. | ☐ | VA |
| 5. | I have become so mad that I have broken things. | ☐ | PA |
| 6. | I can't help getting into arguments when people disagree with me. | ☐ | VA |
| 7. | I wonder why sometimes I feel so bitter about things. | ☐ | H |
| 8. | Once in a while, I can't control the urge to strike another person. | ☐ | PA |
| 9.* | I am an even-tempered person. | ☐ | A |
| 10. | I am suspicious of overly friendly strangers. | ☐ | H |
| 11. | I have threatened people I know. | ☐ | PA |
| 12. | I flare up quickly but get over it quickly. | ☐ | A |
| 13. | Given enough provocation, I may hit another person. | ☐ | PA |
| 14. | When people annoy me, I may tell them what I think of them. | ☐ | VA |
| 15. | I am sometimes eaten up with jealousy. | ☐ | H |
| 16.* | I can think of no good reason for ever hitting a person. | ☐ | PA |
| 17. | At times I feel I have gotten a raw deal out of life. | ☐ | H |
| 18. | I have trouble controlling my temper. | ☐ | A |
| 19. | When frustrated, I let my irritation show. | ☐ | A |
| 20. | I sometimes feel that people are laughing at me behind my back. | ☐ | H |
| 21. | I often find myself disagreeing with people. | ☐ | VA |
| 22. | If somebody hits me, I hit back. | ☐ | PA |
| 23. | I sometimes feel like a powder keg ready to explode. | ☐ | A |
| 24. | Other people always seem to get the breaks. | ☐ | H |
| 25. | There are people who pushed me so far that we came to blows. | ☐ | PA |

26. I know that "friends" talk about me behind my back.          ☐  H
27. My friends say that I'm somewhat argumentative.              ☐  VA
28. Sometimes I fly off the handle for no good reason.           ☐  A
29. I get into fights a little more than the average person.     ☐  PA


Scoring

The two questions with the asterisk are reverse scored.

The Aggression scale consists of 4 factors, Physical Aggression (PA), Verbal Aggression (VA), Anger (A) and Hostility (H). The total score for Aggression is the sum of the factor scores.

References

Buss, A.H., & Perry, M. (1992). The Aggression Questionnaire. *Journal of Personality and Social Psychology*, *63*, 452-459.

Appendix H

Homophobia Scale

This questionnaire is designed to measure your thoughts, feelings, and behaviors with regards to homosexuality. It is not a test, so there are no right or wrong answers.  Answer each item by circling the number after each question as follows:

 1 Strongly agree
 2 Agree
 3 Neither agree nor disagree
 4 Disagree
 5 Strongly disagree

| | |
|---|---|
| 1. Gay people make me nervous. | 1 2 3 4 5 |
| 2. Gay people deserve what they get. | 1 2 3 4 5 |
| 3. Homosexuality is acceptable to me. | 1 2 3 4 5 |
| 4. If I discovered a friend was gay I would end the friendship. | 1 2 3 4 5 |
| 5. I think homosexual people should not work with children. | 1 2 3 4 5 |
| 6. I make derogatory remarks about gay people. | 1 2 3 4 5 |
| 7. I enjoy the company of gay people. | 1 2 3 4 5 |
| 8. Marriage between homosexual individuals is acceptable. | 1 2 3 4 5 |
| 9. I make derogatory remarks like "faggot" or "queer" to people I suspect are gay. | 1 2 3 4 5 |
| 10. It does not matter to me whether my friends are gay or straight. | 1 2 3 4 5 |
| 11. It would not upset me if I learned that a close friend was homosexual. | 1 2 3 4 5 |
| 12. Homosexuality is immoral. | 1 2 3 4 5 |
| 13. I tease and make jokes about gay people. | 1 2 3 4 5 |
| 14. I feel that you cannot trust a person who is homosexual. | 1 2 3 4 5 |
| 15. I fear homosexual persons will make sexual advances towards me. | 1 2 3 4 5 |
| 16. Organizations which promote gay rights are necessary. | 1 2 3 4 5 |
| 17. I have damaged property of gay persons, such as "keying" their cars. | 1 2 3 4 5 |
| 18. I would feel comfortable having a gay roommate. | 1 2 3 4 5 |
| 19. I would hit a homosexual for coming on to me. | 1 2 3 4 5 |
| 20. Homosexual behavior should not be against the law. | 1 2 3 4 5 |
| 21. I avoid gay individuals. | 1 2 3 4 5 |
| 22. It does not bother me to see two homosexual people together in public. | 1 2 3 4 5 |
| 23. When I see a gay person I think, "What a waste." | 1 2 3 4 5 |
| 24. When I meet someone I try to find out if he/she is gay. | 1 2 3 4 5 |
| 25. I have rocky relationships with people that I suspect are gay. | 1 2 3 4 5 |

Scoring information for the Homophobia Scale (Wright, Adams, & Bernat)

1.  Reverse score the following items: 1, 2, 4, 5, 6, 9, 12, 13, 14, 15, 17, 19, 21, 23, 24, 25  (to reverse score the items 1=5, 2=4, 3=3, 4=2, 5=1).

2.  To calculate the total scale score, add items 1-25, then subtract 25 from the total scale score. The range of scores should then be between 0-100, with a score of 0 being the least homophobic and 100 being the most homophobic.

3.  To calculate the subscale scores:  (after items have been reverse scored)

    Factor 1 (Behavior/Negative Affect): add items 1, 2, 4, 5, 6, 7, 9, 10, 11, 22, then subtract 10. Scores should range between 0-40.

    Factor 2 (Affect/Behavioral Aggression): add items 12, 13, 14, 15, 17, 19, 21, 23, 24, 25, then subtract 10. Scores should range between 0-40.

    Factor 3 (Cognitive Negativism): add items 3, 8, 16, 18, 20, then subtract 5. Scores should range between 0-20.

Appendix I

**Experimental Protocol**

The experiment will be conducted in three different settings: A college classroom, a laboratory room, and online on social media platforms.

College – Classroom

A number of college students will be approached during a lecture and asked to participate in a study on lyrics, behaviours and attitudes. The experimental design of the study, the structure of the survey, the voluntary nature of the experiment, the right to withdraw, and the debrief process will be explained. Afterwards, they will complete the survey on a computer screen in front of them.

College – Laboratory Room

As part of the experiment, the participants will be shown into the laboratory room and will be asked to sit in front of a computer. The participants will be asked to thoroughly read an information sheet that will be displayed on the computer as the first page of the survey created with Google Forms that will outline the objectives of the study, why some information is withheld, the right to withdraw and the voluntary nature of the study, the confidential nature of the experiment, the potential risks involved and the possibility of publication and use of quotes. In order to continue, participants have to tick a consent box. Afterwards, the participants will be randomly assigned to one of three groups. Depending on the group, participants will read prosocial, aggressive or neutral song lyrics. Subsequently, demographic questions about age and gender, measures of prosocial behaviour (Helping Attitude Scale, Nickell, 1998), aggressive behaviour (Buss-Perry Aggression Questionnaire, Buss and Perry, 1957), homophobic attitudes (The Homophobia Scale, Wright et al., 1999) and a research question ("How do you think music lyrics affect your behaviour and attitudes?") will be completed by all participants. Lastly, a debrief sheet will be displayed on the screen that will outline the purpose of the study and will list mental health support lines such as The Samaritans, Aware and LGBT Ireland that can be contacted if necessary. After completion of the study, students will be able to ask questions.

Online – Experiment:

Participants completing the survey on social media sites will complete the same survey including the information sheet, consent box and debrief sheet than the college students.