

The Effect of Grunting and Sexual Orientation on Perceived Masculinity

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Abstract

The current body of research indicates that there is a lack of quantitative research in understanding the perception of grunting behaviour in the gym context and how sexual orientation interacts with it. In this study, we ran an experiment to test the idea that grunting has an effect on how the person who grunts is perceived. Based on recent research, we expected that grunting increases perceived masculinity and tested for an interaction effect between grunting and sexual orientation. Moreover, other variables related to masculinity were tested for such as: perceived feminine attributes, attractiveness, well-being, and sexual objectification. This study was conducted by doing an online study with a 2 (Grunting: Yes vs No) x 2 (Sexual Orientation: Heterosexual vs Homosexual) between-subject experiment with 333 participants. We found a significant effect of grunting on perceived masculinity which indicated an opposite direction than hypothesized. Moreover, we could not find support for an interaction between the two independent variables. Our findings offer the first quantitative evidence for how sexual orientation and grunting affect perception.

Keywords: grunting, sexual orientation, perceived masculinity

The Effect of Grunting and Sexual Orientation on Perceived Masculinity

When reviewing the current psychological research (Gattario et al., 2015; Gültzow et al., 2020; Marsh, 2017; Schartau, 2020), we can notice that body image, eating disorders and the general pressure on men to follow a certain standard has been increasingly changing in the last decades. The latter can also be observed in other parts of our own society, specifically in how we perceive men and masculinity. Compared to previous generations when there was less pressure on men's physical appearance, nowadays men have a higher focus on their physique. The ideal of the 21st-century man is a muscular and lean body (Gattario et al., 2015). This change of identity is accompanied by a surge of importance of going to the gym in the western world (IBISWorld, 2021). Through this, one could argue that in recent decades the gym became increasingly significant in developing and expressing men's identity (Turnock, 2021). Subsequently, one might have encountered certain men grunting while exercising in the gym. This behaviour generates specific ideas which we have about these people.

Grunting itself describes a process in which someone lets out a short sound usually in the context of anger or pain (Cambridge Dictionary, 2022). This behaviour is generally considered as something normal by the average person (Lev & Hertzog, 2021) in physical exercise and especially in gyms. Gym enthusiasts think that grunting leads to an advantage in performance. However, studies indicate that this behaviour is not normal or necessarily needed in gym exercises, such as the deadlift (Morales et al., 1999). Recent research indicates that the main utility of grunting lies in making advertent of underlying social rules in the gym, such as showing that the place belongs to them (Lev & Hertzog, 2021). Therefore, it is assumed that it originated through a socialization process and is not considered "normal" (Bourke, 2014). Thus, grunting is seen as an "object" that is made by social interaction of men

(Lev & Hertzog, 2021). The act of grunting can be seen as a socialization process which accelerates the time in which one integrates into the gym culture.

However, the knowledge we have about perceptions of grunting is very limited. Most of the current body of research primarily focuses on how it improves performance in high-effort tasks (O'Connell et al., 2014) and how it impacts the opponent's performance (Müller et al., 2019) in competitive sports. Thereby, the status quo showcases that 56 percent of athletes still believe that grunting can help in exerting a higher performance (Davis et al., 2016). Moreover, it might also be used to change the anticipation of the action one takes, such as how long the ball trajectory is in tennis (Müller et al., 2019). Overall, the orientation of these studies was mainly on physical aspects as mentioned above (Müller et al., 2019; O'Connell et al., 2014). This one-sided focus has led to a gap in understanding how we perceive one's grunting. We believe that it is important to shed light on the perception of grunting in the gym and to what degree sexuality interacts with it. Our reasoning for that lies in the stigma that homosexual men are generally seen as less masculine than heterosexual men (Blashill & Powlisha, 2009) and therefore exert anti-feminine behaviours to compensate for their lacking masculinity (Harry, 1983), such as grunting. To evaluate if this assumption can be applied to grunting in the gym context, our research question focused on the effect of sexual orientation (in particular male homosexuality) and grunting on several outcome variables.

To evaluate these effects, we, as a group, decided on different outcome variables we will be focusing on in this study. These variables are summarized in three clusters: the gender, psychological outcomes (e.g., well-being) and physical aspects (e.g., how the participants perceive themselves). In my paper, I am going to focus on the gender- and psychological cluster.

Gender Cluster

Perceived masculinity, part of the gender cluster, describes factors that are possessed by the typical man (American Psychological Association, n.d.). Generally, masculinity consists of characteristics such as dominance, self-reliance, disdain for homosexuals, power over women, and self-reliance (Mahalik et al., 2003). Nowadays, these traditional masculinity norms can be defined as hegemonic because the characteristics are accompanied by superiority over women (Scott, 2014) and antifemininity norms (Kimmel & Llewellyn, 2012; Levant et al., 2013). Although hegemonic masculinity still exists, the factors which constitute masculinity have been changing in the last decades, especially in the western world (Landsberg, 2020). Nowadays, a man has more freedom regarding which factors he uses in order to express himself, as feminine characteristics are also an option for them. With this new freedom, men have a wider range of opportunities to show interest in more stereotypical female traits and behaviours, such as fashion, body shape, and emotional expression. Therefore, masculinity is currently perceived as a wider continuum. However, even though the masculine characteristics have been changing, hegemonic masculinity features are still prevalent. Therefore, we think that men engaging in grunting behaviour can lead to a change in how masculine they get perceived by others since grunting can be a way of anti-feminine and dominant behaviour.

Perceived sexuality can also be considered an important factor for the gender cluster. It especially influences gay men since they are generally perceived as less masculine than their heterosexual counterpart (Blashill & Powlishta 2009). This sexual stigma, which describes the knowledge of a culture regarding the lower status, negative recognition, and powerlessness of non-heterosexual people (Herek, 2009), can result in them internalizing these beliefs and convictions into their own belief system (Herek & McLemore, 2013). It is apparent that these beliefs, of how a man should be and behave, can put a lot of pressure on

gay men, especially if they want to be perceived as masculine. Therefore, it could be expected that gay men engage in grunting behaviour to be perceived as more masculine in order to comply with their adjusted belief system to the societal pressures.

Gender roles can also be considered as an important factor that possibly is affected by grunting and sexuality. It describes how the environment influences the way a person displays the characteristics of their biological sex (Chadwick, 2012). These norms which we are exposed to build the foundation of the tools a person uses to create their identity later on (Brannon, 2005; Sanchez et al., 2005). However, we live in a society in which hegemonic masculinity is heavily linked to traditional gender roles, which promote negative attitudes against gay men (Kite & Whitley 1998). Based on this, we assume that grunting reinforces the traditional role of men, displaying strong characteristics and anti-gay behaviour. Thus, it is expected that this results in gay men feeling obliged to follow this traditional role as a compensatory mechanism. Therefore, grunting can work as a beneficial buffer for homosexual men to make them get perceived as more masculine.

Psychological Cluster

The second cluster, psychological outcomes, consists mainly of variables concerning well-being and self-objectification. In order to explain the relationship between grunting and psychological outcomes in gay men, it is important to first address the objectification theory. This concept was formally used to explain psychological outcomes such as depression or disordered eating behaviours in women, as a reason for sexual objectification (Fredrickson & Roberts, 1997; Moradi & Huang, 2008). The source of this judgement comes from their culture's expected body and sexual functioning. However, recent research indicates that the objectification theory can be applied to homosexual men to explain their issues regarding body dissatisfaction (Levesque & Vichesky, 2006; Martins, Tiggemann & Krikbride, 2007). These studies show that there is a higher form of objectification of the homosexual

community and within it (Beren et al., 1996; Gettelman & Thompson, 1993; Siever, 1994), concerning: social comparison, body dissatisfaction, self-objectification, body shame, drive for thinness, muscular body, and restrained eating. Therefore, it can be said that gay men and heterosexual women get objectified to the same extent (Engeln-Maddox et al., 2011).

Knowing this and that gay men are generally perceived as less masculine (Blashill & Powlishta, 2009), I assume that they would try to fulfil these deficits, such as lacking muscularity. Gay men could engage in behaviours that accomplish the objectified qualities, through working out in a gym to become more buff and be perceived as more muscular and masculine. These behaviours expose them to the fitness environment where people encounter grunting and start to learn it through interaction (Lev & Hertzog, 2021). Therefore, if gay men engage in grunting behaviour, they will be accepted to a higher degree by the gay community (Duncan, 2007) and the rest of society which could alleviate their well-being. Thus, it can be said that grunting might have an indirect effect on a gay men's well-being.

Overview of the Study and Predictions

Overall, it can be said that we are living in times where we must deal with enormous changes in our society, such as the view on masculinity (Landsberg, 2020). However, we can observe in everyday life that many traditional masculine values are prevalent in western society. One group is especially affected by this: gay men (Kite & Whitley, 1998) because they often must deal with a stigma of being perceived as less masculine (Blashill & Powlishta 2009).

We conducted an experiment to answer the following question: What is the effect of grunting and sexuality on perceived masculinity? By doing this, we hope to fill a gap in the research since this field of study has been limited until now. We hypothesize that grunting will increase the perceived masculinity of men. Moreover, it will be tested if sexuality and

grunting interact in a way in which it particularly increases perceived masculinity for gay men if grunting is activated, as opposed to gay men who do not grunt.

Method

Participants and Procedure

The initial sample size in the conducted study was 369, where a total of 16 participants dropped out of the study before completion and 12 participants were excluded due to failing the manipulation check. Furthermore, five participants who reported a sexual orientation other than heterosexual were removed from the sample to increase the homogeneity of the participant pool, and three outliers were removed, leaving us with a total sample size of $N = 333$. Of the 333 participants, 79 were male (23.72%), 253 (75.98%) were female and one person identified as non-binary (0.3%). The age range of participants was 18- 79 years old ($M = 34.75$, $SD = 13.11$) (Table 1). A requirement for participants to take part in the study was that they would not identify as homosexual.

The survey was hosted on Qualtrics, the participants were recruited through the Prolific Academic and the study was conducted in English. The recruitment text used to advertise the study, briefly mentioned the nature and content of the experiment, namely watching a video of a man working out followed by a questionnaire measuring multiple variables. Participation was voluntary and there was monetary compensation of 1.50 euros for completing the study. The participants had to provide consent for processing their data, and information about participant identity was kept anonymous.

After having chosen to take part in the study, participants were required to read and fill out the informed consent prior to starting the experiment. Once the participants had agreed to the requirements of the study and filled out the informed consent form, certain demographic data were collected. Participants were asked about their gender, age, sexual orientation, perceived socioeconomic status, education, and how often they go to the gym to exercise.

Participants were able to choose not to answer these questions if they did not want to.

Afterward, they were randomly allocated to one of the conditions, watched the video with audio, and responded to the dependent variables. Furthermore, the participants' prolific ID was needed in order to transfer the compensation amount following the completion of the experiment. The data was collected anonymously and would be securely stored for 10 years on Qualtrics.

After completing the questionnaire, participants were debriefed on the study. The debriefing made participants aware of the other possible conditions of the study. Furthermore, it described the aim of the study and the variables the study intended to measure, which has been purposefully vague in the informed consent. The benign deception resulting from the manipulation of the sexuality variable was also made clear to the participants. Finally, the reasons for conducting the study were briefly explained, as well as the expected effects. The overall duration of the study was approximately 10 minutes.

Design

The current study used a 2x2 between-subjects design. Therefore, two independent variables were manipulated, namely, sexual orientation (heterosexual vs homosexual) and grunting (grunting vs no grunting). The participants were randomly assigned to one of the four conditions, which are grunting heterosexual (HEG $n = 78$), non-grunting heterosexual (HEN $n = 88$), grunting homosexual (HOG $n = 78$), and non-grunting homosexual (HON $n = 89$).

Experimental Manipulation

There were four conditions. The conditions were grunting heterosexual, non-grunting heterosexual, grunting homosexual and non-grunting homosexual. The sexuality variable was manipulated through means of a text appearing on the screen before the video began mentioning that the man working out was being filmed by his partner, a female name in the

heterosexual condition, and a male name in the homosexual condition. The participant would then watch a video of the man performing several exercises. These exercises were a leg press, deadlift, overhead barbell, and bench press. The grunting variable was manipulated by having the subject in the video grunt during his workouts through a voice-over or remain silent. There were two video versions of each exercise, where the subject would either grunt or remain silent, meaning there was no difference in video material in the different sexuality conditions. The subject was the same in every condition

Measures

The following variables are a part of this thesis: wellbeing, feminine attributes, attractiveness, masculinity, and sexual objectification. A 7-point Likert scale was used for all variables except objectification.

Self-esteem (“He has high self-esteem”), perceived body image satisfaction (“He is satisfied with the appearance, size and shape of his body”) and life satisfaction (“In general, he is satisfied with his life”), were assessed using Likert scales ranging from 1 (strongly disagree) to 7 (strongly agree). With $\alpha = 0.82$, the internal consistency of the three items was sufficient to combine them into the scale “wellbeing”.

The variable feminine attributes was created to assess attitudes that relate to femininity perceptions based on the BEM sex-role inventory (Reese et al., 2013). The survey had 4 questions including measures of sympathy and understanding, all of which used a Likert scale ranging from 1 (Not at all) to 7 (Entirely). A composite scale was created combining the questions, with an internal reliability score of $\alpha = 0.86$.

Attractiveness was investigated by one item on a Likert scale from 1 (Not at all) to 7 (Entirely), meanwhile masculinity was measured using singular 7-point Likert scale questions directly asking participants to rate the subject on masculinity.

To assess objectification of the athlete, a self-objectification scale by Fredrickson (1997) was used, where participants had to rank ten features, from most important (1) to least important (10), based on how much they thought the athlete would value them. These features included physical coordination, health, strength, weight, sex appeal, physical attractiveness, stamina, sculpted muscles, physical fitness level, and measurements. The sexual objectification scale was analysed by subdividing the scale into sexual objectification scores for competence, and sexual objectification for appearance. The resulting perceived sexual objectification (so) scale was created by subtracting so-competence from so-appearance, giving a rating between -25 to 25, with higher numbers indicating a greater level of perceived sexual objectification of the athlete.

Checks

Manipulation checks were conducted to test whether the manipulation of each of the independent variables was perceived by the participants. Regarding the sexuality independent variable, at the start of the survey participants had to answer who had shot the video of the subject, which had been stated in the descriptive text the participants received prior to watching the video. If the given answer did not fit the assigned condition, their data got excluded from the statistical analysis ($n = 12$).

For the independent variable of grunting, an audio check was performed at the start of the video to ensure that participants had adequate sound quality. This was done by playing an audio recording of someone listing a four-digit number, which the participant then had to fill in. Only when the participant filled out the correct four-digit number they would be able to proceed with the rest of the experiment. This eliminated the possibility of having data of people who were not able to distinguish the grunting taking place in the video.

As an attention check, participants were asked the name of the athlete in the video after having viewed the video, which had been stated in the descriptive text. This was done as

an additional precaution to observe whether participants were retaining the information provided before the video and subsequent survey.

A part of the group additionally used the variables promiscuity, femininity, competence, warmth, masculine attributes, promiscuity, health, workout enjoyment, and exertion level, but I will not use them in my work.

Results

Assumptions

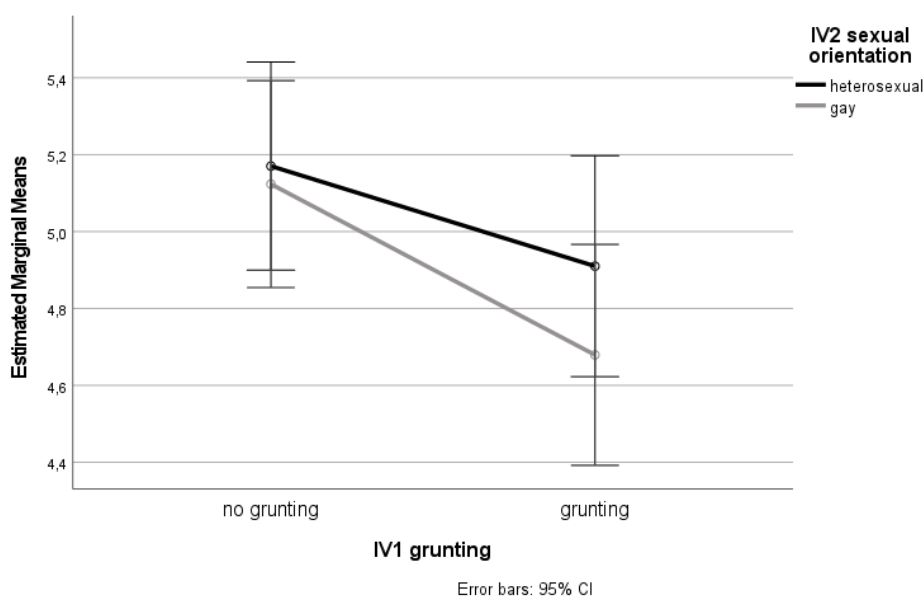
In order to test the hypotheses of this study, it is necessary to test certain assumptions which are implied in the data analysis. Firstly, the validity for our assumed normality was checked through the Shapiro Wilk test. We found non-significant results for the following outcome variable conditions besides: Masculine attributes (no grunting – heterosexual, $W(87) = .97, p = .079$; grunting -heterosexual, $W(80) = .97, p = .096$; grunting – gay, $W(77) = .98, p = .254$), fitness (grunting – heterosexual, $W(80) = .97, p = .062$) and competence (no grunting – heterosexual, $W(87) = .98, p = .172$; grunting – heterosexual, $W(80) = .98, p = .107$). The remaining outcome variable conditions were found to be statistically different from a normal distribution. However, looking at our data we can argue for normality by considering the size of our sample (Central Limit theorem) as well as analysing the kurtosis, skewness, and boxplots. Consequently, we concluded to delete our femininity outcome variable due to high kurtosis/skewness and three outliers from our well-being (grunting – heterosexual) outcome variable. The resulting values fit the criteria to assume normality (Kline, 2011). Moreover, the size of our sample should give robustness against normality assumption (Central Limit Theorem). Furthermore, all boxplots indicate normality. Thus, we keep the assumption that the remaining outcome variables are normally distributed for every group. Secondly, the assumption that the standard deviation is the same for each group of all the conditions because the Levene's-test showcases no violation of this assumption.

Hypotheses

We conducted a two-way ANOVA to test whether sexual orientation (Heterosexual – Homosexual) or grunting (grunting – no grunting) has an impact on perceived masculinity. We found a significant main effect of grunting on perceived masculinity $F(1,329) = 6.18, p = .013, \eta^2 = .02$. However, contrary to our expectations, we discovered that participants in the grunting conditions perceived the actor as lower in masculinity ($M = 4.79, SD = 1.34$), than compared to those in the no-grunting conditions ($M = 5.15, SD = 1.24$). Moreover, we did not obtain significant results for our second hypothesis, namely that sexuality and grunting interact in a way in which it increases perceived masculinity for gay men if grunting is activated $F(1,329) = 0.42, p = .517$ (Figure 1). Unlike expected, we did not find a significant effect of homosexual men being perceived as less masculine than heterosexual men $F(3,329) = 0.96, p = .328$.

Figure 1

Estimated Marginal Means Masculinity

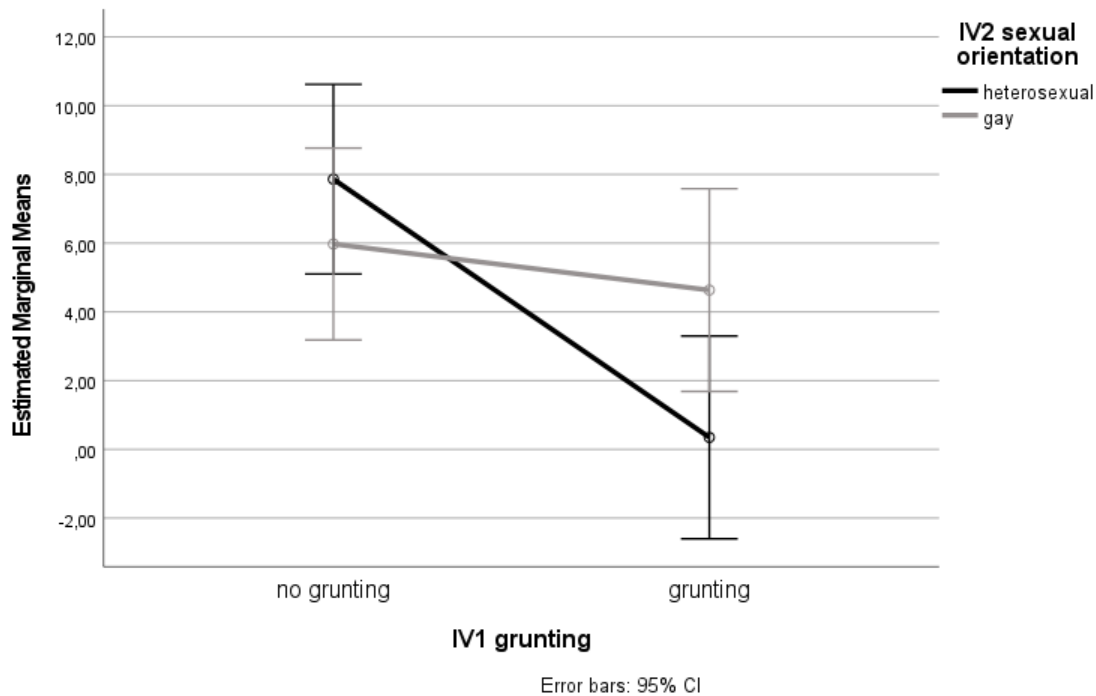


Other Findings

There are also other interesting findings besides our main hypotheses. We did discover a significant effect for homosexual men ($M = 3.62$, $SD = 1.03$) being perceived with more feminine attributes than heterosexual men ($M = 3.25$, $SD = 1.06$), $F(1,329) = 11.17$, $p < .001$, $\eta^2 = .03$. As for the effect of grunting on perceived feminine attributes, we discovered another main effect $F(1,329) = 15.00$, $p < .001$, $\eta^2 = .04$. Specifically, the actors in the grunting conditions were perceived with less feminine attributes ($M = 3.21$, $SD = 1.08$) than in the conditions where the actor did not grunt ($M = 3.65$, $SD = 1.00$). However, an interaction effect of both independent variables was not detected $F(1,329) = 0.86$, $p = .356$.

Furthermore, grunting $F(1,329) = 13.97$, $p < .001$, $\eta^2 = .04$ and sexual orientation $F(1,329) = 6.25$, $p = .013$, $\eta^2 = .02$ had a significant main effect on perceived attractiveness. Nonetheless, these effects were in opposite directions: participants in the homosexual conditions ($M = 4.17$, $SD = 1.59$) perceived the man as more attractive than in the heterosexual conditions ($M = 3.76$, $SD = 1.56$) and in the grunting conditions as less attractive ($M = 3.63$, $SD = 1.58$) than in the no-grunting conditions ($M = 4.26$, $SD = 1.53$). Nevertheless, there was no significant effect for the interaction of both independent variables $F(1,329) = 2.10$, $p = .149$.

No main effect was found for well-being in the grunting conditions $F(1,329) = 0.01$, $p = .926$ and in the sexual orientation conditions $F(1,329) = 0.57$, $p = .449$, nor for the interaction effect of grunting and sexual orientation $F(1,329) = 0.64$, $p = .425$. Lastly, we discovered a main effect for grunting $F(1,324) = 9.25$, $p = .003$, $\eta^2 = .03$ on sexual objectification. Participants who were in the no grunting conditions ($M = 6.93$, $SD = 12.85$) thought that the person in the video sexually objectifies themselves more than in the grunting condition ($M = 2.49$, $SD = 13.62$). Moreover, an interaction effect, $F(1,324) = 4.50$, $p = .035$, $\eta^2 = .04$, showcased (Figure 2) that although the perception of the extent to which men

Figure 2*Estimated Marginal Means Sexual Objectification*

objectify themselves based on their sexuality decreased in the presence of grunting, the difference between the perceived objectification between the two sexual orientations when grunting increased considerably. While grunting, gay men are perceived to objectify themselves significantly more than heterosexual men, compared to the no-grunting conditions. However, no main effect for sexual orientation on sexual objectification was found $F(1,324) = 0.68, p = .410$.

Discussion

We are currently living in times where (gay) men must deal with enormous changes in how society views masculinity (Landsberg, 2020). Therefore, we think it is important to understand how certain factors influence the perceived masculinity of men. The factors that we have focused on in this thesis are grunting and sexual orientation. Besides their

independent influence on perceived masculinity, we also examined if grunting grants privileges to gay men. Therefore, we are the first to test this subject in a quantitative manner.

Findings

We could not find support for our first hypothesis, namely that grunting leads to higher perceived masculinity. Contrary to our expectations, we discovered that participants in the grunting conditions scored the actor lower on masculinity, as compared to those in the no-grunting conditions. This implies a causal explanation for grunting people being perceived as less masculine. Our finding is unexpected since qualitative research indicates that grunting is often associated with masculine behaviour (Lev & Hertzog, 2021). Several reasons could explain this discovery, for instance the fact that our sample mostly consisted of women (75.98%), which might have a different view on grunting than men. Furthermore, most of these participants were either not going to the gym or casual gym-goers. This might have influenced our finding because grunting is considered to be a learned behaviour (Lev & Hertzog, 2021). This means that the perception of someone that frequently goes to the gym and is used to this voluntary behaviour may be opposite than that of our sample which consisted of people who rarely frequent the gym. Nevertheless, our findings showcased a causal negative link for grunting behaviour on perceived masculinity. This is an important contribution to the current body of research which mostly focused on qualitative analysis (Lev & Hertzog, 2021) or the direct benefits of grunting behaviour in sports (Müller et al., 2019; O'Connell et al., 2014) and not the effect on perceived masculinity.

Moreover, we could not find support for our second hypothesis, 'the existence of an interaction effect between grunting and sexual orientation on perceived masculinity'. We explain this finding through the observation that contrary to what was expected, that grunting would increase perceived masculinity, our results show that grunting decreases perceived masculinity. Therefore, the hypothesis of the interaction effect was rejected.

We were not able to discover the significance of sexual orientation on perceived masculinity. However, we detected slight differences in the means of the advantage of the heterosexual conditions. Even though the finding was not significant, the means still showcase a difference in favour of the present research, that stipulates a sexual bias towards gay men, which makes them get perceived as less masculine (Blashill & Powlishta, 2009; Levesque & Vichesky, 2006; Martins, Tiggemann & Krikbride, 2007). Supporting this idea, we also discovered that the “gay” man in the video was associated with more feminine attributes than the “heterosexual” man. This further supports the current research findings concerning sexual bias.

Another interesting finding concerns the effect of grunting on perceived feminine attributes. This is a discovery regarding the effect of grunting on perceived masculinity. We found out that the grunting actor was generally perceived with less feminine attributes than the non-grunting actor. This result could give further support for the idea that grunting is associated with masculine behaviour (Lev & Hertzog, 2021). This is because when a person is perceived with less feminine attributes their masculine attributes may consequently be higher.

Concerning perceived attractiveness, we were able to detect that grunting and sexual orientation independently have a causal effect on perceived attractiveness. Therefore, we can infer that homosexual men are considered more attractive than heterosexual men and non-grunting men are perceived more attractive than the ones that grunt. The finding regarding sexual orientation was partly expected due to current research indicating that gay men are more objectified and thus might have a higher focus on their bodies (Beren et al., 1996; Gettelman & Thompson, 1993; Siever, 1994). Thus, our finding could give further support for the idea that gay men are perceived as more attractive due to their focus on physical attractiveness. However, this discovery might also have been slightly affected as a reason of the stereotype that gay men care more about their looks.

Our significant finding of grunting on perceived attractiveness additionally supports the idea that grunting can be considered as something voluntary and learned (Lev & Hertzog, 2021). Since the grunting person was assumed to be less attractive than the non-grunting individual, it can be derived that grunting indicates characteristics that are not attractive to our sample. This is not surprising because most of our sample were women who were casual or no gym-goers. Thus, they are less likely to have had much contact with this behaviour and consider it generally as less attractive (Lev & Hertzog, 2021). Consequently, they might have incorporated and associated this behaviour differently (Macho, hypermasculinity, etc.) than men and/or someone more sport enthusiastic. However, this idea should be seen in a critical light and further be evaluated in future studies.

Another interesting finding emerged by analysing the effect of sexual objectification. Thereby, we were able to detect a causal negative effect of grunting on sexual objectification that indicates that men that do not grunt are perceived to sexually objectify themselves more than people that grunt. This is an interesting finding since one might at first expect the effect to be in the opposite direction because anecdotally grunting is associated more with behaviour patterns that could imply compensation behaviours.

Furthermore, the interaction effect indicated that sexuality and grunting interact in ways that showcase that there is nearly no difference in the belief that the person objectifies themselves more when they are homosexual or heterosexual and do not grunt. However, when the person grunts it can be seen that a gay man is considered to objectify himself more than the heterosexual person. Thus, grunting makes people less objectified especially when they are known to be heterosexual.

Lastly, our analysis could not find significant evidence for an effect of either grunting or sexual orientation on well-being. This is surprising since it could have been expected that homosexual men are perceived with lower well-being due to the sexual stigma they live under

(Levesque & Vichesky, 2006; Martins, Tiggemann & Krikbride, 2007). Moreover, the non-significance of grunting showcased that well-being is not related to grunting behaviour.

However, due to the originality of our study, this should be further evaluated in future studies.

Implications

Based on our findings we can infer several implications for human behaviour. Given that grunting decreases perceived masculinity for men, people that care about their future public image should take the result into account. This might be especially important for men who consider this behaviour as something “inherent” and typical for masculine men (Lev & Hertzog, 2021). Moreover, we were able to see that knowledge of the homosexuality of an athlete led to a decrease in their perceived masculinity. Therefore, homosexuals who value whether they get perceived as gay or not in their environment can use this information to try to behave or look in ways that do not indicate homosexual stereotypes. Moreover, they could also avoid grunting to decrease the sexual stigma even more. The results do not imply that homosexual men should hide their sexual orientation. The study just provides knowledge how homosexual men are perceived and indications for those who would like to utilize them.

Another main take away from this study is that gay men are less sexualized when they grunt. Therefore, if the interest of gay men is to decrease the extent to which others think they objectify themselves, then they could apply this finding and practice grunting. Nethertheless, combining this with the previous finding one should be aware that the grunting behaviour in the gym also leads to being perceived as less masculine and attractive as a gay men.

Therefore, it majorly depends on the interest of the person.

Limitations & Further Research

The present work has several limitations. To begin with, the methodology could have impacted our results due to the video the participants have seen. Unfortunately, the sound quality of the used video was not extremely clear. Moreover, it can be argued that the

grunting of the actor was not always in a manner that someone else would consider as grunting. Therefore, in further research, it should either be used a more qualitative video, or the research should be directly conducted in a lab to see if differences occur as a reason for that. Furthermore, the nature of our study was quite explorative because of a lack of prior research on this topic. Our unexpected findings, such as lower perceived masculinity for grunting behaviour, should therefore be seen in a critical light and can be used as a reference point for further studies. Moreover, the extent of our implications should be taken with a grain of salt because most of our results were considerably more on the lower side concerning effect size.

Adding to that, other aspects should be kept in mind for future research. Starting with the actor in the video, researchers could try to replicate our study with a different-looking actor, such as an extremely muscular man to evaluate if a difference can be detected. They could also prioritize the gender differences in the sample. In our study, most of the participants were female and either no or casual gym-goers. In a matter such as grunting in the gym, this might have a significant effect since grunting is seen as a learned behaviour (Lev & Hertzog, 2021) that seems to be performed more by men as mentioned previously. Therefore, women might have a different judgement regarding this behaviour compared to men. Resulting from that, a study with mainly men participants could be of interest. Lastly, our sample mainly consisted of participants from the US, which is assumed to be a WEIRD country. Thus, our sample was from western, educated, industrialized, rich, and democratic countries (Azar, 2010). This restricts the external validity of our study. Especially, in a matter such as homosexuality, social acceptance can vary enormously depending on the country. Therefore, it is important to look out for this in future studies and might even consider it an extra variable that could affect the outcomes.

Conclusion

This study is the first to empirically test for a causal effect of sexual orientation and grunting on perceived masculinity. We expected grunting to increase perceived masculinity. However, our results indicate the opposite effect. Therefore, gym-goers should be aware of this at their next gym session depending on how they want to get perceived. This causal relationship brings new light into a field that was not yet studied. However, due to the originality of this study further studies are needed to create better validity of our findings. Nonetheless, we created a foundation which further researchers can use and develop through their studies.

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Appendix

Demographic data

Variable	Experimental Group			
	Non-grunting Heterosexual	Non- grunting Homosexual	Grunting Heterosexual	Grunting Homosexual
Sample size <i>n</i>	88	89	78	78
Age M(SD)	34.60 ± 14.48	33.48 ± 12.25	36.66 ± 13.48	34.91 ± 12.10
Male (%)	27.30	20.02	20.50	26.90
Political Ideology (1=very liberal, 7=very conservative)	3.035 ± 1.64	3.20 ± 1.71	3.29 ± 1.67	3.25 ± 1.79
Self-rated socioeconomic status (1= high SES, 10=low SES)	5.51 ± 1.78	5.71 ± 1.66	5.56 ± 1.88	5.79 ± 1.57