

**Grunting speaks louder than words – Perceptions of Men Grunting in the Gym**

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## Abstract

The gym is a gendered space and grunting could be one mechanism that is helping to sustain this divide. This research examines how grunting by men in the gym is perceived in relation to masculinity, dominance, social attractiveness, and task attractiveness. The hypothesis was that participants in the grunting condition perceived the target to be more masculine, more dominant, higher in social attractiveness, and higher in task attractiveness. We used a UK sample of 327 participants of which 165 were males and 162 were females. The participants were randomly assigned to two conditions: grunting and no grunting. Here they were either subjected to a video of a man in the gym working out and grunting, or just breathing. This was followed by questions assessing the aforementioned variables. The results showed a perceived decrease in the grunting condition for masculinity, social attractiveness, and task attractiveness, and an interaction effect between condition and gender for dominance. Besides the interaction effect for dominance, there was no significant difference between the perception of women and men. The results suggest that grunting is perceived more negatively as it decreases masculinity and social and task attractiveness. Additionally, we concluded there seems to be a discrepancy of how men think they are perceived grunting to how they are actually perceived. It was concluded that grunting should not be tolerated in gyms as it is perceived negatively and takes up space, and genders the gym.

*Keywords:* Grunting, Gym, Men, perception, Masculinity, Dominance, Social attractiveness, task attractiveness

## **Grunting speaks louder than words – perceptions of men grunting in the gym**

How much of our behaviour is socialised? How much is innate? Looking at masculinity and femininity, these questions go even beyond the long-standing debate of nature versus nurture, as these concepts are potentially very deeply socialised. We grow up learning how to behave as a girl or as a boy. This differentiation starts as soon as we are born. Blue or Pink. The expectations placed upon us, what sports we choose to do, and most importantly how we are supposed to conduct the sport we do. It is a social psychological need that we try to fit in and adhere to social norms (Fiske, 2018). Nowadays, especially in Western society, there might be more freedom and acceptance of what kinds of sports we want to participate in. However, there still seem to be socialized norms in how we conduct these forms of exercise. An example of this that most people are probably familiar with, is the gym. We can probably all conjure up an image of a big muscular man lifting weights and on his exhale making a loud grunting noise, directing the surrounding gymgoer's attention to his performance. Grunting could potentially be an example of a socialized construct that sustains the divide between male and female and supports gendered norms. This paper aims to investigate to what extent grunting affects the perception of masculinity and sustains the divide between men and women in the gym.

The literature defines grunting in the context of heavy physical exertion such as weightlifting, as a maximum effort-generated noise (Morales et al., 1999). As many different noises can be produced during heavy sports, the differentiation made by Lev & Hertzog (2021) has been adapted in this paper. The distinction made is that “forced exhalation is a breathy, airier, sound, whereas grunting is guttural” (p. 3). Grunting appears in different sports contexts with different purposes. In martial arts, grunting is encouraged and used to distract opponents, leading to slower and more error-prone responses (Sinnott et al., 2018). Grunting in the context of tennis matches can be used as a strategy by players to make their

serve more difficult for their opponent to anticipate (Callison et al., 2014; Farhead & Punt, 2015). In tennis, grunting has been shown to increase force production (O'Connell et al., 2014; O'Connell et al., 2016). In the context of the gym, however, there appears to be no improvement in force production (Morales et al., 1999). One paper emphasizes that grunting is a bodily reaction that women also produce, but attempt to suppress (Brace-Govan, 2004). Lev and Hertzog, (2021) highlight that grunting is socialized and done voluntarily for the purpose of social recognition. There is limited research available on the effects of grunting in the gym specifically. We want to address this gap by examining how men grunting is perceived in the gym. Is grunting something that should be tolerated in the gym?

The gym has a predominantly male origin and history. The gender dynamics in gyms are changing, but the gym remains a gendered space (Brace-Govan, 2004; Coen et al., 2020; Johansson, 1996). Grunting might be used as an instrument to maintain this divide, as well as to appear more masculine/ attractive and knowledgeable. Lev and Hertzog (2019) conducted a qualitative study looking at how grunting in the gym is perceived. There is however no quantitative research on this. We conducted an experiment that looked more closely at how others perceived men grunting in the gym. If perceptions of grunting in general are not positive, there might be a discrepancy between how men think grunting is perceived to how it is actually perceived. As we were also interested in examining whether there might be a gender difference in the perception of grunting, leading men to perceive it more positively and therefore intentionally grunt, our sample was mixed with binary genders: Men and Women. Focusing on a specific type of grunting in a very specific environment (the gym), our sample consisted of gym-goers varying in the regularity of gym attendance.

This was a bachelor thesis project where several different variables were examined, but this paper looked at the following four variables. The first variable of interest was the perception of masculinity. Here we looked at a more general masculinity as well as a more

traditional view of masculinity. The second variable was social dominance. The third variable was social attractiveness. The last variable that was examined, was task attractiveness which explored whether the individuals grunting were asked for training advice more often.

### **Perceived Masculinity**

Masculinity is defined by the general attributes and behaviours exerted by men, that vary in culture and social context (Ferguson, 2010). Sport plays a role in constructing self-identity and is therefore very interconnected with masculinity (Adams et al., 2010; Messner, 1990; Messner, 1989; Swain, 2006). Research has found athletes to have a higher rate of conformity to traditional gender norms (Ramaeker & Petrie, 2019; Steinfeldt & Steinfeldt, 2012; Walsh et al., 2021). Bem's sex role inventory (BSRI; Bem, 1974) describes a more traditional masculinity, including traits that are associated with assertiveness, independence, and dominance. Traditional gender roles play a large role in gym-going behaviours (Lev & Hertzog, 2017; Schrijnder et al., 2020). Gym attendance goals for women are more linked to weight loss and toning the body, leading to a predominant use of cardio machines. For men, on the other hand, goals are more linked to becoming stronger and building muscle, leading to a greater focus on weight training. (Caudwell & Keatley 2016; Coen et al., 2018; Prichard & Tiggemann, 2008). This focus on conformity to gender norms as well as the tendency for men to focus on weight training could lead to men grunting in the gym to appear more masculine. Accordingly, the first hypothesis is that grunting will be perceived as a more masculine trait, and would consequently strengthen the gruntee's masculinity to viewers.

### **Perceived Social Dominance**

Social dominance can be defined as someone being influential or socially central in a group or situation and is also linked to increased aggression (Rodriguez-Santiago et al., 2020). Watkins et al. (2010) found a link between social dominance and masculinity,

indicating that more masculine features are simultaneously perceived as more dominant. The gym is a gendered space, where certain exercises are associated with men and more masculine traits, and certain exercises are associated with women and more feminine traits (Brace-Govan, 2004; Coen, 2018; Turnock, 2021). Because of this partitioning of space, social dominance in the gym could be connected to how much-perceived space someone is taking up. How the space is gendered and how certain norms apply can be seen as a reflection of changing norms in society (Doan, 2010; Johansson, 1996; Pearse, 2016). The prediction for this variable is that grunting is used as a tool to strengthen this divide of space in the gym, by helping to claim more space. Accordingly, the second hypothesis is that grunting will be perceived as more dominant, therefore increasing the perception of dominance in the grunting condition.

### **Perceived Social Attractiveness**

Social attractiveness is a concept that encompasses physical attractiveness as well as appeal in general social situations (Reis et al., 1980). Humans need to feel accepted socially by others and this need influences social interactions as well as relationships (Gilbert, 1997). Brewer and Howarth (2012) found that men engaging in sports, specifically more aggressive sports, were rated more attractive. More aggressive sports lead to more grunting, as we previously established grunting is a vocalisation of maximum effort exertion (Morales et al., 1999). Grunting could be partially used to increase social and physical attractiveness by increasing the perception of the aggressiveness or difficulty of the lifting. Accordingly, the third hypothesis is that people in the grunting condition will perceive the target to be more socially attractive.

### **Perceived Task Attractiveness**

The last variable of interest is that of task attractiveness, which includes perceived competence and asking for training advice. There is very limited research on this, especially in a sports context. The variable can however be operationalised based on traits, that in other contexts, lead to someone being sought out for advice. Appearing knowledgeable and being seen as an expert are examples of those traits (Brooks et al., 2015). Help-seeking has previously been defined as “the act of asking others for assistance, information, advice, or support” (Hofmann et al., 2009, p. 1262). The prediction for this variable is that grunting improves how capable someone appears, leading to others asking them for training advice more. Accordingly, the fourth hypothesis is that participants in the grunting condition will perceive the target to be higher in task attractiveness.

## **Overview of the Study and Hypothesis**

In summary, this paper is looking more closely at the effects of grunting on the perception of masculinity, as well as social dominance, social attractiveness, and lastly task attractiveness. In order to do this, we conducted an experiment. The hypothesis for the experiment is that grunting increases the perceived degree of masculinity, as well as social dominance and social attractiveness. Grunting also increases the likelihood of someone asking for training advice. We also tested whether there would be differences between male and female participants, but due to a lack of previous research, we did not make predictions regarding gender.

## **Method**

### **Participants and Design**

We aimed to recruit 320 participants in order to have 80 participants per cell in the experiment design. A total of 342 participants answered the online questionnaire, all recruited via Prolific ([www.prolific.com](http://www.prolific.com)), and exclusively from the United Kingdom. Fifteen



participants were excluded from the study for various reasons: One person declined consent for data processing, eleven individuals withdrew from the study, and three people failed the manipulation check. There was no exclusion criteria for age. Initially, the intention was to exclude respondents who do not frequent the gym. However, due to an error by Prolific, the exclusion was not successful, and consequently, the decision was made to include these respondents in the analysis. This resulted in a final sample size of  $N = 327$ . The mean age of the remaining participants was 42 years, with a range from 18 to 78 years ( $SD = 12.7$ ). Gender distribution was nearly equal with 49.5% identifying as female, and 50.5% identifying as male.

The study was registered by the Ethical Committee of the Faculty of Behavioral and Social Sciences at the University of Groningen (EC-BSS) and was pre-registered (AsPredicted #171791). To investigate the relationship between grunting and perceptions of masculinity and other variables, a 2x2 design was used in the experiment. The independent variables were gender (male vs. female) and grunting (grunting vs. no grunting). Participants were randomly assigned, based on their gender, to either watch a video featuring a man grunting or one without grunting. This allocation resulted in the following conditions: Female and grunting ( $N = 77$ ), female and no grunting ( $N = 85$ ), male and grunting ( $N = 85$ ), and male and no grunting ( $N = 80$ ).

## **Procedure**

Once participants opened the survey, the first thing they saw was a form detailing information about the study and requesting informed consent. Participants had the option to either give or decline their consent to participation, without any consequences for them. Thereafter the participants were exposed to attention and sound checks. Participants had to fill in the right digit span to continue the study, to ensure they could hear the sound in the

video as well. This was a crucial step, as this research relies on the participants of the target's grunting (or lack thereof). Therefore, it was important to make sure the potential grunting in the video would be properly heard by the participants.

Afterwards, the following text was shown: "Now you will see a video of Jamie working out in the gym. Jamie likes working out at the gym regularly. In this video, he is the person wearing a black T-shirt and green shorts. Please now watch the following video carefully. You will answer some questions evaluating Jamie based on his workout." Beneath the text, the participants could start the video of a man working out in a gym environment. Participants in the grunting condition were shown the man grunting during exercising and participants in the no grunting condition were shown the same video with the exception of the grunting noise. In the no-grunting condition, the man was solely exhaling. After watching the video, participants in both conditions were asked the same questions.

When participants went to the next page, they were asked the three following questions to check if they paid attention: "What is the name of the man working out?", "What is the man wearing in the video?" and "Was the man in the video making noisy breathing sounds (i.e., grunting)?", which served as a manipulation check.

After the manipulation check, participants answered questions about the measures outlined below. On the last page, participants were asked to fill in the following four questions regarding the demographic. Participants were asked about their (1) age, (2) gender, (3) how often they go to the gym, and (4) whether they frequent a mixed-gender gym. Finally, the participants were asked for their Prolific ID, were debriefed about the aim of the study, thanked and paid for their participation in the study.

## **Materials**

To test our hypotheses, a 44-second long video was created in which a white male, who was 23 years of age, performs four different exercises in strict form: Incline dumbbell bench-press, dumbbell biceps curls, overhead triceps extensions at a cable tower, and back-squats at a smith machine. Each exercise was recorded separately and cut together to create the final video. For each exercise, three repetitions were performed. These exercises were chosen because they are commonly implemented in the male trainings-regime, while also prioritizing free weights to foster the association to masculine norms regarding the choice of equipment. The weights were chosen in a fashion to justify the grunting noise in the grunting condition, accordingly 22kg, 16kg, 35kg, and 60kg respectively (excluding the weight of the Barbell). The man was filmed from about 2.5 – 3 meters using an iPhone 14 and a tripod. To ensure good audio quality, a separate microphone was used, placed close to the target. The man was filmed from an 80 – 90-degree angle, except for a 135-degree angle used for the back squat, to ensure that the facial expressions would not influence the grunting vs the no-grunting condition, while still making it possible for the participant to answer questions about the measured variables, e.g., attractiveness. While there was no music in the gym some air-conditioning noise from the building could be heard. During some exercises, one person worked out in the background or on the side, to facilitate an authentic atmosphere of a gymnasium as experienced by most gym-goers. Lastly, and most importantly, the video in the grunting and no-grunting conditions were the same, with the only difference being the grunting noise, which was edited out after filming.

## **Measures**

The complete list of items for each measure is presented in Appendix A.

### **Perceived Masculinity**

We aimed to examine the extent to which the participants perceived the target to be masculine. We made use of the following self-constructed singular item to assess this construct: “To what extent do you think [the target] is masculine?”. The answer options were presented on a scale of 1 - not at all; to 7 - entirely. Additionally, the BEM Sex-Role Inventory (BSRI; Bem, 1974) specified below, measured specific traits about masculinity; as opposed to the aforementioned single item measuring the broad concept of masculinity.

### **Traditional Male Gender Norms**

We assessed participant’s perceptions of traditional male gender norms through three items derived from the BEM Sex-Role Inventory (BSRI; Bem, 1974). Participants were asked to what extent they rated the man in the video to be (1) “Assertive”, (2) “Independent”, and (3) “Ambitious” ( $\alpha = 0.80$ ). The anchors ranged from 1 - not at all; to 7 - entirely. The items were averaged to calculate a single composite score for perceived traditional masculinity.

### **Perceived Social Dominance**

Here participants were asked to rate to what extent they consider the target to be socially dominant. The operationalization of this construct was derived from Rodriguez-Santiago et al. (2020)’s study, which assimilated male social dominance to aggressiveness, leadership traits and as being socially central. The items for social dominance ( $\alpha = 0.85$ ) included “I think this person typically takes on a leadership role in social settings”. The answer options were presented on a scale of 1 - strongly disagree; to 7 - strongly agree. All the items were averaged to compute one composite score for perceived social dominance.

### **Perceived Attractiveness**

Participants were asked to rate the target’s attractiveness. This construct was assessed using 9 items adapted from McCroskey & McCain (1974)’s study measuring interpersonal attractiveness. This measure consisted of three distinct domains: social attractiveness, task

attractiveness and physical attractiveness. Participants were asked to indicate to what extent they agree with different statements. The items for social attractiveness ( $\alpha = 0.79$ ) included “I would like to have a friendly chat with him”. The items for physical attractiveness ( $\alpha = 0.78$ ) included: “I think the man is handsome”. The items for task attractiveness ( $\alpha = 0.85$ ) included: “I have the feeling that he is a very good weightlifter”. Overall, the construct of attractiveness had a good reliability ( $\alpha = 0.85$ ). The answer options were presented on a scale of 1 - strongly disagree; to 7 - strongly agree. All the items were averaged to compute one composite score for perceived attractiveness.

## Results

The statistical software “SPSS” was used to conduct the analysis. To examine the effect of condition and gender on the perception of masculinity, dominance, social attractiveness, and task attractiveness, we ran a two-way analysis of variance (ANOVA). The following assumptions were checked. To assess normality, the Q-Q plots were visually inspected and approximate normality was determined for masculinity, dominance, social attractiveness as well as task attractiveness. Participants were randomly assigned to the conditions fulfilling the independent sampling assumptions. Levene’s test was performed for the four variables: masculine, dominance, and task attractiveness, therefore fulfilling the homogeneity of variances. For social attractiveness, there was a violation, that was however minor, allowing us to proceed with the ANOVA analysis.

### Perceived Masculinity

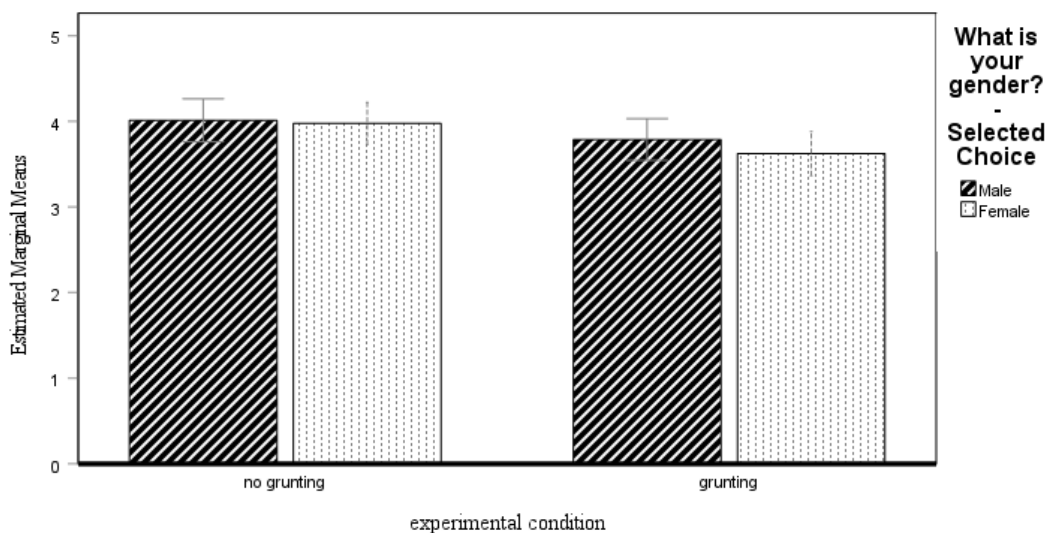
Masculinity was operationalized based on one item. Results showed that there was a significant difference between conditions of grunting and no grunting in the perception of masculinity  $F(1,323) = 5.19, p = .023$ . There is a small effect size  $\eta_p^2 = .016$ . Looking at the descriptive statistics, in the grunting condition, the mean perceived masculinity was lower

with a total of  $M = 3.71$ ,  $SD = 1.16$ . In the no grunting condition, the perceived masculinity was higher with a total mean of  $M = 3.99$ ,  $SD = 1.13$ . The marginal means are portrayed in Figure 1. This confirms a statistically significant decrease in perceived masculinity in the grunting condition. There is no significant difference between males and females in the perception of masculinity  $F(1,323) = 0.63$ ,  $p = .429$ . The interaction between condition and gender here was not significant  $F(1,323) = 0.26$ ,  $p = .612$ .

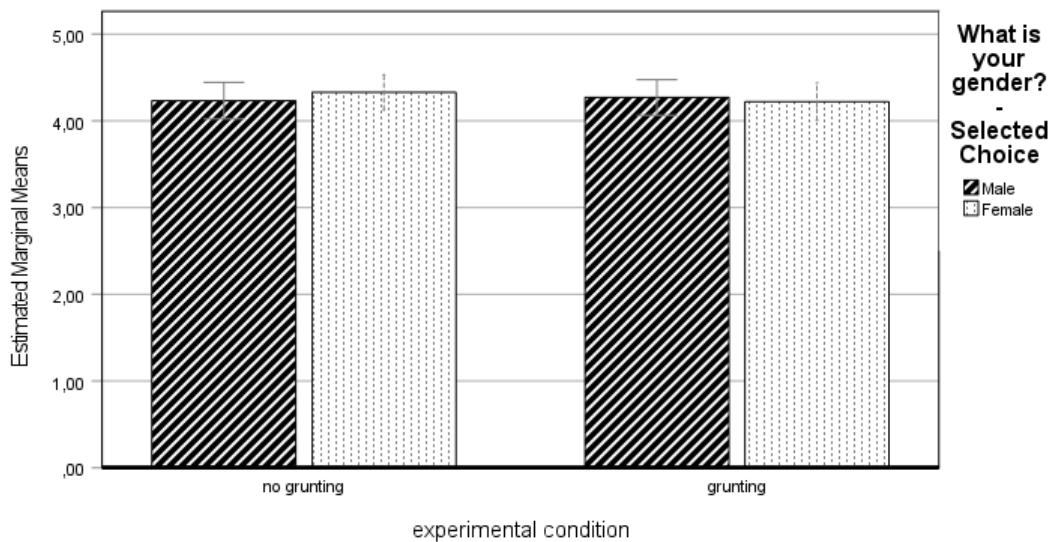
We also looked at traditional gender norms which we measured using three items from the BEM sex role inventory. Results showed that there was no significant difference between conditions of grunting and no grunting in the perception of masculinity  $F(1,323) = 0.11$ ,  $p = .737$ . There is no significant difference between males and females in the perception of masculinity  $F(1,323) = 0.05$ ,  $p = .828$ . The interaction between condition and gender was also not significant  $F(1,323) = 0.47$ ,  $p = .492$ . The marginal means are portrayed in Figure 2.

**Figure 1**

*Estimated Marginal Means of Masculine*



Error bars: 95% CI

**Figure 2****Estimated Marginal Means of Meanbem**

Error bars: 95% CI

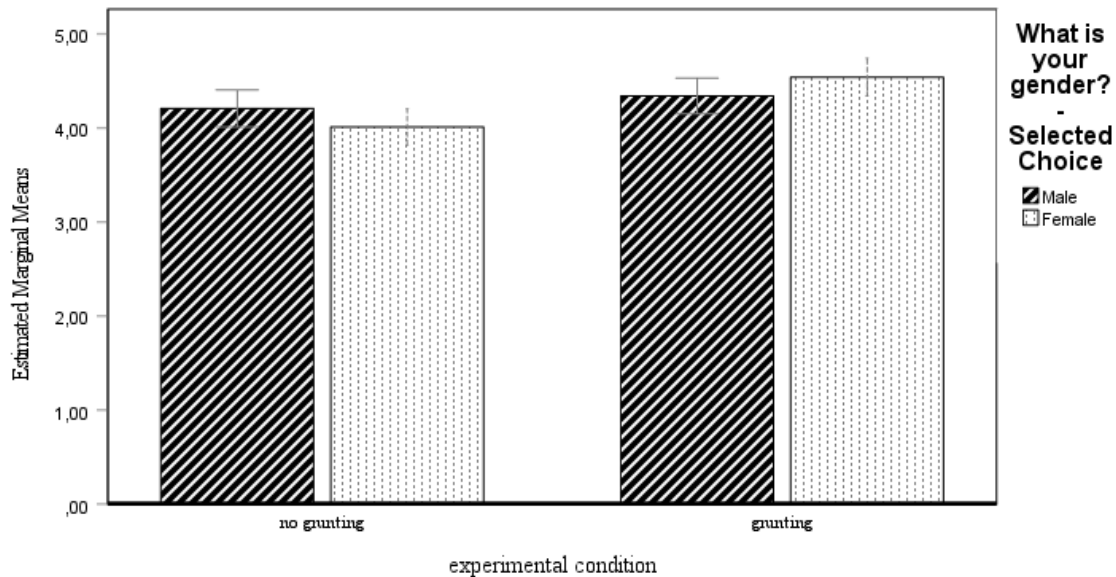
**Perceived Dominance**

Dominance was operationalized based on three items with an average mean of 4.27. Cronbach's Alpha for masculinity was .85. There is a significant difference between conditions of grunting and no grunting in the perception of dominance  $F(1,323) = 11.22, p < .001$ . There is a small effect size  $\eta_p^2 = .034$ . Looking at the descriptive statistics, in the grunting condition, the mean perceived dominance was slightly higher with a total of  $M = 4.44, SD = 0.83$ . In the no grunting condition, the perceived dominance was slightly lower with a total mean of  $M = 4.11, SD = 0.95$ . The marginal means are portrayed in Figure 2. There is no significant difference between males and females in the perception of dominance  $F(1,323) = 0.00, p = .986$ . The interaction between condition and gender was significant  $F(1,323) = 4.02, p = .046$ . There is a small effect size  $\eta_p^2 = .012$ . This indicates that the condition (grunting) and gender depend on each other. Therefore it can be concluded that within this variable, grunting affects men and women differently, leading to different

perceptions of dominance. Because of the significant interaction effect, the main effects of both gender and condition have to be interpreted in the context of the interaction.

**Figure 3**

*Estimated Marginal Means of MeanDom*

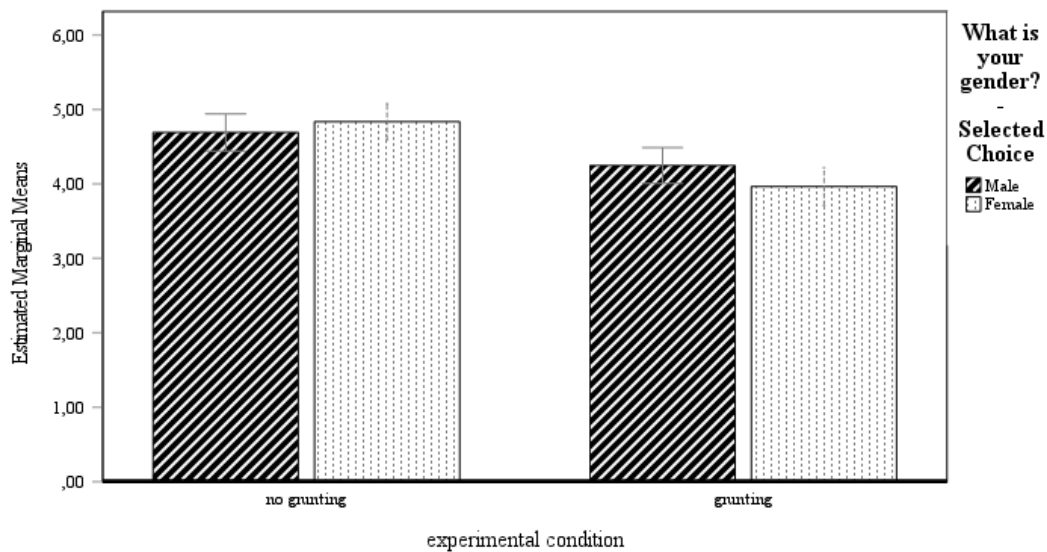


Error bars: 95% CI

**Perceived Social Attractiveness**

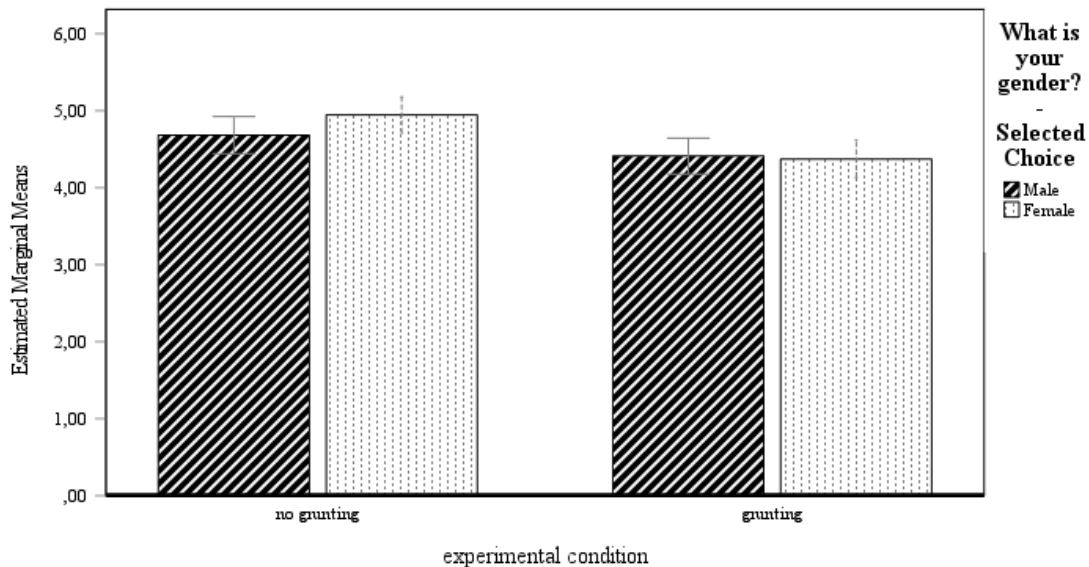
Social attraction was operationalized based on three items with an average mean of 4.44. Cronbach's Alpha for social attraction was .787. There is a significant difference between conditions of grunting and no grunting in the perception of social attraction  $F(1,323) = 35.25, p < 0.001$ . There is a medium effect size  $\eta_p^2 = .078$ . Looking at the descriptive statistics, in the grunting condition, the mean perceived social attractiveness was lower with a total of  $M = 4.11, SD = 1.15$ . In the no grunting condition, the perceived social attractiveness was higher with a total mean of  $M = 4.77, SD = 1.12$ . The marginal means are portrayed in Figure 3. There is no significant difference between males and females in the perception of social attractiveness  $F(1,323) = 0.3, p = .583$ . The interaction between condition and gender was not significant  $F(1,323) = 2.87, p = .091$



**Figure 4***Estimated Marginal Means of MeanSoAtt**Error bars: 95% CI*

### Perceived Task Attractiveness

Task attractiveness was operationalized based on three items with an average mean of 4.61. Cronbach's Alpha for task attractiveness was .853. There is a significant difference between conditions of grunting and no grunting in the perception of task attraction  $F(1,323) = 12.14, p < 0.001$ . There is a small effect size  $\eta_p^2 = .036$ . Looking at the descriptive statistics, in the grunting condition, the mean perceived task attractiveness was slightly lower with  $M = 4.39, SD = 1.08$ . In the no grunting condition, the perceived social attractiveness was higher with a total mean of  $M = 4.82, SD = 1.11$ . The marginal means are portrayed in Figure 4. There is no significant difference between males and females in the perception of social attractiveness  $F(1,323) = 0.84, p = .36$ . The interaction between condition and gender was not significant  $F(1,323) = 1.55, p = .215$ .

**Figure 5***Estimated Marginal Means of MeanTaskAtt*

Error bars: 95% CI

Due to an error in the program, people who did not go to the gym were also able to participate in the study. The analysis was run with “gym” as a covariate and there was no significant difference. To not lose power, we included the participants.

## Discussion

The purpose of this study was to gain a better understanding of how grunting affects the perception of masculinity in the gym. We tested the effects of both conditions (grunting vs. no grunting) and gender (binary: female vs male) on the perception of masculinity, dominance, social attractiveness, and task attractiveness. Contrary to our predictions, we found that participants in the grunting condition perceived the man in the video to be less masculine, less socially attractive, and lower in task attractiveness. As predicted, in the grunting condition, we found the participants perceived the man as more dominant. Moreover, contrary to our predictions, there was no significant difference in perception between men and women. For dominance, however, there was an interaction effect between

condition and gender. There is limited research in this area, and this is the first quantitative study looking at the effects of grunting in the gym.

### **Perceived Masculinity**

We hypothesized that grunting was viewed as a masculine trait, therefore making the target perceived as more masculine. Research outcomes however suggest that masculinity was perceived to be higher in the no grunting condition, implying that it is perceived as emasculating. These findings are not consistent with the idea that athletes have a higher rate of conformity to traditional gender norms (Ramaecker & Petrie, 2019; Steinfeldt & Steinfeldt, 2012; Walsh et al., 2021). Why partake in a behaviour that is not seen as masculine, if conforming to masculinity is the goal? In my view, the most compelling explanation for this discrepancy is that grunting is not seen as a natural part of heavy lifting by others. There are other contexts in which grunting occurs more naturally, for example in tennis grunting can be used as a strategy by players (Callison et al., 2014; Farhead & Punt, 2015), as well as in martial arts (Sinnott et al., 2018). This suggests that it is not clear to people grunting, how it is perceived by others. If grunting is not seen as necessary or natural in the gym, this results in grunting having a more repelling effect which explains the decrease in characteristics viewed as attractive such as masculinity (Scott et al., 2010).

For the BEM sex role inventory measuring more traditional gender norms, there were no main effects as well as no interaction effect (BSRI; Bem, 1974). This suggests that we perceive masculinity differently from how BEM described it with assertiveness, ambitiousness, and independence. There appears to be no overlap with the single-item masculinity measure. This could suggest that we have shifted forward from BEM's sex role inventory to a more modern type of masculinity. This idea of a changing and more “inclusive masculinity” has been gaining popularity. This includes different types of masculinity and

more fluidity than the traditional gender norms (Anderson, 2012; Anderson & McGuire, 2010; Warin, 2012).

### **Perceived Dominance**

Based on the premise that the gym is a gendered space (Brace-Govan, 2004), we hypothesized that grunting is used as a tool to strengthen the divide between men and women in the gym and claim more space. Grunting would therefore be perceived as more dominant. Research outcomes showed that participants in the grunting condition did indeed perceive the man to be more dominant. In addition, an interaction effect between the condition and gender could be found. In the no grunting condition, males perceived the man in the video to be more dominant, but this effect flips in the grunting condition where females perceived the man as more dominant. These findings support our initial hypothesis that grunting takes up space and specifically has an effect on how women perceive the target. Social dominance is perceived as a positive trait, however, trait dominance is perceived less positively (Liu et al., 2021), and it is the latter we are interested in. Whereas past research has linked masculinity to dominance by finding masculine features to be simultaneously perceived as more aggressive (Watkins et al., 2010), the present study shows different perceptions of masculinity and dominance. Taken together these findings could indicate that grunting is not perceived as a normal feature of the gym.

### **Perceived social attractiveness**

Because men who partake in more aggressive sports are rated more attractive, (Brewer & Howarth, 2012) and grunting shows physical exertion, we hypothesized that grunting increases social attractiveness. Contrary to our prediction, the perceived social attractiveness was lower in the grunting condition therefore suggesting grunting decreases social attractiveness. These findings imply that grunting might lead to someone being viewed

as less socially attractive and therefore more negatively. This could mean, socially we prefer people, who do not grunt. This might also be due to grunting in the gym being viewed as unnecessary and disruptive.

### **Perceived task attractiveness**

We hypothesized that grunting illustrated the difficulty of the lift, making the target appear more competent and leading to others being more likely to ask them for training advice. The research results however found that the opposite was the case and that participants in the grunting condition were less likely to ask the man for training advice. Task attractiveness was the only variable not only measuring perception but also measuring approachability and possible future behaviour based on the video. Task attractiveness being lower in the grunting condition suggests people would be less likely to approach and work out with the person grunting. It might be that either grunting is perceived as less competent and knowledgeable leading to the target scoring lower in task attractiveness. Alternatively, the target might appear less approachable which cancels out any increase in competence through grunting, also leading to a lower score in task attractiveness.

### **Implications**

Taken together, it can be concluded that overall positively perceived characteristics, such as masculinity, social attractiveness, and task attractiveness) were negatively correlated with grunting. Dominance, however, was positively correlated. Grunting did not increase any desirable traits or make the man in the video appear more attractive or approachable. This leads us to ask why people grunt. Men who grunt must do so because they believe it is perceived positively or has some positive effect. We found there to be no positive effect, rather a more negative one. One hypothesis mentioned in the introduction was that there could be a discrepancy between men and women in the perception of grunting, leading men

to attribute more positive qualities to it and therefore grunt. Overall, there was no significant difference between the perception of men and women so this was not supported.

Consequently, the following could be concluded: First, there might be a large discrepancy between how men who grunt believe they are being perceived to how others perceive them. Second, grunting might indeed be used as a tool to suppress and dominate others in the gym. Specifically, women perceived the grunting man to be more dominant, therefore this applies particularly to women.

We carefully considered the setup of the experiment based on other research which is a clear strength. For example, the exercises chosen were selected to conform to the norm of what men typically do in the gym (Coen et al., 2018). We created a “normal” and social gym environment by having others doing exercises in the background. The angles in which we filmed, how much of the man was visible as well as the sound was thoroughly discussed and carefully executed. The variables measured were also operationalized based on other research inventories that applied to our context. Because perception also has a subjective factor we dressed the man neutrally and avoided showing his face.

The gym as a gendered space (Brace-Govan, 2004) (partially) reflects the current societal norms and trends (Johansson, 1996). Understanding this divide between men and women in the gym can help us understand the divide outside of the gym and therewith eventually bridge the gap. Previous research established that grunting in the gym is not necessary (Lev & Hertzog, 2021), and women for example are socialized to attempt to suppress it (Brace-Govan, 2004), showing we can exercise without it. Based on these findings, we can conclude that grunting in the gym does not need to be tolerated. Grunting has a negative effect and lets the individual grunting dominate over others and take up space. This is not behavior that should be seen as the norm in the gym, as we strive for a space that belongs to everyone where respect and reciprocity replace taking up space.

## Limitations

Our aim originally was to select participants who regularly go to the gym; however, we had a large number of participants who were not gym goers in our sample. We reran the analysis excluding them, but because the results did not change, we included them in the analysis. Future research should only recruit people who are familiar with gym environments. Another limitation is that the average age of our sample was 42, which is not representative of the average age of people going to the gym. Future research could look at a younger group that more closely represents the current trend of our society. The sample we used was from the UK which is not representative of different cultures. Future research could look at differences among different cultures. Certain norms apply in the UK that might affect the perception of grunting; this could be different in more outgoing, louder cultures. Furthermore, our sample was heterosexual, results could differ in participants with varying sexual orientations. The context of the exposure also needs to be acknowledged. The experiment is designed as a one-time exposure to the video while sitting behind a laptop. Seeing someone grunting in real life might be perceived differently. The effect might also be different if the person grunting is someone the participant is familiar with. Furthermore, the study looks at a man grunting. Further research could explore how others perceive women grunting. More positive traits such as attractiveness and masculinity were negatively correlated with grunting, while dominance was positively correlated with grunting. It could be interesting to further explore if grunting is perceived as repelling or even scary. Because the experiment calls for a very specific situation, it is difficult to relate the findings to a more general setting. The circumstances must be taken into account when generalizing the findings.

A key finding of the present research is the discrepancy between how men think they are perceived when grunting to how others actually perceive it. To further understand this

discrepancy men could directly be questioned about their grunting behaviours and how they think they are being perceived.

Despite these limitations, the present study provides clear support that grunting is perceived overall negatively and has a dominating effect. We hope this research stimulates further investigation into how and why spaces are gendered and how to bridge this gap in the long term.



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## **Appendix A: Measurement Items**

### **Scale Item for Aggression**

1. To what extent do you think Jamie is aggressive?

### **Scale Items for Masculinity**

1. To what extent do you think Jamie is masculine?

### **Scale Items for Traditional Male Gender Norms**

1. To what extent do you think the man is assertive?
2. To what extent do you think the man is independent?
3. To what extent do you think the man is ambitious?

### **Scale Items for Social Dominance**

1. This person tends to assert their opinions and preferences in social settings
2. I think this person typically takes on a leadership role in social settings
3. This person maintains control and influence over others in social settings

### **Scale Items for Social Attractiveness (McCroskey & McCain, 1974)**

1. I would like to have a friendly chat with him
2. We could never establish a personal relationship with each other
3. He wouldn't fit into my circle of friends

### **Scale Items for Physical Attractiveness (McCroskey & McCain, 1974)**

1. I think the man is handsome
2. He is not very good-looking
3. I find him very attractive physically

### **Scale Items for Task Attractiveness (McCroskey & McCain, 1974)**

1. I have the feeling that he is a very good weightlifter
2. I have confidence in his ability to give me gym advice
3. If I worked out with him, I would accomplish a lot