

King of the Gym? Investigating the Effect of Grunting on Masculinity Perceptions

Carla Freels

S4652452

Department of Psychology, University of Groningen

PSB3E-BT15: Bachelor Thesis

Supervisor: Dr. Yasin Koc

Second evaluator: Chieh-Yu Lee, MSc

In collaboration with: Furat Albarqawi, Lina Bahajji, Nelly Corrigan, Albert Gerbrandij, Max
Grunert

February, 2024

A thesis is an aptitude test for students. The approval of the thesis is proof that the student has sufficient research and reporting skills to graduate, but does not guarantee the quality of the research and the results of the research as such, and the thesis is therefore not necessarily suitable to be used as an academic source to refer to. If you would like to know more about the research discussed in this thesis and any publications based on it, to which you could refer, please contact the supervisor mentioned.

Abstract

Grunting, a low and guttural sound, has a longstanding tradition in sports such as tennis and bodybuilding. However, empirical research on the phenomenon remains limited. This study investigated how grunting is perceived in contemporary gym environments. Based on mostly anecdotal and qualitative evidence, we hypothesized that grunting would increase perceptions of masculinity, social dominance, and task attractiveness. In an experimental design, participants were randomly assigned to watch a video featuring a male target either grunting or not grunting. A series of 2x2 ANOVAs was used to assess the effects of gender (male vs. female) and experimental condition (grunting vs. no grunting) on the dependent variables. The sample consisted predominantly of gym-goers from the UK, recruited via Prolific. Analysis revealed that grunting decreased perceptions of masculinity and task attractiveness, while increasing perceptions of social dominance. These results suggest that grunting is generally perceived negatively, indicating a possible discrepancy between the grunTERS' intentions and the way they are perceived by others. Future replications should limit participants' age range and focus exclusively on gym-goers. Additionally, further research should explore the motivations behind grunting, and how perceptions change if the grunter is a friend of the observer.

Keywords: Masculinity, Grunting, Hegemony, Social Perception, Exercise

King of the Gym? Investigating the Effect of Grunting on Masculinity Perceptions

Regular gym-goers have probably encountered *him* already—or at least heard their friends vent about him. Perhaps they are even one of them. He is known as *the grunter*. Typically male, he fits the stereotype of what social media would call a gym-bro. The gym seems to be his second home, where he can be found in the free weights section. Presumably, he spends most of his time focusing on lifting weights, monitoring his daily protein intake, and meticulously keeping track of his macros. Yet, what truly distinguishes the grunter is his tendency to make loud and distracting noises during his training, making sure that he attracts the attention of everybody around him. These grunting individuals seem to be drawn to each other and often can be seen gathering. This phenomenon raises the question: Are they admired for their grunting, perhaps even seen as role models?

Some believe grunters seek attention, while others argue that grunting is a natural, unavoidable part of lifting heavy weights. Despite these contemporary perspectives, there is little research on the intentions behind grunting and how it is perceived by others. This paper explored how grunting and social perceptions intersect within gym culture. Specifically, we examined how grunting affects perceptions of the grunter's masculinity and social dominance, and whether people are willing to seek training advice from them.

Understanding the Role of Grunting

Grunting can be defined as an inarticulate, deep, and guttural sound (Dictionary.com, 2020) that is often used to express effort or pain. Loud grunting is common in many sports, with most research on the phenomenon coming from the domain of tennis. It is well known that tennis players make noises during their serves which significantly enhances their performance, for example, by enabling them to hit the ball harder (O'Connell et al., 2014). However, there are also social repercussions for grunting tennis players, and despite efforts to regulate or discourage excessive grunting, it persists.

The role of grunting during weight lifting in regular gyms is not well understood and has attracted little scientific interest, so far. While some claim that grunting aids performance, empirical evidence on this topic remains inconclusive. Morales et al. (1999) randomly assigned both professional and novice weightlifters to a grunting or non-grunting condition. They found no significant difference in force production, concluding that grunting does not facilitate performance. A more recent study (Smith & Smith, 2015) demonstrated the opposite effect. They found that loud grunting activates the autonomic nervous system, leading to an adrenaline rush and temporary increase in strength. Grunting could be seen as a way of “psyching up,” a cognitive strategy that has been linked to enhanced performance (Tod et al., 2003). In this context, grunting may serve as a disinhibitor which allows the grunter to tap into new sources of power. In summary, there is reason to believe that grunting may improve performance in tasks where an explosion of strength or force is important. How these findings exactly relate to weightlifting is not yet definitely answered.

Research on martial arts suggests that extreme forms of vocalization, such as screaming, serve two primary functions: Increased strength and distraction of the opponent (Sinnott et al., 2018). Despite the absence of direct competition in the gym, grunting externalizes an internal struggle of self-improvement. Moreover, although the gym is not inherently competitive, the act of grunting could potentially contribute to transforming it into a more competitive environment. Like tennis and martial arts, lifting weights is an individualistic sport and the pursuit of physical perfection in weightlifting is inherently self-centered (Johannsson, 1996). Grunting while lifting signals a preoccupation with one's own performance, with little regard for others. This is evident as both men and women report feeling intimidated by loud grunting, leading them to avoid the free weights section (Coen et al., 2018). Despite encountering negative reactions, those who grunt persist in doing so, possibly because they perceive it as advantageous in some way.

Lev and Hertzog (2022) made two observations suggesting that grunting is primarily a socially constructed phenomenon, with the force increase playing a secondary role. First, they noted that grunting is predominantly performed by men while women refrain from it. Second, they observed that men could control the grunting if the situation demanded it. Thus, it can be inferred that men grunt to convey a certain image. Their qualitative study showed that grunting is often perceived negatively, especially by women. This hints at a possible discrepancy between the intentions of the grunter and the perceptions of those around him. While anecdotal evidence and research from other athletic domains propose several reasons for this behavior—including attracting attention, enhancing workout effectiveness, or signaling affiliation with specific groups—there remains a lack of empirical evidence regarding the intentions behind grunting in gym settings and how these individuals are perceived by others. This study aims to provide insight into one aspect of the phenomenon, by exploring the perceptions of males who grunt during exercising.

Masculinity Perceptions in Gym Culture

We began by investigating the effect of grunting on masculinity perceptions. The gym serves as a place of display for traditional masculinity, where gender is clearly segregated. Weightlifting is typically associated with masculinity, while cardio exercises are viewed as more female activities, each having their designated, separate areas (Coen et al., 2018). A significant aspect of masculinity pertains to physical characteristics: Sexual dimorphisms refer to trait differences between males and females. Male dimorphisms include a larger physical stature, a more muscular build and strength, and a deeper voice (Swaddle & Reiersen, 2002). Grunting also serves as a dimorphism, indicative of male sex (Raine et al., 2017). The degree to which an individual possesses these characteristics influences social categorization.

Social categorization is a universal type of information processing that helps us to understand and navigate our environment by placing others into categories based on their shared characteristics (Whitley & Kite, 2016). Individuals tend to categorize based on readily observable characteristics, so called basic characteristics. In our society, where gender is typically viewed as binary, categorizing based on gender is accessible and familiar to most people. Weißflog and Grigoryan (2024) found that categorization is easier and quicker for gender-conforming individuals. Thus, we can infer that encountering a man in a stereotypically male environment, like the free weights area of the gym, engaging in behavior associated with masculinity, such as lifting weights, likely leads to a quicker categorization in terms of gender and, consequently, increased perceptions of masculinity. The specific role of grunting in this process is not documented. We hypothesized that grunting will be interpreted as a masculine behavior, as intended by the grunter, which facilitates the categorization process and leads to higher perceptions of masculinity.

Masculinity can also be conceptualized as a concept that is distinct from biological male sex and refers to traits, behaviors, and attributes traditionally associated with men (Kachel et al., 2016). These traditionally masculine traits typically include assertiveness, independence, and ambition (BSRI; Bem, 1974). Masculinity is a heterogeneous concept and is closely linked to gender roles which encompass social expectations of what it means to be a man. In gym settings, there seems to be a gendered double standard regarding grunting. While it is normalized for men, women often refrain from grunting due to fear of being sexualized (Coen et al., 2018). Over time, grunting becomes an acceptable social norm, however, only for men. As women are not typically encouraged to grunt or breathe loudly, they never acquire these behaviors. These findings suggest that women may have a more negative view of grunting than men. Overall, we predicted that grunting will lead to being perceived as more

masculine. Furthermore, we expected this effect to be stronger for men as they generally face fewer negative consequences for their grunting compared to women.

Grunting and Social Dominance: (Re)claiming the Space

Next, we investigated the relationship between grunting and social dominance. The concept of social dominance is closely intertwined with masculinity, particularly hegemonic masculinity, which is the most valued form of masculinity in Western society (Connell & Messerschmidt, 2005). Social dominance, defined as having influence over certain groups (Rodriguez-Santiago et al., 2020), is a central component of hegemonic masculinity. The concept of hegemony describes dominance achieved through cultural norms and institutional practices. Men engage in behaviors that help shape and reinforce societal perceptions of their masculinity, suggesting they are “doing masculinity” as they are “doing fitness” (Johansson, 1996; Wagner, 2016). By performing these behaviors, men influence and establish the prevailing norms within the gym environment. Hegemonic masculinity, while not necessarily the most prevalent form of masculinity, is highly normative (Connell & Messerschmidt, 2005). Thus, even a single individual grunting may be sufficient to assert male dominance.

Hegemonic masculinity manifests itself in gym culture in many ways. For example, women report feeling uncomfortable or being harassed at the gym because of men. Certain gyms already try to promote inclusivity by implementing measures such as prohibiting shirtless workouts for men or displaying signs discouraging weight throwing and grunting. Also, women face more barriers such as low self-image which is often exacerbated by the presence of mirrors in the gym, leading to a feeling of being constantly scrutinized (Turnock, 2021). Furthermore, gyms reinforce stereotypes about gender and body shape, leading to an objectification of women (Johansson, 1996). Masculinity is not a fixed construct; it is performed and can change over time (Wagner, 2016). We proposed that grunting may be a

component of this performance and thereby reinforce gendered power structures with men in dominant positions. Consequently, women may go to the gym less frequently and exercise less, with negative consequences for their health.

It is important to note that these barriers are not exclusive for women. Hegemonic masculinity is highly prescriptive, valuing only a very specific type of masculinity: one that is White, heterosexual, and able-bodied (Wagner, 2016). Coen et al. (2018) note that men who do not conform to societal standards of masculinity and body image also report feeling uncomfortable at the gym. As grunting embodies this dominant form of masculinity, we infer that men may also feel intimidated by it.

Traditionally, gyms have been male-dominated spaces, emphasizing attributes like athletic performance and muscle development. However, as fitness history evolved, gyms increasingly turned into a lifestyle phenomenon. Nowadays, these spaces are not solely occupied by muscle-packed bodybuilders. Women are reclaiming the gym and challenging gender norms by engaging in weightlifting and muscle-building exercises previously more associated with men. This movement towards strength training represents a departure from cardio-focused workouts traditionally associated with femininity. With more and more women entering this traditionally male-dominated space, men may begin to feel threatened in their dominant position (Hertzog & Lev, 2019). A threat to masculinity has been linked to men showing more aggressive behavior (Bosson et al., 2009). In this context, grunting may serve as a tool to establish dominance and protect the male identity. We predicted that grunting is associated with perceptions of enhanced social dominance in both men and women. Given that this behavior is likely intended to intimidate females and uphold male dominance within the gym environment, we expected that women will associate grunting with higher perceptions of social dominance than men.

The Social Construction of Grunting: Implications for Training Advice

As noted above, grunting is partially a socially constructed phenomenon. Grunting may be the result of peer group socialization and the advice of trainers and veteran gym goers who transmit and perpetuate such norms (Lev & Hertzog, 2022). Further support for grunting being a social construct comes from the finding that it can be situationally adjusted: Men are more likely to grunt when they are in a familiar environment and they will likely decrease their grunting in the presence of someone they perceive as more dominant as themselves (Lev & Hertzog, 2022). We used the concept of task attractiveness to evaluate the impact of grunting on real-life behavior, specifically whether individuals would ask a grunter for training advice. Task attractiveness is one of three types of interpersonal attractiveness defined by McCroskey and McCain (1974) and denotes the attraction to someone based on their abilities and skills.

Grunting is associated with lifting heavy weights which signifies strength. Thus, the phenomenon may serve as a means of identification with a particular group—those who possess considerable muscle and experience and are often admired by those less experienced. Additionally, because of its association with bodybuilding, grunting may highlight the grunter's status as an expert weightlifter, leading to increased perceptions of competence. Especially novices at the gym may see them as role models and aspire to be like them. Thus, we predicted that grunters would be perceived as having higher task attractiveness, especially by other men. Consistent with previous research indicating that women view grunting as an undesirable trait, we hypothesized that women would be less likely to seek advice from a grunting individual. Additionally, women may feel more intimidated by grunting compared to men, further reducing their likelihood of asking for training advice.

The Present Study

We employed an experimental design to examine causal relationships between grunting and perceptions of masculinity, social dominance, and task attractiveness across gender. The aim of this study was to investigate whether the perceptions of grunting align with the assumed motivations of the grunter or if there is a discrepancy between intentions and perceptions, as suggested by Lev and Hertzog (2022). Our sample consisted of both male and female participants, mostly gym goers. We anticipated that (1) grunting would enhance perceptions of masculinity, (2) grunting would lead to higher perceptions of social dominance, with this effect being significantly stronger for women, and (3) men would be more likely to seek training advice from a grunter than a non-grunter.

Method

Participants and Design

We aimed to recruit 320 participants so that we could have 80 participants per cell in the design. A total of 342 participants answered the online questionnaire, all recruited via Prolific (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 were no exclusion criteria for age. Initially, our 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, we decided to include these respondents in our 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). This study was pre-registered

(AsPredicted #171791). To investigate the relationship between grunting and perceptions of masculinity and other variables, we designed an experiment using a 2x2 design. 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, 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 participant's audition 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 exact same video except for 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 three questions to check if they paid attention. The following questions were: “*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 respectively. 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 training-regime, while also prioritizing free weights to foster the association to masculine norms regarding choice of equipment. The weights were chosen in a fashion to justify the grunting noise in the grunting condition, resulting in 22kg, 16kg, 35kg, 60kg (excluding the weight of the Barbell) respectively. 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. There was no music in the gym, but air-conditioning noise from the building. 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 condition were the same, with the only difference being the grunting noise, which was edited out after filming.

Measures

This study was carried out as part of a group project. Therefore, the variables presented in this paper are only a selection of the total investigated variables. The complete list of items for each measure is presented in the Appendix.

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 traditional masculinity; as opposed to the single item measuring the broad concept of masculinity.

Perceived 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*” ($\alpha = .80$). 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

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 ($\alpha = .85$) 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 Task Attractiveness

Participants were asked to rate the target's attractiveness. This construct was assessed using 9 items adapted from McCroskey and McCain (1974)'s study measuring interpersonal attractiveness. This measure consisted of three distinct domains: social attractiveness, task attractiveness and physical attractiveness. This study focused exclusively on measuring task attractiveness. Overall, the construct of task attractiveness had a good reliability ($\alpha = .85$). 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

Assumption Checks

Analysis was conducted using SPSS software. Before the main analysis, we checked whether the necessary conditions were met to perform a two-way ANOVA. First, normal Q—Q plots were generated for each cell of the dependent variables. Visual inspection of these plots suggested that the assumption of normality was met for all dependent variables. Second, we could assume independence of observations by having chosen an independent random sample. Third, Levene's test was nonsignificant for all dependent variables which allowed us to assume homogeneity of variance.

Main Analysis

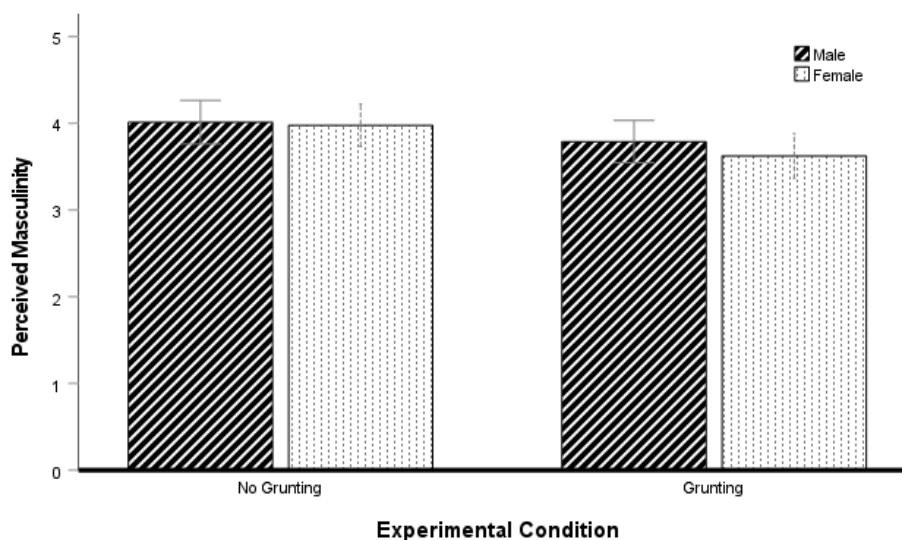
Originally, we aimed to recruit only regular gym-goers. However, due to an error by Prolific, participants who do not go to the gym at all ($N = 108$) were also included in the sample. Analysis showed that excluding these participants did not significantly alter the results, demonstrating the robustness of our findings. Therefore, they remained included in the analysis. A series of two-way ANOVAs was performed to investigate the effect of grunting and gender on the four dependent variables.

Masculinity

The analysis showed a significant main effect of grunting on perceived masculinity ($F(1,326) = 5.19, p = .02, \eta_p^2 = .02$). Participants in the no grunting condition perceived the target to be more masculine ($M = 3.99, SD = 1.13$) than participants in the grunting condition ($M = 3.71, SD = 1.16$). This indicates that, contrary to what we predicted, grunting leads to lower perceptions of masculinity. The perception of masculinity did not vary by gender ($F(1,326) = 0.63, p = .43, \eta_p^2 = .00$) and there was no significant interaction effect ($F(1,326) = 0.26, p = .61, \eta_p^2 = .00$). Figure 1 illustrates the results.

Figure 1

Mean Perceived Masculinity Across Experimental Condition and Gender



Note. Error bars represent 95% confidence intervals.

Traditional Masculinity

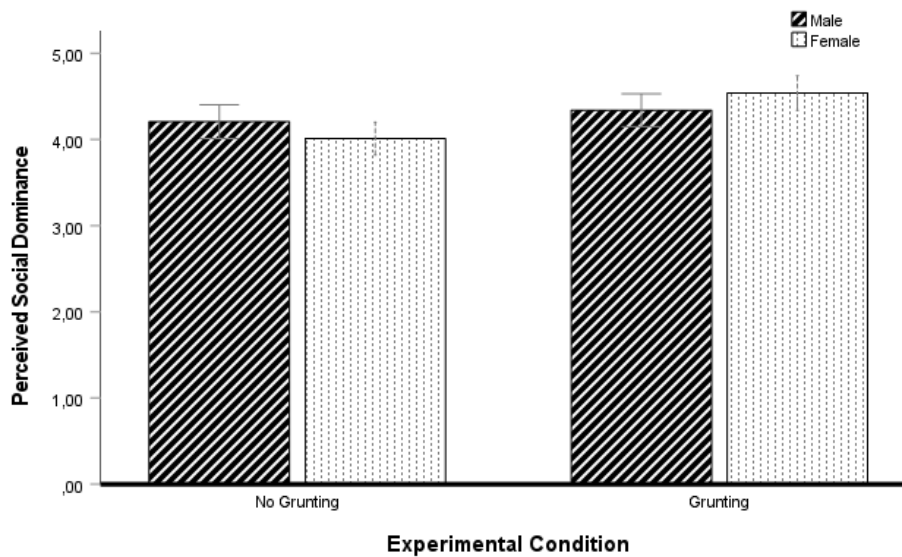
The analysis showed no significant main effect of grunting on perceived traditional masculinity ($F(1,326) = 0.11, p = .74, \eta_p^2 = .00$). This indicates that grunting has no effect on perceptions of traditional masculinity. The perception of traditional masculinity did not vary by gender ($F(1,326) = 0.05, p = .83, \eta_p^2 = .00$).

Social Dominance

The analysis showed a significant main effect of grunting on perceived social dominance ($F(1,326) = 11.22, p < .001, \eta_p^2 = .03$). Participants in the grunting condition perceived the target to be more socially dominant ($M = 3.99, SD = 1.13$) than participants in the no grunting condition ($M = 4.11, SD = 0.95$). This indicates that, in line with what we predicted, grunting leads to higher perceptions of social dominance. The perception of social dominance did not vary by gender ($F(1,326) = 0.00, p = .99, \eta_p^2 = .00$). However, there was a significant interaction effect between gender and condition ($F(1,326) = 4.02, p = .05, \eta_p^2 = .01$). This suggests that the perception of grunting depends on gender, with females perceiving grunting as more indicative of social dominance than males, as we expected. Figure 2 illustrates the results.

Figure 2

Interaction Effect of Grunting and Gender on Social Dominance Perceptions



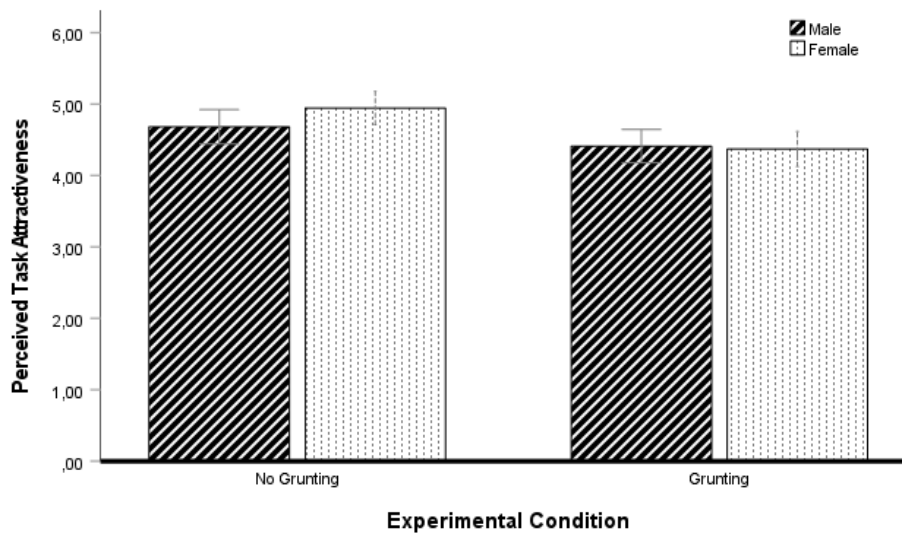
Note. Error bars represent 95% confidence intervals.

Task Attractiveness

The analysis showed a significant main effect of grunting on perceived task attractiveness ($F(1,326) = 12.14, p < .001, \eta_p^2 = .04$). Participants in the no grunting condition perceived the target to have higher task attractiveness ($M = 4.82, SD = 1.11$) than participants in the grunting condition ($M = 4.39, SD = 1.1$). This indicates that, contrary to what we predicted, grunting leads to lower perceptions of task attractiveness. The perception of task attractiveness did not vary by gender ($F(1,326) = 0.84, p = .36, \eta_p^2 = .00$) and there was no significant interaction effect ($F(1,326) = 1.55, p = .22, \eta_p^2 = .00$). Figure 3 illustrates the results.

Figure 3

Mean Perceived Task Attractiveness Across Experimental Condition and Gender



Note. Error bars represent 95% confidence intervals.

Discussion

The present study explored the perception of grunting in a gym environment in regards to masculinity, social dominance, and task attractiveness. Most of the ideas centered around intentions and perceptions of grunting were based on anecdotal evidence. Lev and Hertzog (2022) started the discussion around grunting by delivering qualitative evidence suggesting that grunting is socially constructed. Through an experiment, we were the first to empirically test their ideas and the way grunting is perceived. We predicted that grunting would lead to increased perceptions of masculinity, social dominance, and task attractiveness. Furthermore, we investigated the role of gender in these perceptions.

Perceptions of Masculinity

Initially, we hypothesized that grunting would be interpreted as a hyper-masculine behavior, reinforcing traditional gender roles, and facilitating social categorization as more masculine. This assumption was based on anecdotal evidence and the observation that grunting is more prevalent among men in gym settings. However, we found the opposite

effect in the present study when masculinity was measured directly (i.e., asking participants to rate the masculinity level of the target). Contrary to our expectations, the grunting target was perceived as less masculine than his non-grunting counterpart. These results suggest that grunting should be considered as a social phenomenon rather than a cognitive or biological marker of masculinity. While weightlifting and especially the use of free weights is associated with masculinity (Coen et al., 2018), the act of grunting is not. Instead, it could be interpreted as an attempt to draw attention which might be incongruent with traditional notions of masculinity. This is partially in line with Lev and Hertzog (2022), who found that female gym goers often perceive grunting as irritating, disruptive, or annoying. They also found that men have a more ambivalent position towards grunting. Some feel like it earns the grunter respect while others experience it as unpleasant. In our study, neither men nor women perceived grunting as masculine. Thus, it is potentially viewed as socially inappropriate and attention-seeking behavior which may not align with societal definitions of masculinity.

We found no significant gender differences in these perceptions. This could suggest a consensus that grunting is an undesirable behavior that detracts from, rather than enhances masculinity. Another explanation might be the increasing discussion surrounding the phenomenon of grunting at the gym in recent years. Popular magazines began publishing articles that portray grunting negatively, for instance a guide titled *"How Do I Shut Up a Noisy Gym-Goer?"* by Jacobs (2014). This shows that more and more, men have been called out for their disruptive behavior and grunting has become increasingly unpopular and frowned upon. Consequently, both men and women may have adopted an overriding negative view of grunting where it no longer serves as a marker for masculinity.

Interestingly, we did not find any effect of grunting on traditional masculinity, which was measured through ratings of assertiveness, ambitiousness, and independence. Thus, we can infer that grunting behavior only affects broader perceptions of masculinity and not more

specific subcomponents, such as traditional masculinity. In the present study, traditional masculinity, as measured here, did not seem to be affected by the absence or presence of grunting. It is possible that traditional masculinity is more influenced by physical characteristics and context rather than behavioral cues. As there was no difference other than sound between the two videos this would explain why we did not find an effect of grunting on perceptions of traditional masculinity.

Another potential factor to consider is the sexual orientation of our sample. We limited our sample to consist of only heterosexual participants. However, there is evidence that gay men show a preference for traditional masculinity (Sánchez et al., 2009). Investigating the effect of participant's sexual orientation in the perception of grunting and masculinity could be a fascinating avenue for future research. As gyms are open spaces for individuals of all sexual orientations, future studies should replicate the present study using a gay sample and using traditional male gender norms as an independent variable.

The negative perception of grunting observed in our study suggests that, while it is a behavior commonly exhibited by men, it does not enhance their masculine image. Given that most of our conclusions currently rely on anecdotal evidence, future studies should focus on the grunter themselves and investigate their perspective on grunting in regards to their masculinity. This could be achieved through a field study conducted in a gym setting, where researchers observe men who naturally grunt during their workout. They would then be invited to complete a questionnaire, providing insights into how they perceive their masculinity during their workout and what other motivations they may have for engaging in grunting behavior. Results should then be compared to a sample of silent individuals who also train at the same gym to reduce context effects.

Perceptions of Social Dominance

In line with our predictions, the data showed that grunting leads to perceptions of enhanced social dominance. This supports our hypothesis that grunting may be used as a tool to establish male dominance over the gym. As we predicted, women perceived grunting as more socially dominant compared to males. This suggests that the perception of grunting in the gym environment may differ depending on socialization and individual experiences associated with gender. Lev and Hertzog (2022) conceptualized grunting as a privilege which is only granted to men. They reported qualitative evidence showing that women feel intimidated by grunting males at the gym and avoid certain areas of the gym in order not to encounter them. Our study is the first to demonstrate that both men and women perceive grunters as more dominant and that this effect is significantly stronger for women. Thus, our data supports the notion that grunting may limit the access of women to certain areas of the gym, especially the free weights section. However, it should not be ignored that men may also experience negative effects through the grunting of others. Future studies should test whether grunters deliberately use grunting to assert dominance and bar women from entering traditionally male-dominated spaces or whether it is more of a passive reaction in response to the perceived threat of women entering these spaces. Grunting should be studied in naturalistic gym settings to see what triggers it. This should be combined with qualitative research on the motivations behind it.

Grunting may signify strength and power, as our study suggests, indicating successful communication of dominance and simultaneously perpetuating male gender stereotypes. This act may be a means for individuals to distinguish themselves within the implicit social hierarchy of the gym, seeking respect and admiration (Lev & Hertzog, 2022). Our proposal that grunting may serve as a tool to strengthen patriarchal structures in the gym was supported by the results. However, our study solely examined perceptions of grunting. Future research

should explore motivations behind this behavior through qualitative methods, interviewing grunting individuals to gain deeper insights.

Perceptions of Task Attractiveness

Contrary to our initial hypothesis, participants in the grunting condition rated the target lower in task attractiveness compared to those in the non-grunting condition. Grunting is often associated with lifting heavy weights implying that the lifter is strong and experienced in the domain of weight lifting. Thus, we predicted that grunting would enhance perceptions of the grunter's expertise. However, the results indicated that grunting diminished perceptions of competence and athletic ability. This suggests that grunting may be interpreted as a sign of struggle or pain, and thus, weakness. It is possible that a grunting individual may be perceived as having overexerted themselves with the weights, which does not signal expertise or competence in weightlifting.

Furthermore, we found no gender differences in the perceptions of task attractiveness; neither men nor women were inclined to ask a grunter for training advice. One possible explanation for this finding is that both genders feel intimidated by the grunting, as supported by the significant results regarding enhanced perceptions of social dominance.

Our results also have important implications as they translate to actual behavior. Lev and Hertzog (2022) observed that it is often the male trainers at gyms and those who are more experienced who grunt. Our findings suggest that both men and women may be hesitant to accept and follow advice from a grunter. Consequently, this aspect of grunting could act as another barrier for women, but also men, in reaching their fitness goals.

Future studies should investigate why the phenomenon of grunting is still prevalent in modern gym culture even if it is apparently so unpopular. The question that still needs to be answered is what makes a grunter grunt? First, the actual prevalence of grunting in gyms

should be assessed using observational methods. Secondly, both qualitative interviews and standardized questionnaires may be used to identify traits that grunting individuals share.

Limitations and Directions for Future Research

One major limitation of our study was that our sample included many participants who do not go to the gym at all. Although we selected a filter to only include people who go to the gym, due to an error we still ended up with many who do not. These participants may not be familiar with grunting behavior and social norms surrounding physical fitness and masculinity, leading to different perceptions and interpretations of these behaviors. Even though statistical analysis confirmed that excluding these participants did not make a difference, future replications of this study should consider only recruiting regular gym goers to reduce variability.

A second limitation was our sample consisting only of UK citizens, which may restrict generalizability to other countries and cultures. Considering that gym culture is similar across the Western world, it is likely that our results also apply to other countries of Europe and the US, however, this must be confirmed by future research.

A third possible limitation was the broad age range present in our sample. Most of our participants were in their forties and older which raises the question how familiar they are with contemporary gym culture. Their perceptions of the target may also be skewed as he was significantly younger than most of our participants. Therefore, replications of this study should restrict the age of participants to see whether there are age-related differences in the perceptions of grunting.

A fourth aspect to consider is that participants were only exposed to the video once. They may not have had enough time to process the subjects' behavior and form an impression of it which might be reflected in the results. Repeated exposure to the video may lead to the formation of more accurate perceptions.

Also, we did not account for context effects. As participants were only watching a video and were not actually present in the gym it is possible that they were not affected by the contextual cues present in a real-life gym environment. While we did try to closely replicate the gym atmosphere in our video by incorporating other individuals working out in the background, ecological validity of the video was limited. Participants' perceptions based on the video may not fully align with how they would perceive grunting in an authentic gym setting. Therefore, future studies should attempt to better replicate the gym atmosphere, for example, by adding music to the video.

Our results relied on the extent to which participants stereotyped the grunter compared to the non-grunter. It has been noted that humans are more likely to stereotype strangers as compared to people they know. An interesting avenue for future research could be to investigate the way grunting is perceived if the grunter is a stranger versus when it is a friend. It would be interesting to see whether perceptions of masculinity would increase if the grunter is familiar to the observer. In that case the grunter would be more likable and the relationship between the behavior of grunting and masculinity may not be overshadowed by negative feelings toward the subject themselves, possibly showing an inverse relationship to the one observed in the present study.

Furthermore, Lev and Hertzog (2022) noted that women face more negative repercussions if they engage in grunting than men. Future studies should empirically test this claim by replicating the present study but using a female actor in the grunting/no grunting condition.

Lastly, we recommend presenting our findings to grunting individuals in their natural gym environment to observe their reactions and gather their perspectives on the matter. The results of this qualitative research could provide valuable insights and inform future research directions. Especially the findings of enhanced social dominance and its implications (i.e., the

intimidating effect of grunting) may come as a surprise to those grunTERS, whose main motivation might have been to boost their masculine image.

Conclusion

The goal of the present study was to start a conversation around the topic of grunting. The results of our experiment suggest that there seems to be a serious mismatch between the way grunTERS hope to be perceived and how others *do* perceive them. Specifically, grunTERS were perceived as less masculine, more dominant, and less competent by others. These biases did not appear to be gender-specific. By highlighting this discrepancy, we hope to instill a sense of awareness for the negative consequences associated with grunting and thereby contribute to making the gym an accessible safe space for everyone. Finally, to be perceived as masculine and competent in the gym, we suggest it may be better to keep the noise to a minimum.

References

- Bem, S. L. (1974). *Bem Sex Role Inventory*. APA PsycTests.
<https://doi.org/10.1037/t00748-000>
- Bosson, J. K., Vandello, J. A., Burnaford, R. M., Weaver, J. R., & Wasti, A., S (2009). Precarious manhood and displays of physical aggression. *Personality and Social Psychology Bulletin*, 35(5), 623–634.
<https://doi-org.proxy-ub.rug.nl/10.1177/0146167208331161>.
- Coen, S. E., Rosenberg, M. W., & Davidson, J. (2018). “it’s gym, like g-y-m not j-i-m”: exploring the role of place in the gendering of physical activity. *Social Science & Medicine*, 196, 29–36. <https://doi.org/10.1016/j.socscimed.2017.10.036>
- Connell, R. W., & Messerschmidt, J. W. (2005). Hegemonic masculinity: rethinking the concept. *Gender & Society*, 19(6), 829–859.
<https://doi.org/10.1177/0891243205278639>
- Dictionary.com. (2020). Grunt. In *Dictionary.com*. Retrieved May 27, 2024, from <https://www.dictionary.com/browse/grunt>
- Hertzog, E., & Lev, A. (2019). Male dominance under threat: machoism confronts female defiance in israeli gyms. *Journal of Contemporary Ethnography*, 48(6), 836–866.
<https://doi.org/10.1177/0891241619834662>
- Jacobs, A.J. (2014, January 13). *How Do I Shut Up a Noisy Gym-Goer?* Esquire.
<https://www.esquire.com/lifestyle/health/a26824/huddled-masses-gym-grunting/>
- Johansson, T. (1996). Gendered spaces: the gym culture and the construction of gender. *Young*, 4(3), 32–47. <https://doi.org/10.1177/110330889600400303>
- Kachel, S., Steffens, M. C., & Niedlich, C. (2016). Traditional masculinity and femininity: Validation of a new scale assessing gender roles. *Frontiers in Psychology*, 7.
<https://doi-org.proxy-ub.rug.nl/10.3389/fpsyg.2016.00956>

- Lev, A., & Hertzog, E. (2022). Granting the privilege to grunt: reconceptualizing the perception of grunting in gyms. *International Review for the Sociology of Sport*, 57(3), 440–457. <https://doi.org/10.1177/10126902211020170>
- McCroskey, J. C., & McCain, T. A. (1974). *Interpersonal Attraction Scale* [Database record]. APA PsycTests. <https://doi.org/10.1037/t02268-000>
- Mills, J. S., Manea, A., & McCreary, D. R. (2023). Precarious manhood manifests as drive for muscularity among men. *Sex Roles: A Journal of Research*, 88(11–12), 547–555. <https://doi-org.proxy-ub.rug.nl/10.1007/s11199-023-01369-7>
- Morales, Z., Owen, S., & O’Connell, D. G. (1999). Vocal disinhibition (grunting) does not increase dead lift force in college athletes or nonathletes. *Perceptual and Motor Skills*, 89(1), 233–234. <https://doi.org/10.2466/pms.1999.89.1.233>
- O’Connell, D. G., Hinman, M. R., Hearne, K. F., Michael, Z. S., & Nixon, S. L. (2014). The effects of “grunting” on serve and forehand velocities in collegiate tennis players. *Journal of Strength and Conditioning Research*, 28(12), 3469–3475. <https://doi.org/10.1519/JSC.0000000000000604>
- Raine, J., Pisanski, K., & Reby, D. (2017). Tennis grunts communicate acoustic cues to sex and contest outcome. *Animal Behaviour*, 130, 47–55. <https://doi-org.proxy-ub.rug.nl/10.1016/j.anbehav.2017.06.022>
- Rodriguez-Santiago, M., Nührenberg, P., Derry, J., Deussen, O., Francisco, F. A., Garrison, L. K., Garza, S. F., Hofmann, H. A., & Jordan, A. (2020). Behavioral traits that define social dominance are the same that reduce social influence in a consensus task. *PNAS Proceedings of the National Academy of Sciences of the United States of America*, 117(31), 18566–18573. <https://doi-org.proxy-ub.rug.nl/10.1073/pnas.2000158117>

- Sánchez, F. J., Greenberg, S. T., Liu, W. M., & Vilain, E. (2009). Reported effects of masculine ideals on gay men. *Psychology of Men & Masculinity*, *10*(1), 73–87.
<https://doi-org.proxy-ub.rug.nl/10.1037/a0013513>
- Sinnott, S., Maglinti, C., & Kingstone, A. (2018). Grunting's competitive advantage: Considerations of force and distraction. *PLoS ONE*, *13*(2).
<https://doi-org.proxy-ub.rug.nl/10.1371/journal.pone.0192939>
- Smith, S., & Smith, J. (2015). Effect of vocalization on maximal effort dynamic muscle performance. *The FASEB Journal*, *29*(S1).
https://doi.org/10.1096/fasebj.29.1_supplement.865.2
- Swaddle, J. P., & Reiersen, G. W. (2002). Testosterone increases perceived dominance but not attractiveness in human males. *Proceedings - Royal Society. Biological Sciences/Proceedings - Royal Society. Biological Sciences*, *269*(1507), 2285–2289.
<https://doi.org/10.1098/rspb.2002.2165>
- Tod, D., Iredale, F., & Gill, N. (2003). 'psyching-up' and muscular force production. *Sports Medicine*, *33*(1), 47–58. <https://doi.org/10.2165/00007256-200333010-00004>
- Turnock, L. A. (2021). 'there's a difference between tolerance and acceptance': exploring women's experiences of barriers to access in uk gyms. *Wellbeing, Space and Society*, *2*. <https://doi.org/10.1016/j.wss.2021.100049>
- Wagner, P. E. (2016). Picture perfect bodies: Visualizing hegemonic masculinities produced for/by male fitness spaces. *International Journal of Men's Health*, *15*(3), 235–258.
- Weißflog, M. I., & Grigoryan, L. (2024). Gender categorization and stereotypes beyond the binary. *Sex Roles: A Journal of Research*, *90*(1), 19–41.
<https://doi-org.proxy-ub.rug.nl/10.1007/s11199-023-01437-y>
- Whitley, B. E., & Kite, M. E. (2016). *Psychology of prejudice and discrimination*. Routledge eBooks. <https://doi.org/10.4324/9781315623849>

Appendix: Measurement Items

Scale Items for Masculinity

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

Scale Items for Traditional Male Gender Norms (BSRI; Bem, 1974)

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 (Rodriguez-Santiago et al. 2020)

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 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