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Real Men Eat Meat? The Role of Traditional Masculinity in Meat Consumption, Willingness to Change Meat Consumption, and the Impact of Framed Messaging

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1. Introduction

Meat consumption has significant negative consequences for one's health and the environment (Tilman & Clark, 2014). A diet high in meat, especially red and processed meat, is connected to several health risks like diabetes, heart disease, and cancer. From an environmental perspective, the meat sector is also responsible for the highest emissions in food production. With its high land and water use, meat production contributes to deforestation and biodiversity loss, making meat consumption a critical concern for sustainability goals. Adopting a vegetarian diet significantly reduces both personal and global emissions (Tilman & Clark, 2014; Wynes & Nicholas, 2017). As such, the reduction of meat consumption not only has a positive impact on one's health but also has potential to contribute to environmental sustainability. Despite these benefits, meat consumption is very prevalent, especially in men, as they consume more meat than women cross-culturally and have a lower willingness to reduce their meat consumption (Hopwood et al., 2024; Schulz et al., 2024). As a result, men are not only at greater risk for health issues related to their meat consumption, they also disproportionately contribute to higher emissions (Meier & Christens, 2012).

This gender gap stems from historical, cultural, and gendered ideas and norms. Meat consumption has historically been linked to masculinity, with meat serving as a symbol for strength, power, and dominance, and, as such, is deeply embedded in cultural and especially gendered norms, making change difficult (Adams, 2024; Rosenfeld, 2023). Going vegetarian, vegan, or avoiding meat conversely is often perceived as weak and feminine (Rothgerber, 2013). Within the framework of precarious manhood, manhood has been conceptualized as a status that needs to constantly be affirmed or proven by behavior that is deemed masculine (Vandello & Bosson, 2012). Being perceived as feminine deviates from traditional masculinity and as such, may threaten men's social status. Men looking to prove their masculinity might use meat consumption to boost their masculine image on the one hand and to avoid seeming feminine or weak on the other (Brough et al., 2016).

While the meat-masculinity link has been studied widely, mainly in the USA, but also in Europe in countries like the Netherlands or Belgium (Brough et al., 2016; De Backer et al., 2019; Leary et al., 2023; Mesler et al., 2021; Rosenfeld, 2023; Schösler et al., 2015), limited research is available for the German-speaking demographic. This study aims to address this gap by examining the meat-masculinity link and the willingness to change meat consumption in a

German-speaking context, including the roles of different facets of traditional masculinity, like dominance, emotional control, and competitiveness.

However, ideas and concepts of masculinity are also evolving. While traditional masculinity, which is still dominant, is connected to meat consumption, the framework of multiple masculinities suggests that ideas of masculinities can evolve based on cultural influences or changes (Connell & Messerschmidt, 2005). This implies that not all masculinities have to be connected to meat consumption. For example, men who are more inclined to endorse new masculinity value self-awareness and -growth and are more open to reducing meat intake (De Backer et al., 2019; Kaplan et al., 2016). Thus, promoting new kinds of masculinity could be effective in the effort to reduce men's meat consumption (Rosenfeld, 2023). This study will take a first step in testing whether new masculinity could be an avenue in engaging men in sustainability efforts concerning meat consumption

With growing sustainability concerns, it is essential to identify gendered motivations and barriers among the demographic of young German-speaking men, as well as understand which factors play a role in initiating behavioral changes to better target interventions.

2. Theoretical Background

2.1. Gendered Food: The Meat Masculinity Link

50% of male, but only 19% of female American college students, consume meat every day (Cripps & Thiagarajah, 2018). The gender gap in meat consumption is well established globally (Hopwood et al., 2024). In Germany, men's meat consumption is about double that of women's, and a cross-cultural study even showed this to be one of the highest gender differences in meat consumption (Hopwood et al., 2024; MRI, 2024). This gender gap in meat consumption also shows up in the reduction of meat consumption. While the percentage of vegetarians has been increasing over the past decades, this is only the case for women (Nezlek & Forestell, 2024). Something seems to keep men from participating in this change.

From a young age, boys already have implicit gendered food conceptions and already connect vegetables to women and meat to men (Graziani et al., 2020). This might be one of the reasons men develop a stronger preference for meat than women do (Schösler et al., 2015). The gender gap in meat consumption appears to be closely connected to men's adherence to *traditional masculinity*, more specifically, traditional masculine norms. While it remains under-

researched within the German-speaking context, studies in other countries have found that men subscribing to more traditional gender roles had a more frequent and higher meat consumption (Rosenfeld & Tomiyama, 2021; Stanley et al., 2023). This is especially the case when they feel their masculinity is threatened, in which case they might compensate through choosing an option they deem more masculine, like meat (Brough et al., 2016; Leary et al., 2023). Men might not even be aware of the connection between their masculinity and their meat consumption. Qualitative studies showed that men cited pragmatic, taste or personal reasons for endorsing meat consumption for themselves and only recognized a pattern for men in general (Carrol et al., 2019; McPhail et al., 2012). The connection to meat consumption was also evident for gender identity centrality: The more important their gender was for men's identity, the higher their meat consumption was (Rosenfeld & Tomiyama, 2021).

On the one hand, meat is considered masculine; on the other hand, engaging in a meatless diet as a man relates to feminization and stigma. Men who violate a gender role expectation, such as eating meat – and as such are behaving as what is considered un-manly – may face negative evaluation from their surroundings, especially from omnivores and those with right-wing ideologies (MacInnis & Hodson, 2015). While vegans and vegetarians don't necessarily see themselves as less masculine than omnivores do, masculine values are cited to justify meat eating and oppose vegetarianism by men and women (Kildal & Syse, 2017; Mycek, 2018).

In German-speaking samples, some results concerning masculinity and meat consumption were found. For example, the gender-self-concept in men was connected to their diet (Weber & Kollmayer, 2022). A different study found that the more central sex-roles were for the men, the more meat was consumed, and the more meat consumption was defended (Mertens & Oberhoff, 2023). Conversely, the specific link between traditional masculinity and its facets with meat consumption has not yet been examined in the German-speaking context but is essential for a better understanding of barriers and motivations in meat consumption.

But what does masculinity or manhood really mean? What makes someone manly, and why is meat consumption so central to it? Vandello and Bosson (2012) theorize that manhood is a precarious social status. First, it is difficult to achieve and must be earned, and second, once achieved, it is difficult to hold. Therefore, manhood must continuously be proven through actions that can be observed by others. Showing characteristics that could be considered un-manly on the other hand, can soon lead to the manhood status being revoked. This is where the traditional masculinity norms come into play. To be considered manly, one has to perform manly – or better

said masculine – behaviors. The importance of fitting into the framework of masculinity as a man can be explained through social identity theory (SIT; Tajfel & Turner, 1979). According to SIT, individuals derive part of their self-concept from their membership in a social group, such as belonging to the group “man” or “woman”. Maintaining a positive social identity means conforming to group norms. For men, this often means having to conform to traditional masculine norms to avoid exclusion from the group or status loss. One study found that men are more likely to choose a more “masculine” meal when dining with friends compared to dining with a date (Gasiñorowska et al., 2023), underscoring the greater need to posit masculinity to members of their own in-group (other men) more so than in front of women. Similarly, Connell’s hegemonic masculinity (Connell, 1995; Connell & Messerschmidt, 2005) discusses these implications of masculinity and provides important insights into gendered power structures. Since hegemonic masculinity mostly centers a broader social domination over women, it is less suited for examining individual psychological dimensions and, as such, will not be the primary focus or framework for this paper. Instead, the analysis will concentrate on more well-defined dimensions of traditional masculinity.

More specifically, facets of masculinity include appearing strong and invulnerable, showing dominance, heterosexual success and emotional detachment, and achieving status and success, like defining oneself through competition. Together, these facets define traditional masculinity as a concept valuing power, control, and detachment and provide a strong, trait-based, well-operationalized and validated framework of traditional masculinity.

Placing a high importance on traditional masculinity has been connected to many problematic behaviors, including but not limited to psychological and relational challenges. One of the most prevalent topics when discussing traditionally masculine norms are the challenges that arise out of high emotional control. Men’s socialization to limit emotional expressions, such as vulnerabilities like sadness or fear on the one hand and affection on the other hand, can lead to an actual diminished emotional competence, such as a lack of the capacity to name and feel emotions. This is referred to as normative male alexithymia (Karakis & Levant, 2012; Logoz et al., 2023). It not only impairs relationship quality but, in concordance with a high self-reliance, also contributes to a reluctance to seek mental health support from friends or professionals when needed (Karakis & Levant, 2012; Nordin et al., 2024; Üzümcüker, 2025).

Such reluctance can have various implications for men’s health, as documented in the Gender Equality Index Report (European Institute for Gender Equality, 2021). This includes low

self-esteem and depression, which, through low mental health literacy and as such the inability to recognize depressive symptoms, often remains underdiagnosed. Symptoms of depression are masked to align with masculine stereotypes and show up as violence, anger, and substance abuse rather than internalized emotional distress (European Institute for Gender Equality, 2021; Montiel et al., 2022). Distress that is recognized does not immediately lead to help-seeking, as traditional masculinity fosters low self-compassion and self-stigma (Logoz et al., 2023; Üzümcüker, 2025). Depressive symptoms seem to be especially connected to the norms of self-reliance, playboy (the desire for high sexual contact with different women), and violence and less with norms like winning and power over women (Iwamoto et al., 2018; Montiel et al., 2021). In adolescents, a higher endorsement of traditional masculinity predicted not only depressive symptoms but also decreased academic engagement, indicating consequences not only for well-being but also for educational outcomes (Rogers et al., 2016). In the workplace, the impact of traditional masculinity is particularly pronounced in male-dominated environments, where competition is encouraged, vulnerability is stigmatized, and peer dynamics often reward toughness and dominance (European Institute for Gender Equality, 2021).

Another norm with important implications is the norm of violence. A high endorsement of violence can include the self *and* others. For example, instead of seeking help in mental crises, men with a higher sense of traditional masculinity suffer from suicidal ideation, meaning violence against themselves (Coleman, 2014). Studies also connected traditional masculinity with reactive as well as proactive aggression and domestic violence perpetration (Logoz et al., 2023; Malondo-Vidal et al., 2021). Furthermore, traditional masculinity has been associated with attitudes like old-fashioned sexism, which is connected to overt negative attitudes towards women (Krivoshchekov et al., 2023). This combination of violence and sexist attitudes forms a particularly harmful dynamic (Adams, 2024; Logoz et al., 2023).

Despite the risks associated with rigid traditional masculinity norms, it is important to note that some masculine traits can be beneficial for men when decoupled from harmful ideals such as exaggerated self-reliance. For example, a higher endorsement of the norm winning was connected to fewer depressive symptoms (as was power over women) and, as such, indicated that some traits may be protective in certain contexts, depending on how they are integrated (Iwamoto et al., 2018). Another point to be considered is that different norms create different, unique connections. For example, in the case of religiousness, connections for certain norms are distinct from each other (Ward & Cook, 2010). Valuing winning, power over women, and holding

negative attitudes towards homosexuals is positively connected to traditional or authoritarian religiousness. But emotional control, violence and playboy-attitudes are *negatively* related to religious commitment, which highlights that traditional masculinity and its norms may interplay with other attitudes or belief systems. This study also found that, essentially, the less fundamentalist the belief, the lesser the connection to dominance and status seeking (Ward & Cook, 2010).

Building on this framework, Adams (2024) argues that certain values and attitudes towards oneself and women have an especially strong connection to meat consumption. As such, Adams is one of the only ones proposing a theoretical framework that examines the specific facets of traditional masculinity and their influence on meat consumption, especially in connection to sexism, more closely. According to Adams (2024), the production of meat is a site of institutionalized violence, where animals are turned into what she calls “absent referents”: Living beings stripped of identity, emotion, and agency. These dynamics align closely with facets of traditional masculinity. Power over others and a playboy-attitude make it possible to objectify women and meat as something that men deserve and are entitled to consume, while emotional control discourages emotional connection and empathy that would keep one from seeing others, humans and animals, as objects rather than beings to be protected. This also ties into a normalization of violence against people, which also extends towards animals. In a broader sense, Adams (2024) poses that men feel they are positioned at the top of the food chain and at a natural place of power, where the oppression of anything deemed inferior (women and animals) is a natural extension of that power. As such, performing masculinity makes it less likely that feelings that would consider reducing meat consumption will be acknowledged or accepted, and even more unlikely that they will result in actual change.

Historically, it has been cited that because of higher labor-intensive work, men need and deserve meat more than women do (Sumpter, 2015). Empirically, supporting Adams (2024) theoretical considerations, male justification strategies of meat consumption are connected to traditionally masculine norms. Rothgerber (2013) notes that denial of animal suffering, hierarchical justification, and human destiny justification align with traits like detachment and emotional control. Kildal and Syse (2017) similarly found that men often cite human’s and especially men’s dominance and power over nature and their position at the top of the food chain as one reason for consuming meat. Furthermore, emotional detachment, central to both meat justification and traditional masculinity, not only shields men from discomfort that could be

associated with meat consumption and animal suffering but also helps uphold broader hierarchies of dominance over animals, women and nature (Adams, 2024; Rothgerber, 2013). Health justifications on the other hand, which often imply meat as a supreme protein source to build muscle, are closely connected to the appearance of toughness and invulnerability (Kildal & Syse, 2017; Rothgerber, 2013). A direct tie of facets of masculinity to actual meat consumption so far has, to the knowledge of this author, only been proven by Camilleri and colleagues (2024) and could only be confirmed for an endorsement of violence and the importance of sex.

Through this framework it is understandable why men whose gender-identity is more central to their self may eat more meat to publicly affirm their masculinity, especially when they feel their masculinity status is in danger (Leary et al., 2023; Mertens & Oberhoff, 2023). While the general meat-masculinity link is well-established in other countries, there is little research on the meat-masculinity link in a German-speaking sample. It is important to establish whether this connection exists in the German-speaking context for a better understanding of motives that drive meat consumption to build a theoretical foundation to then be able to use this research to further sustainability education. The relevance of specific facets of traditional masculinity on the other hand is underexplored cross-culturally. Thus, in a second step it is important to make distinctions between facets of traditional masculinity that may have harmful effects and those that may serve as protective functions in order to avoid pathologizing the entire framework. This leads to the first research question of this paper, which will examine the connection of masculinity, its facets and meat consumption in a German-speaking sample.

2.2. Education for Sustainable Development: The Willingness to Change Meat Consumption

In food production, emissions are greatest for livestock; one person switching to a plant-based diet would reduce their personal emissions by 0.8t CO_{2e} per year (Tilman & Clark, 2014; Wynes & Nicholas, 2017). The vegetarian lifestyle also shows the lowest land use, further demonstrating the sustainability benefits of a meatless diet (Tilman & Clark, 2014). Therefore, efforts of sustainability should take a closer look at factors possibly motivating people to switch to a meatless diet.

For example, education for sustainable development (EDS) encourages people to think and act sustainably, helping individuals to understand their impact on the world (Bundesministerium für Bildung und Forschung, n.d.). A study by Bruckner and Kowalsch

(2018) in Germany found that although agriculture and consumer goods are part of the curriculum within EDS, the introduction of the topics of meat production and consumption is left to the individual teacher. In line with this, in a study in Switzerland, university students rated reducing meat consumption as less effective than other climate change mitigation strategies such as recycling and reducing plastic use (Slotnick et al., 2022). In reality, a plant-based diet is more effective in reducing emissions than recycling (Wynes & Nicholas, 2017). This indicates that many young people are misinformed about meat consumption, and sustainability education does not yet adequately address this issue, despite the importance of the topic for both health and the environment.

Misinformation or missing information isn't the only barrier to the effort to promote a meat-free diet. For example, *willingness to change meat consumption* is lower in people who consider themselves conservatives but increases with level of education and is higher in people who hold gender-egalitarian views (Camilleri et al., 2024; MacInnis & Hodson, 2015; Schösler et al., 2015). Rosenfeld's (2018) literature review also found that the most common motivators for being vegetarian or vegan are ethical (concern for animals and the environment) and health-focused (general wellness promotion and weight maintenance), with most vegetarians citing ethical concerns. However, previous interventions showed that men were less willing than women to reduce meat consumption, even when presented with environmental or health-related benefits (Cripps & Thiagarajah, 2018; Kildal & Syse, 2017; Slotnick et al., 2022). Men might not see any personal health problems connected to their meat consumption and get defensive when confronted with personal responsibility surrounding meat consumption (Hinrichs et al., 2022; Kildal & Syse, 2017). While men might be conscious of general connections between human consumption and environmental issues, they do not seem to make the connection to individual behavior (Cripps & Thiagarajah, 2018).

As mentioned in the chapter above, a gender gap exists for meat consumption; the same is the case for not consuming meat. In Germany, only 3.4% of women and 1.5% of men report not eating any meat; in Austria, about 77% of those who do not eat meat are women (Mohr, 2017; MRI, 2024). On average, men's meat consumption is about double that of women's, and meat is one of men's top energy sources (MRI, 2024). Additionally, meat consumption is highest in young men, which slightly decreases with age. As such, young people, especially men, are an important target group, since young people are mostly driven by habits but are open to flexitarian eating (Arnaudova et al., 2021). While vegetarianism is on the rise, this trend is almost entirely

driven by women, who report higher intentions of adopting a vegetarian diet and actually follow through on these intentions more often, speaking to the lower willingness to change meat consumption in men compared to women (Nezlek & Forestell, 2024; Schulz et al., 2024).

This connection between gender and meat consumption is only part of the story. Studies have found that the link between masculinity and meat consumption also extends to men's willingness to change and reduce their meat consumption: men subscribing to more traditional gender roles not only exhibited a higher and more frequent meat consumption but also a lower willingness to change this behavior. Just as in the meat-masculinity link, this is also the case for gender identity centrality; an additional link was found to gender typicality: a higher typicality in men was connected to a lower likelihood of reducing meat or considering vegetarianism (Rosenfeld & Tomiyama, 2021; Stanley et al., 2023).

Existing interventions like promoting vegetarianism through videos or implementing meatless days can often lead to resistance, especially among men identifying with traditional masculinity. These interventions even have an opposite effect, leading to more negative attitudes towards meat-reduction (Hinrichs et al., 2022; Kildal & Syse, 2017). Interventions often fail to consider the meat-masculinity link, overlooking how traditional masculinity shapes attitudes towards meat, more specifically also as it concerns facets of masculinity explored in chapter 2.1. Men adhering to traditional masculinity norms may suppress emotions like empathy and care, which would make them consider vegetarianism, while prioritizing power and detachment, traits that reinforce their continued meat consumption (Adams, 2024; Rothgerber, 2013). As previously discussed, violating these norms could result in loss of social status (Tajfel & Turner, 1979).

There are statistics and studies in German-speaking countries, showing that men are less likely to have reduced meat consumption as well as a lower intention of reducing their meat consumption in the future (Kesselstatt, 2024; Mohr, 2017; MRI, 2024). These findings highlight a gender gap in the willingness to reduce meat consumption in the German-speaking population. However, to this author's knowledge, no study has explicitly examined how conformity to traditional masculinity norms or their specific facets relate to willingness to change meat consumption within this cultural context.

This gap leads to the second research question, which will examine the connection of masculinity and its facets with the willingness to change meat consumption in a German-speaking sample. Although the willingness to change one's meat consumption does not necessarily translate into intention or actual behavior, it reflects an important attitude foundation.

Since this study centers on implications for EDS and sustainability efforts, willingness to change meat consumption represents a meaningful starting and entry point that can be addressed through education before intentions or actual behavior can be influenced or changed. Once the link between traditional masculinity and willingness to change meat consumption has been established, a closer look will be taken at how to influence this connection.

2.3. Reframing Interventions: New Masculinity

Some interventions fail to consider the meat-masculinity link, as outlined in the previous chapter. The link between traditional masculinity and meat consumption, as well as the importance of maintaining a masculine status, have to be considered when young men are confronted with or educated about environmental responsibility. The wrong approach may lead to defensiveness or have no effect. For example, sustainable and green behavior as well as healthy behavior are associated with femininity, a trait that, for men identifying with traditional masculinity, should be avoided (Brough et al., 2016; Kramer, 2021; Vartanian et al., 2006). Interventions appealing to sustainability often have no effect, as do interventions citing health (Kesselstatt, 2024; Kildal & Syse, 2017). Men might downplay or ignore health concerns related to meat consumption, as the norm of invulnerability positions health as irrelevant. Conversely, some men might even cite health as a reason to eat meat, often referring to higher protein levels as a reason to eat more meat (Kildal & Syse, 2017; Rothgerber, 2013).

Rosenfeld (2023) suggests that men could be engaged to reduce meat by branding meat reduction as masculine. Studies could already show that masculinity-affirming messages or masculine branding like customizing fonts, colors, and names can have a positive impact in engaging men (Brough et al., 2016; Mesler et al., 2021). There are contradicting results as to what effect a threat to masculinity has. In one study, when masculinity was questioned before participants had to make a food choice, they were more likely to choose a meat option (Leary et al., 2023). But another study conversely found that a temporary threat to masculinity did not change food choice; it was the men's general masculine ideology that really influenced their food choice (Neumann et al., 2024).

Rosenfeld (2023) notes that while this approach may reduce meat consumption in men, it reinforces stereotypes and plays on the notion that certain harmful traits should be exhibited to be considered masculine. This, in turn, excludes men who do not fit that specific (as outlined above, often harmful) framework. An educational approach that integrates masculinity in a healthy way

could play a crucial role in reshaping meat consumption among young men. While traditional masculinity is the predominant prevailing and most researched masculinity, Connell and Messerschmidt (2005) propose a framework of multiple masculinities and highlight intersections, with social influences like cultures as well as time causing a variation of different masculinities. Sumpter (2015) introduces a few of these masculinities, for example, hybrid masculinities where men distance themselves from more traditional masculinity by embracing feminine tendencies while still upholding inequality and power over women (Bridges & Pascoe, 2014, as cited in Sumpter, 2015) or natural masculinities, which also focus on dismantling restraints (Il'Inykh, 2013, as cited in Sumpter, 2015). Another example are caring masculinities, which were characterized by Elliott (2015) to reject dominance and integrate positive emotions as well as relationality.

Kaplan and colleagues (2016) observed another one of these masculinities. Based on cultural and psychological shifts that increasingly emphasize individualization and self-expression, a therapeutic discourse developed that encourages men to be more self-conscious, emotionally expressive, and reflective. Traditional masculinity, which centers dominance, competition, emotional restraint, toughness, and aggression, anti-femininity, and objectification of sexuality, and is hard to live up to, is harmful on individual and societal levels, while so-called *new masculinity* is considered healthier and more adaptive (Illouz, 2008, as cited by Kaplan et al., 2016; O'Neil, 2008). New masculinity ideology emphasizes greater self-awareness and accountability, emotionality and open communication as well as a reprioritization of life goals, with domesticity, commitment and active fatherhood gaining importance (Kaplan et al., 2016; Zysberg & Moore, 2017). To systematically study new masculinity as a concept, Kaplan and colleagues (2016) developed a scale through in-depth interviews with men in non-traditional roles, such as men in men's movements or non-traditional occupations (dancers, social workers, stay-at-home fathers). The resulting conceptualization of new masculinity includes holistic attentiveness towards the own body and towards others, questioning definitions of masculinity, like experiencing popular masculinity as too restrictive, authenticity, such as sharing emotions, domesticity and nurturing as well as a sensitivity to men's privilege, in the sense of understanding masculinity as something damaging for men as well as women. Demographically, new masculinity has been found to be unrelated to income and unrelated or slightly positively correlated with education. There is slightly more evidence that new masculinity values are higher in younger individuals, though the findings remain mixed. The results concerning a relationship

with religiosity are competing as well (Kaplan et al., 2016; Offer & Kaplan, 2021; Peeters et al., 2022; Zysberg & Moore, 2017). One study did find that black fathers scored higher in new masculinity than white fathers; another study could not confirm a relation with ethnicity (Offer & Kaplan, 2021; Peeters et al., 2022).

It has been theorized that new masculinity might reflect a self-serving stance that prioritizes self-improvement without questioning social and gender inequality (Kaplan et al., 2016). But research has shown that men who value new masculinity also show a greater emotional involvement in childcare, allowing emotional expressivity and relational intimacy as well as supporting maternal employment and a work-family balance (Kaplan & Offer, 2022; Offer & Kaplan, 2021). Adult children report a higher quality of father-child relationships when they perceive their fathers to have higher new masculinity values, facilitated by affirming communication, affection, and genuine engagement (Fellers & Schrodtt, 2020). The positive effect on relationships also extends to romantic relationships, with higher new masculinity values being connected to higher relational satisfaction (Wade & Coughlin, 2011). In the therapeutic context, combat veterans in therapy were able to use new masculinity values like emotional vulnerability and self-care to aid their psychological recovery; similarly, new masculinity is connected to a higher emotional intelligence (Spector-Mersel & Gilbar, 2021; Zysberg & Moore, 2017). On the other hand, this progressiveness does not extend to routine care like housework, work that is still less socially valued as appropriate masculine self-expression (Kaplan & Offer, 2022; Offer & Kaplan, 2021).

While new masculinity did emerge as a challenge to traditional masculinity, the two concepts are still related. New masculinity is not an antonym to traditional masculinity but rather a distinct, but not mutually exclusive concept (Kaplan & Offer, 2022; Peeters et al., 2022; Spector-Mersel & Gilbar, 2021). For example, while new masculinity differs from traditional masculinity in anti-femininity, this is not the case for the importance of status, which remains central to both frameworks (Kaplan et al., 2016). This is supported by new masculinity values as they concern meat consumption. On the one hand, Mycek (2018) found, that male vegetarians and vegans still often construct their diet in a way that centers logic and rationality instead of emotion, maintaining some part of their masculine identity. However, there is less alignment with traditional masculine traits like violence and sexual display; traits that are most connected to meat consumption (Adams, 2024; Camilleri et al., 2023). In a profile-based study, new masculinity values were lowest for consumers who were resisting change in their meat consumption.

However, a meat-averse profile showed the highest scores in new masculinity values and was associated with greater moral and ethical concern as well as more conscious eating behavior (Camilleri et al., 2023). In simple correlations, men who identify more strongly with new masculinity values report less meat consumption, a lower meat attachment and a greater willingness to reduce meat consumption, as well as have a more favorable view on vegetarians and vegans (Camilleri et al., 2023; De Backer et al., 2019). However, in a complex multivariate modeling, new masculinity values were not significantly connected to meat consumption: meat consumption was only positively connected to income and conformity to the norms importance of sex and violence and negatively connected to age. The willingness to change meat consumption, on the other hand, did have a significant positive relationship to the new masculinity norm of the sensitivity to male privilege (as well as a negative relationship with social dominance orientation) (Camilleri et al., 2024).

Nevertheless, there is at least partial support for a significant negative relationship between new masculinity and meat consumption, alongside a significant positive relationship to the willingness to reduce meat consumption. New masculinity also has an established connection to traditional masculinity, which is why this research will draw on the therapeutic discourse of new masculinity values to explore its potential positive effect concerning meat consumption when employed as framed messaging. Many interventions or education regarding sustainability rely on providing information, like health or environmental benefits, and these interventions have often proved insufficient in motivating men to reduce meat consumption (Hinrichs et al., 2022; Kildal & Syse, 2017). This study will therefore compare two types of messaging: one that solely focuses on information of health and environmental benefits of reducing meat consumption and another in which the same benefits are framed through values central to new masculinity. This study will examine if incorporating elements regarding healthy masculine identity into interventions can motivate men to be more willing to reduce their meat consumption. New masculinity was chosen over other frameworks because its operationalization has been validated and the concept is grounded in therapeutic discourse that emphasizes personal growth and relational health (Kaplan et al., 2016; Kaplan & Offer, 2022; Offer & Kaplan, 2021). Most importantly for this study, it has partial overlap with traditional masculinity and as such might resonate with men who hold more traditional masculine values while still promoting more adaptive, non-harmful expressions of masculinity.

2.4. Study Objective and Theory of Change

This study is based on several theoretical key points that essentially assume that meat consumption is not only a personal choice, but a behavior shaped by social and cultural norms. Adherence to norms within a social group, like men, is supported through mechanisms of social identity theory (Tajfel & Turner, 1979). Traditionally masculine norms and their facets, such as emotional control and dominance, reinforce meat consumption and inhibit the willingness to change meat consumption (Adams, 2024; Rosenfeld & Tomiyama, 2021). If these masculinity norms are in fact tied to dietary behavior, addressing and reshaping them may open new ways for sustainable behavior change and education for sustainable development. Understanding the connection between traditional masculinity and meat consumption (and the resistance to change) will address a possible barrier to sustainable diets. Through identifying which specific norms are most predictive of meat consumption and willingness to change meat consumption, interventions can be set up to be more psychologically informed and better targeted. Finally, by testing framed messaging, this study explores how communication around sustainability and meat consumption that include masculinities might shift dietary intentions in young men.

As such, this study will be relevant across several domains, addressing environmental policies and health concerns, gender studies, as well as the educational context. Furthermore, this study will add to research concerning the meat-masculinity link in the German-speaking context, which so far has been underrepresented. The aim of the study is to support more effective and psychologically informed climate communication, especially with the important demographic of young men, that speaks to their values without reinforcing harmful gender norms (Rosenfeld, 2023). By doing so, this study hopes to contribute to promoting long-term sustainable behavior through impactful and informed strategies.

2.5. Present Study

The presented theoretical background is the basis for the research questions, which will examine the relationships between traditional masculinity and meat consumption on the one hand and traditional masculinity and willingness to change meat consumption on the other. Additionally, the impact of framed messaging on the latter relationship will be considered.

To the author's knowledge, the meat-masculinity link has not yet been investigated in a German-speaking sample. Especially the specific facets of traditional masculinity and their

connection to meat consumption are underexamined. This results in the first research question of whether traditional masculinity is connected to meat consumption in a German-speaking sample and which facets of traditional masculinity are especially relevant. For this purpose, the first two hypotheses, in line with research and theoretical considerations as outlined above, are as follows:

Hypothesis 1a: Traditional masculinity is positively associated with meat consumption (Adams, 2024; Rosenfeld & Tomiyama, 2021)

Hypothesis 1b: There is a positive association between facets of traditional masculinity and meat consumption (Adams, 2024; Camilleri et al., 2024; Rothgerber, 2013).

The second research question examines the relationship between masculinity and the willingness to change meat consumption. As with the first question, this topic is underexamined in a German-speaking sample. Based on previous findings in other countries, the second set of hypotheses is as follows:

Hypothesis 2a: Traditional masculinity is negatively associated with the willingness to change meat consumption (Rosenfeld & Tomiyama, 2021).

Hypothesis 2b: There is a negative association between the facets of traditional masculinity and the willingness to reduce meat consumption (Adams, 2024; Camilleri et al., 2024).

Additionally, this study examined the third research question of whether the relationship between masculinity and the willingness to reduce meat consumption can be influenced through framed messages. More specifically, if including self-concept relevant information like masculinity values into interventions will have an effect in motivating men to reduce their meat consumption. Reaching the young, male demographic in the effort to reduce meat consumption for health and the environment has been challenging in the past. First, this paper explores the effect of sustainability messaging for a German-speaking sample, and second, proposes a new way to possibly reach the young, male demographic and inspire it to reduce their meat consumption. The first hypothesis here is based on previous research, the second is exploratory, as no previous research could be found:

Hypothesis 3a: Framed messages focused on sustainability will not impact the negative relationship between traditional masculinity and willingness to reduce meat consumption (Kesselstatt, 2024; Kildal & Syse, 2017).

Hypothesis 3b: Framed messages focused on new masculine values will weaken the negative relationship between traditional masculinity and willingness to reduce meat consumption.

3. Methods

3.1. Participants and Design

The sample consisted of 341 men, whose age ranged from 18 to 35 years ($M = 26,4$ years; $SD = 3,6$ years). In total, 192 participants followed an omnivorous diet, 91 a flexitarian, 13 a pescetarian, 31 followed a vegetarian and 14 participants a vegan diet. Most of the participants had completed a university degree (59%), followed by people whose highest education was a high school diploma (*Matura* or *Abitur*) (24%). The rest had a lower education (11%) or finished an apprenticeship (6%). Most participants were straight (85%). About half were in a relationship (47%), followed by single men (42%), 5% were married, the rest specified a different relationship status. In total, 232 participants lived in Germany, 93 lived in Austria, and 16 lived in other countries, primarily in Switzerland (7) and Sweden (3). Since most participants were from Germany or Austria, results will from now on be discussed as relevant for the DA-region (Germany and Austria).

All participants were asked about their conformity to traditionally masculine values as measured by the CMNI (Conformity to Masculine Norms Inventory; Levant et al., 2020) and their meat consumption. Self-labeled omnivores and flexitarians were randomly assigned to one of three groups that were exposed to one of two framed messages or no message, and afterwards asked about their willingness to reduce their meat consumption.

Only male participants between the ages of 18 and 35 that at least filled in the traditional masculinity and meat consumption parts of the questionnaire were included in the analysis, as this was the minimum information required for analysis. Of 421 participants who started the questionnaire, 42 participants did not complete the study, with most dropouts occurring during the traditional masculinity statements. Demographics were assessed at the end of the survey; as such, the reasons for dropping cannot be connected to demographic information. 38 more participants had to be excluded because they did not fit the inclusion criteria, resulting in the final sample of 341 participants.

3.2. Procedure

A pre-test ($n = 7$) was conducted prior to releasing the questionnaire, based on which changes were made for better understanding (further information about changes can be found in the description of the measure for traditional masculinity). After that, participants were recruited via snowball system and flyers as well as various Facebook, Instagram and Reddit groups related to fitness or meat consumption. Example groups are “FitnessDE” and “Der Verein der Fleischfresser – Carnivore Ernährung DE-AT-CH” [The Carnivore Society – Carnivore Diet Germany, Austria and Switzerland]. Additionally, the platform SurveyCircle was used (SurveyCircle, 2025).

The participants were invited to complete an online questionnaire on the platform SoSci Survey (Leiner, 2024). In the beginning, participants were informed about the inclusion criteria (male gender, 18-35 years old), that the study examines the relationship between meat consumption and self-concept as well as that their participation is anonymous and voluntary. After providing informed consent, they could start the questionnaire. Following data collection, the participants were thanked and debriefed about the real objective of the survey: examining the connection between meat consumption and masculinity. They were given the opportunity to leave a comment and enter a draw to win one of three 10€ Amazon gift cards. The survey was available from 6th of February until 2nd of April 2025.

3.3. Measures

3.3.1. Demographics

Demographic information was collected at the end of the survey, including the participants’ age, gender, sexuality, country of current residence, and level of education. 38 participants did not fit the inclusion criteria of age and/or gender and were excluded from analysis.

3.3.2. Diet

Participants’ diet was assessed through a single-choice question. Participants were asked to choose from five options: (a) *omnivore*, defined as “I eat meat regularly”; (b) *flexitarian*, defined as “I mainly eat a plant-based diet and occasionally eat meat”; (c) *pescetarian*, defined as

“I eat fish and seafood, but no meat”; (d) *vegetarian*, defined as “I eat no meat, fish or seafood” or (e) *vegan*, defined as “I eat no animal products”. Each diet was described to make sure all participants had the same definition of the categories.

3.3.3. Meat Consumption

Meat consumption frequency served as a dependent variable. Participants reported their frequency of meat consumption through six items adapted from Hoek et al. (2011) using the following categories: *never, less than once a week, once to twice a week, three to four times a week, five to six times a week or daily*. Six items asked about the frequency of consumption of cold cuts and sausage products, beef, pork, poultry and fish and seafood. Different categories were used as well as two to three examples per category provided to help the participants’ recollection. These items were assessed for all participants, including the ones who identified as vegetarians or vegans to register inconsistencies, of which there were none. The reliability of the scale in this sample was Cronbach’s $\alpha = .84$. The reliabilities of all (sub)scales used in the study are reported in Table 1.

3.3.4. Traditional Masculinity

The independent variable of traditional masculinity was assessed through an adaptation of the German version of the Conformity to Masculine Norms Inventory (CMNI-30; Komlenac et al., 2023, translated from Levant et al., 2020). Both main authors gave permission to use the scale. It consists of 30 items, to be rated on a six-point Likert scale ranging from 0 (*do not agree at all*) to 5 (*agree completely*). The scale has the following 10 subscales, each consisting of three items: *emotional control, winning, playboy, violence, heterosexual self-presentation, pursuit of status, primacy of work, power over women, self-reliance, and risk-taking*. Sample items include “I tend to share my feelings”, reverse coded for emotional control, “I think that violence is sometimes necessary” for violence, or “I think trying to be important is a waste of time”, reverse coded for pursuit of status.

Some items were adjusted based on comments from the pre-test and to better fit normal German language usage, as they were worded awkwardly or incorrectly translated. The full adapted German scale can be seen in the Appendix (Table A3). Reliability in this sample was poor for pursuit of status (Cronbach’s $\alpha = .59$) and questionable for self-reliance (Cronbach’s $\alpha = .66$) but otherwise ranged from acceptable with Cronbach’s $\alpha = .73$ (winning) to excellent with

Cronbach's $\alpha = .93$ (heterosexual self-presentation). Reliability for the pursuit of status subscale already proved difficult in previous studies (Komlenac et al., 2023; Levant et al., 2020) and could unfortunately not be improved for this sample. The subscale self-reliance has previously shown adequate reliability, and item variance did not seem to be limited in this sample; as such, the questionable reliability could be due to the adaptation. Reliability for the entire CMNI scale was Cronbach's $\alpha = .86$.

3.3.5. Framed Messages

Because of the environmental and health impact caused by meat consumption, only participants who identified as omnivores or flexitarians (meaning they eat meat) were randomly assigned to one of three conditions. They were exposed to one of two informational messages, or they were not exposed to a message at all (control group). The messages encouraged the reduction of meat consumption based on one of two aspects. One message was framed to focus on sustainability benefits like reduced CO₂ emissions, protection of the planet, and benefits for future generations. The second message was additionally framed to focus on masculinity by linking values of new masculinity (Kaplan et al., 2016), like rational decisions, authenticity, responsibility, and respect, to reduced meat consumption. The messages were both written by ChatGPT (OpenAI, 2023) through the prompt “*Please write two informational messages for reducing meat consumption, one based on sustainability and health, the other based on the NMI*”. The items for the NMI (New Masculinity Inventory; Kaplan et al., 2016) were provided. The messages can be found in the Appendix (Table A4).

To control for potential effects of messages per se, no message was shown for the third condition, and participants were immediately directed to questions about their willingness to reduce meat consumption.

3.3.6. Willingness to Change Meat Consumption

To assess the dependent variable of participants' willingness to change their meat consumption, three items previously used by Graça et al. (2015) were translated. On a five-point Likert scale ranging from 0 (*do not agree at all*) to 4 (*agree completely*), participants were asked to rate their willingness to change by reducing meat consumption, avoiding meat, and following a plant-based, vegetarian diet. Reliability in this sample was Cronbach's $\alpha = .84$.

Table 1

Cronbach's Alpha Reliability for Meat Consumption (MC), Willingness to Change Meat Consumption (WC), CMNI and CMNI Subscales

	α	SE	n	Items
MC	.84	.02	341	6
WC	.84	.02	283	3
CMNI	.86	.01	341	30
EC	.89	.01	341	3
WI	.73	.04	341	3
PB	.88	.02	341	3
VI	.82	.02	341	3
HS	.93	.01	341	3
ST	.59	.05	341	3
WO	.86	.03	341	3
POW	.85	.03	341	3
SR	.66	.03	341	3
RT	.91	.02	341	3

Note. For meat consumption, CMNI and CMNI subscales, data concerns the entire sample ($n = 341$). For willingness to change meat consumption, data concerns control and message groups ($n = 283$). CMNI = Conformity to Masculine Norms Inventory; MC = meat consumption; WC = willingness to change meat consumption; EC = emotional control; WI = winning; PB = playboy; VI = violence; HS = heterosexual self-presentation; ST = pursuit of status; WO = work; POW = power over women; SR = self-reliance; RT = risk taking.

3.4. Analysis

Statistical analyses were carried out through JASP and R, conducting Spearman's correlations, as well as single and multiple linear regressions (Jasp Team, 2024; R Core Team, 2024). An a priori power analysis carried out through the software G*Power (Faul et al., 2009), showed that a sample size of about 250 people was necessary for statistical power ($1 - \beta = 0.80$) at a significance level of $\alpha = 0.05$ for a small to medium effect (F -Test). Effect sizes were interpreted according to Cohen's (1988) guidelines.

4. Results

The descriptive statistics for the independent variable traditional masculinity (CMNI), the dependent variables meat consumption (MC) and willingness to change meat consumption (WC), and additionally for the facets of traditional masculinity (CMNI subscales) can be seen in Table 2 for the overall sample as well as control, sustainability and new masculinity groups.

Table 2
Descriptives of all Scales for all Relevant Groups

	Overall (n = 341)		Control Group (n = 94)		Sustainability (n = 93)		New Masculinity (n = 96)	
Variable	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
CMNI ¹	2.89	0.57	3.01	0.57	2.94	0.60	2.91	0.52
MC ²	2.42	0.88	2.70	0.64	2.70	0.76	2.62	0.70
WC ³	2.82	1.07	2.66	0.94	2.90	1.14	2.90	1.11
CMNI Subscales ¹								
EC	3.28	1.15	3.43	1.15	3.31	1.18	3.33	1.15
WI	3.47	0.99	3.63	1.02	3.58	0.98	3.43	0.90
PB	2.42	1.27	2.38	1.36	2.48	1.27	2.46	1.26
VI	2.79	1.30	2.81	1.32	2.75	1.27	2.92	1.35
HS	2.47	1.40	2.86	1.47	2.57	1.51	2.33	1.26
ST	3.62	0.92	3.66	0.95	3.70	0.91	3.63	0.91
WO	2.75	1.11	2.82	1.08	2.74	1.15	2.85	1.17
POW	1.81	0.96	1.93	1.01	1.93	1.04	1.79	0.91
SR	2.92	0.96	2.93	0.92	2.95	0.98	2.93	0.93
RT	3.40	1.16	3.61	1.10	3.35	1.15	3.42	1.19

Note. ¹possible range for CMNI and CMNI subscales: 1-6, high scores indicate high traditional masculinity; ²possible range for MC: 1-6, high scores indicate high meat consumption; ³possible range for WC: 1-5, high scores indicate a high willingness to change and reduce meat consumption. CMNI = Conformity to Masculine Norms Inventory; MC = meat consumption; WC = willingness to change meat consumption; EC = emotional control; WI = winning; PB = playboy; VI = violence; HS = heterosexual self-presentation; ST = pursuit of status; WO = work; POW = power over women; SR = self-reliance; RT = risk taking.

4.1. Meat-Masculinity Link

The first hypothesis, 1a, concerning the positive connection between the independent variable traditional masculinity (CMNI), and the dependent variable meat consumption (MC), was tested through a simple linear regression. The assumptions of linearity, homoscedasticity, and normality of residuals were visually inspected and were not violated. Results show a significant model, with approximately 16% of the variance in meat consumption being explained through CMNI scores ($F(1, 339) = 64.91, p < .001$, (adjusted) $R^2 = .16$). Traditional masculinity served as a significant predictor of meat consumption ($\beta = 0.40, t(339) = 8.06, p < .001$). A $\beta = 0.40$ can be considered a medium effect. This suggests a significant positive relationship between traditional masculinity and meat consumption in that a higher score on traditional masculinity is connected to a higher meat consumption.

The CMNI subscales did not fit the assumptions for normality; as such, the robust method of Spearman's rank-order correlation was used to examine the connection between traditional masculinity facets (through CMNI subscales) and meat consumption (hypothesis 1b). The strongest positive correlations were moderate and were found between power over women (POW) and meat consumption, followed by heterosexual self-presentation (HS) and winning (WI). The remaining significant correlations were weak for work (WO), risk-taking (RT), violence (VI), emotional control (EC) and self-reliance (SR). No significant correlations were observed for pursuit of status (ST), and playboy (PB) (see Table 3).

4.2. Willingness to Change Meat Consumption

A multiple regression analysis was conducted to examine the relationship between traditional masculinity (CMNI) and willingness to change meat consumption (WC) and whether it was moderated by framed messages. The assumptions of linearity, homoscedasticity, and normality of residuals were inspected visually and could be accepted, the Variance Inflation Factors (VIF) indicated no multicollinearity, and a Durbin-Watson test indicated that independence of residuals could be assumed. The regression model including the centered predictor CMNI, the factor group, and their interaction terms was significant ($F(5, 277) = 8.27, p < .001, RSE = 1.01$), accounting for approximately 11% of the variance in willingness to change meat consumption ($R^2 = .13$, adjusted $R^2 = .11$).

To test hypothesis 2a, concerning the relationship between traditional masculinity and willingness to change meat consumption, the relevant result was the main effect of CMNI centered for the control group. The main effect of CMNI centered was statistically significant ($B = -0.44$, $SE = 0.18$, $t(277) = -2.38$, $p = .018$, $\beta = -0.23$), suggesting that higher traditional masculinity was moderately associated with lower willingness to change meat consumption.

As in the testing of hypothesis 1b, CMNI subscales again did not fit the assumptions for normality; as such, the robust method of Spearman's rank-order correlation was conducted to examine the connection between traditional masculinity facets (through CMNI subscales) and willingness to change meat consumption (hypothesis 2b). Three subscales showed significant correlations with the willingness to reduce one's meat consumption. Heterosexual self-presentation (HS) and power over women (POW) both showed moderate negative associations with willingness to change. Pursuit of status (ST), on the other hand, showed a weak to moderate positive association with willingness to change meat consumption. All other correlations were nonsignificant (see Table 3).

Table 3

Spearman's rank-order Correlations Between CMNI Subscales and Meat Consumption (MC) And CMNI Subscales and Willingness to Change Meat Consumption (WC)

CMNI Subscale	MC		WC	
	ρ	p	ρ	p
POW	.33***	<.001	-.35***	<.001
HS	.30***	<.001	-.37***	<.001
WI	.28***	<.001	-.16	.13
WO	.21***	<.001	.00	.97
RT	.18***	<.001	.05	.62
VI	.17**	.002	-.18	.09
EC	.15**	.01	-.07	.51
SR	.13*	.02	-.18	.08
ST	.08	.14	.26*	.01
PB	.01	.86	.00	.98

Note. For meat consumption, correlations are for the entire Sample ($n = 341$). For willingness to change meat consumption, only the control group was used ($n = 94$). CMNI = Conformity to

Masculine Norms Inventory; MC = meat consumption; WC = willingness to change meat consumption; EC = emotional control; WI = winning; PB = playboy; VI = violence; HS = heterosexual self-presentation; ST = pursuit of status; WO = work; POW = power over women; SR = self-reliance; RT = risk taking.

* $p < .05$. ** $p < .01$. *** $p < .001$.

4.3. Framed Messages

As stated above, after checking assumptions, the multiple regression model was significant ($F(5, 277) = 8.27, p < .001, RSE = 1.01$), accounting for approximately 11% of the variance in willingness to change meat consumption ($R^2 = .13$, adjusted $R^2 = .11$). Neither the group exposed to a new masculinity message ($B = 0.21, SE = 0.15, t(277) = 1.42, p = .156, \beta = 0.09$) nor the group exposed to a sustainability message ($B = 0.22, SE = 0.15, t(277) = 1.47, p = .142, \beta = 0.10$) showed significant main effects, meaning willingness to change meat consumption was not significantly different whether a group was exposed to either a new masculinity or sustainability message or not.

For hypothesis 3a, the interaction between CMNI and sustainability group was not significant ($B = -0.08, SE = 0.25, t(277) = -0.30, p = .761, \beta = -0.02$). This indicates that the sustainability message did not significantly impact the relationship between CMNI and the willingness to change meat consumption compared to the control group.

For hypothesis 3b, the interaction between CMNI and the new masculinity group was not significant either ($B = -0.52, SE = 0.27, t(277) = -1.93, p = .055, \beta = -0.15$), indicating that the new masculinity message did not significantly impact the relationship between CMNI and willingness to change meat consumption compared to the control group.

4.4. Open Comment Field

Participants had the chance to leave comments at the end of the survey to clarify their statements. A total of 35 comments were submitted, which could be grouped into different topics: personal food choice, manhood and masculine identities (especially heterosexuality), phrasing and language, as well as personal greetings.

Eight were focused on explaining or commenting on food choice. On the one hand, people elaborated on their meat consumption, like their personal transition to or thoughts on vegetarianism for sustainability reasons (comments 4, 16, 25, 26). On the other hand, several comments showed disagreement with perceived social or institutional pressure to move towards

plant-based diets. For example, comment 16 questioned the impact of food production emissions in general and expressed doubt over the environmental benefits of meat substitutions, comparing emissions of tofu and chicken, citing deforestation for meat substitutions like tofu as possibly more harmful than the killing of one chicken. One participant (comment 24) criticized his university's exclusively vegetarian meals in the student cafeteria, stating that the restrictive food environment led him to increase his meat consumption "out of spite". Another participant (comment 21) noted he didn't like that the survey forced him to read a message which he perceived was lecturing him on which foods he was allowed to eat, calling them leading questions. One more (comment 17) said he was going for a steak after finishing the survey.

Several comments directly or indirectly referenced masculine identities. These included both critical reflection of traditional masculinity (comment 35) as well as comments that referenced gendered language or attitudes (comments 14 and 22). More specifically, a large number of comments were related to the subscale heterosexual self-presentation. Some criticized a perceived overemphasis on homosexuality (comments 5 and 22) or questioned the connection between sexuality and meat consumption (comment 23). Two comments were more vague, one commenter (comment 9) emphasized he was aware of his clichés, another (comment 30) said "very, shall we say, interesting text on meat consumption and masculinity". Others focused on a more specific critique. Comment 18 thought the repeated questioning that associated gayness with negative feelings seemed manipulative and leading. Comment 15 said: "I don't generally think it is bad when someone thinks I am gay because I think there is nothing wrong with that. But I would be very surprised because I am not, and I don't think I seem gay. So, I would be upset about the unfounded assumption of my sexuality."

Two participants (comment 1 and 2) commented on questions regarding the subscale violence, emphasizing the importance of context when interpreting violent acts. Scenarios mentioned, where they felt violence would be necessary or justified, were geopolitical, e.g., the Ukrainian defense against invasion or Trump's plan to annex Greenland.

The largest number of comments related to phrasing, language, and methods within the survey. Two comments concerned technical difficulties when viewing the study on a phone (comments 7 and 11). Participants highlighted the need for a better distinction between vegetarianism and veganism in the survey (comments 3, 4, 6, and 20). A few commentators felt the questionnaire included manipulative or leading questions and messages (comments 18, 21, 29), another wished for the text to use better persuasion-techniques (comment 30). Criticism also

included too many negations, questions that seemed to be repeated, as well as questioning the scientific background of the messages (comments 27, 30 and 33). One said the time he had to spent on the messages (30 seconds) was too long which had “the opposite effect” on him (comment 28). Commentator 8 had criticism concerning the translation, noting that the questions sounded like they were badly translated by an AI.

The last category included personal greetings (comments 5, 12, 13, 32), two stated the questions and study were good (comments 10 and 33), and two answered they had no comments (comments 19 and 31).

5. Discussion

The aim of this study was to provide insight into the relationship between traditional masculinity and meat consumption, particularly in the underresearched German-speaking population. Additionally, to inform education for sustainable development (EDS), the relationship between traditional masculinity and the willingness to change meat consumption was examined, as well as a possible influence of framed messaging on this relationship. The following section will interpret and contextualize the findings of this study.

5.1. Meat-Masculinity Link

Gender disparities in meat consumption show up around the world; Germany and Austria are no exception (Hopwood et al., 2024; Mohr, 2017; MRI, 2024). In countries like the US and Australia, but also in European countries like the Netherlands or Belgium, studies found that meat consumption was closely linked to the conformity to traditional masculine norms (Brough et al., 2016; De Backer et al., 2019; Camilleri et al., 2024; Leary et al., 2023; Mesler et al., 2021; Rosenfeld, 2023; Schösler et al., 2015). This study was the first to examine the connection between conformity to traditional masculinity and meat consumption for the DA-region. Results indicate that placing a higher value on traditionally masculine norms is connected to a higher meat consumption. This is in line with previous findings in German-speaking populations which posited sex-roles and gender-self-concept as central to men’s connection to meat (Mertens & Oberhoff, 2023; Weber & Kollmayer, 2022). These results are also in line with the theoretical framework of precarious manhood. This framework considers masculinity a status, which must be achieved and constantly proven through observable action. Meat consumption usually is an

observable behavior; its connection to traditional masculinity underscores that meat consumption may serve as a behavior used to enhance one's masculinity (Vandello & Bosson, 2012). The connection of traditional masculinity with meat consumption indicates that meat consumption among men is not solely based on personal preference, but embedded in gendered norms, specifically traditional masculinity norms. This also connects to meat consumption as a means to affirm gender identity, making (perceived) social pressure and stigma significant barriers to change. These findings suggest some practical implications, like that sustainability-efforts which concern meat consumption need to consider not only individual reasoning, but broader social and cultural meaning attached to meat as a symbol of masculinity. This study showed that this association of masculinity norms and meat consumption is relevant in the DA-region, meaning it needs to be addressed in EDS in Germany and Austria.

In addition to the relationship between meat consumption and conformity to traditional masculinity, this study also examined links of meat consumption with specific facets of traditional masculinity. The idea is that not all facets of traditional masculinity have the same association to meat consumption, but that some facets may be closer connected and some less so. Results of this study indicated that the facets power over women, heterosexual self-presentation and importance of winning were especially connected to meat consumption. Smaller connections were also found for the facets primacy of work, frequent risk taking, normalization of violence, personal emotional control as well as a high self-reliance. This again distinguishes this study not only as the first in the DA-region to examine the link of meat consumption to specific traditional masculinity facets but also to find significant results for almost all traditional masculinity norms in connection to meat consumption. These connections with all but two facets (importance of status and playboy), but especially the correlations with meat consumption concerning power over women and the importance of winning, indicate a confirmation of Adams' (2024) theory that connects especially hierarchical gender roles and a need for competition and dominance within the traditional masculinity framework to a higher meat consumption. The connection of meat consumption with the facet power over women underlines the theoretical considerations of Adams (2024), which extends the attitude of domination over women to domination over animals. It appears that the belief that women are something men deserve and are entitled to consume and rule over is tied to a similar domination over animals. It is likely that an individual that feels comfortable exerting power over women would have no objection to do the same with

other living things that would be ranked even lower in hierarchy than humans (Rothgerber, 2013).

Regarding sexuality, more specifically heterosexual self-presentation, the link to meat consumption was similarly high. Men who indicated they would have an issue with being perceived as homosexual also stated a higher meat consumption. A similar connection as with women, namely domination over others, could be the cause. Men put themselves at the top, with women and animals below them. The differentiation between men goes one step further: men who are associated with femininity (such as homosexuality), risk dropping down in the hierarchy (Rothgerber, 2013). Heterosexual self-presentation thus could be a way of avoiding feminization, and securing the top of the hierarchy. It would make sense that, within this system, domination over the weakest living thing in the form of meat consumption comes natural as well.

The importance of winning is the third facet of traditional masculinity that showed a moderate connection to meat consumption. The same logic of hierarchy could explain this link: competition, and in turn winning, imply a ranking of inferior and superior individuals. A win over another separates one further from those that are inferior. Meat consumption could serve as a function, a symbolic win over the inferior animals. These three connections in particular reflect how a general sense and importance of power, domination over others and superiority can extend to animals in the form of meat consumption, as put forth by Adams (2024).

Furthermore, the smaller connections of other facets of traditional masculinity with meat consumption reflect the importance of attitudes besides domination, though some still tie into this framework. Placing a high importance on work being a primary focus in life could be considered as centering performance and productivity, and meat consumption has been previously cited as a special source of energy needed for hard work (Kildal & Syse, 2017). Enjoying frequent risk taking could in this study also be connected to meat consumption. Risk taking ties into a perceived invulnerability as well as the importance of toughness. Men who frequently take risks and perceive themselves as invulnerable might again see meat as a source of energy and a symbol of strength, for example through historical ties of having to hunt for meat. This toughness and invulnerability also extend to two other facets. Emotional control centers whether a person is able and willing to talk about their feelings to another person, while self-reliance also includes not asking for help. Men who stated they did not like to talk about their emotions or seek help were more likely to have a higher meat consumption in this study. High emotional control makes it more difficult to talk about or reflect on emotions, which makes it harder to have empathy or

emotionally connect to others, including animals. This emotional detachment also aligns with the denial of animal suffering through meat consumption, as noted by Rothgerber (2013). Concerning self-reliance, this missing empathy can also be considered to extend even to the own self.

Similarly, the normalization of violence was connected to meat consumption. It seems likely that being open to violence towards others will extend to the willingness of being violent towards animals, as indicated by previous research (Camilleri et al., 2024). As meat consumption is directly tied to a violent act, namely killing animals, this connection is no surprise. As such, emotional control, violence and risk taking align with notions of toughness and emotional detachment, allowing men to distance themselves from ethical concerns connected to meat consumption.

The exploration of connections to specific facets of traditional masculinity highlighted that not all masculine traits are equally connected to meat consumption, but that dominance is especially crucial. This finding underlines another central contribution of this paper: the importance of certain traditional masculinity norms over others in the connection to meat consumption emphasize the need to distinguish between them in research as well as interventions.

While many connections could be confirmed for this sample, the notion that links the playboy norm, namely wishing for high sexual contact with different women, to the objectification of women and animals alike as something to consume (Adams, 2024) was not empirically supported in this study. Although there might be a theoretical connection, this symbolic parallel might not be connected to meat consumption in daily practice. While power over women, heterosexual self-presentation, and playboy all address sexual and relational dimensions, they possibly represent different functions in masculinity performance, which may explain their differing relationship with meat consumption. Power over women reflects dominance and control (Adams, 2024). In this case, meat consumption functions as a sign of domination over nature and others. The norms of wanting to be a playboy and heterosexual self-presentation both imply superiority over other men as well and could be seen as functioning through public perception, that is to say, being perceived as conventionally masculine, especially by other men. While heterosexual self-presentation can directly be influenced by the person themselves, the playboy norm on the other hand centers the *desire* for sexual conquest and emotional detachment towards partners, rather than actual observable behavior. Unlike meat

consumption, which is often performed in public, playboy attitudes might be more aspirational and, as such, might not directly be connected to actual behavior.

Similarly, the pursuit of status norm also did not show any meaningful connections to meat consumption. It is one norm of traditional masculinity that cannot be tied as directly to dominance, toughness and emotional control as other norms, which might be more central to meat consumption. It is also possible that the pursuit of status may more directly influence other domains, rather than meat consumption.

The strong links to facets like power over women, heterosexual self-presentation, and winning point to the importance of dominance. As especially the importance of dominance can be considered harmful to others (Adams, 2024), challenging or re-defining these norms is not only important within the sustainability-framework but also in promoting greater social equality. Additionally, the absence of connections between meat consumption and the playboy or pursuit of status facet suggests that some aspects of masculinity could be independent of diet. As such, it may not be necessary to challenge masculinity as a whole, but rather focus on specific aspects that are particularly harmful or unsustainable. Future research could employ structural equation modeling or relative importance analysis to assess the relationships of facets and their unique contributions to the outcome to examine more clearly which facets have the most impact.

The results point to a need for a broader cultural change in how masculinity is defined and performed. Within the education context, gender norms should explicitly be discussed, questioning implicit assumptions concerning especially power-dynamics in human as well as human-animal relations, but also reflect societal expectations of how gender, especially masculinity, is performed. Instead of dominance, care and empathy should be emphasized. As long as masculinity continues to be associated with dominance, control, and emotional detachment, meat consumption will be inextricably linked to masculinity. This could restrict men's ability to really take charge of their dietary choices, as they might feel pressured to choose between their social status and sustainability efforts, limiting progress in animal welfare, environmental sustainability, and public health.

5.2. Willingness to Change Meat Consumption

Meat consumption is harmful not only to personal health, but also contributes to CO₂e emissions, which are harmful for the environment (Tilman & Clark, 2014). At the moment, education for sustainable development (EDS) does not yet sufficiently address meat consumption

(Bruckner & Kowalsch, 2018). Besides misinformation about its impact (Slotnick et al., 2022; Wynes & Nicholas, 2017), research also found gender disparities in the willingness to reduce meat consumption. Previous research connected men and especially higher masculinity values and higher importance of gender-roles to a lower willingness to change meat consumption (Brough et al., 2016; Camilleri et al., 2024; Rosenfeld & Tomiyama, 2021; Schulz et al., 2024). This study suggests a similar connection in the DA-region, showing that men higher in traditional masculinity were less willing to change their meat consumption. This underlines that traditional masculine gender norms play a role in keeping men from participating in change that would not only improve their own health, but tie into a lifestyle supporting sustainability efforts. This study is among the first to confirm the link between traditional masculinity and a reduced willingness to change meat consumption in the DA-region and ties into previous findings in German-speaking populations which show men being less likely to follow a vegetarian lifestyle (Kesselstatt, 2024; MRI, 2024; Weber & Kollmayer, 2022). This shows that traditional masculinity inhibits dietary change in the DA-region. Future EDS should not only better incorporate the impact of meat consumption in the curriculum, but also consider the ties of traditional masculinity to meat consumption and the negative relationship with the willingness to change.

Importantly, this study extends those findings by identifying specific facets of traditional masculinity that are most connected to the willingness to change meat consumption, which has not yet been done for the DA-region. Specifically, the facets heterosexual self-presentation and power over women showed moderate negative connections, meaning that men who valued these norms were less likely to consider reducing their meat consumption. Pursuit of status on the other hand interestingly yielded a small to moderate positive connection, indicating that men who value a high status are more willing to change their meat consumption. The importance of power over women and heterosexual self-presentation in rejecting willingness to change meat consumption highlights how certain facets of traditional masculinity, particularly those concerned with dominance, act as barriers to adopting sustainable habits such as reducing meat consumption. For the connection of power over women with meat consumption, Adams (2024) proposed that men who feel entitled to women would also feel entitled to dominate animals. A similar conclusion can be drawn for the willingness to change, as considering a meat-free diet could mean giving up this domination. As domination is very central to the traditionally masculine identity, this could threaten the self-image.

The connection to heterosexual self-presentation could be considered similarly. Interestingly, heterosexual self-presentation and pursuit of status could both be considered as also being connected to social image, but while heterosexual self-presentation holds a negative connection with the willingness to change meat consumption, pursuit of status shows a positive connection. This indicates that they might still hold different implications, with heterosexual self-presentation concerning anti-femininity and dominance more specifically, while pursuit of status could include a broader definition of social image.

The importance of the pursuit of status is especially interesting, as it was one of the two facets that were not significantly connected to meat consumption and is also the only facet that yielded a significant positive relationship with willingness to change meat consumption. This suggests that the status norm operates differently from more dominance-focused masculine norms and the social image surrounding heterosexuality. Rather than reinforcing harmful behaviors, the pursuit of status might reflect a more adaptive orientation – which is also outlined in the fact that the endorsement of the status norm remains important for men who score high in new masculinity (Kaplan et al., 2016). For the pursuit of status, change might be more acceptable or even desirable, for example, when it aligns with socially rewarded goals like the pursuit of sustainability.

The remaining facets of traditional masculinity had no meaningful relationship with willingness to change meat consumption. These differences in both connections and strength of relationships between meat consumption and willingness to change meat consumption also highlight that meat consumption and willingness to change meat consumption are not exact opposites but distinct concepts with different implications for the self and self-presentation. While meat consumption is a habit, observable and reinforced through social settings and norms, willingness to change meat consumption is a self-reported attitude or intention and, as such, may reflect a more conscious process. This could indicate that traditional masculinity norms are more strongly incorporated in actual, observable behavior. In contrast, willingness to change meat consumption could be more of a private intention or attitude, less subject to immediate pressure to actually behave differently.

On the other hand, the observed differences could also be explained through differing sample sizes used in the analysis for meat consumption and willingness to change meat consumption, respectively. Specifically, the group which was asked about their willingness to change meat consumption was much smaller, which reduces statistical power. As such, weaker

correlations might not have been detected, as indicated by the overall still moderate correlation between traditional masculinity as a whole with willingness to change meat consumption and some small correlations of willingness to change meat consumption with traditional masculinity facets which did not reach significance. Further research should explore if the non-existent and non-significant correlations in this sample are due to differences between behavior and intention or due to sample size and smaller power. Otherwise, the differences in correlation of meat consumption and willingness to change meat consumption with traditional masculinity facets could be further examined especially as they concern addressing meat consumption and the possibility of changing to a meat-less diet with specific strategies in educational frameworks. A second concern should be the difference between willingness, intention and action, for example through a longitudinal study that examines how many of those indicating they would be willing to change meat consumption actually engage in the behavior over the following months.

Despite limitations, important implications can be drawn from the results of this study. One key implication of these results is that men may be more open to change when status is highlighted. While norms related to dominance and heterosexuality might inhibit dietary changes, as shown through the negative connections of willingness to change meat consumption with power over women and heterosexual self-presentation, status-driven masculinity or the pursuit of status might be a way to engage men in sustainable behavior. Interventions within the EDS-context could be tailored to specifically link plant-based diets with achievement, prestige, and high status. On the other hand, anti-femininity and dominance-norms should be challenged, and questioned how they influence consumption especially in young men. Additionally, it should be addressed how intentions can be implemented into actual behavior.

5.3. Framed Messages

Previous interventions, which promoted a meat-free diet by highlighting health or environmental benefits, often failed to engage men in a meaningful way (Kesselstatt, 2024; Kildal & Syse, 2017). This study employed three different approaches in the effort to test how men could be motivated to reduce their meat consumption. One control group did not have any intervention, one group was confronted with an informational message only focusing on health and environmental benefits of reducing meat consumption and one group was confronted with a message that additionally framed the information with new masculinity values. New masculinity values have been found to be connected to a higher willingness to change meat consumption,

having healthier implications than traditional masculinity while also still showing a sufficient connection to traditional masculinity (Camilleri et al., 2023; Kaplan & Offer, 2022; Peeters et al., 2022).

This study's results could extend on results from previous studies from Germany and Norway, and showed that messaging that promotes health and sustainability has little to no effect on men's willingness to reduce their meat consumption (Kesselstatt, 2024; Kildal & Syse, 2017), but still offers a more nuanced view. As expected, a sustainability message did not significantly impact the relationship between traditional masculinity and the willingness to change meat consumption when compared to the control group. Specifically, while it is the case that endorsement of traditional masculinity does in fact have a significant negative relationship with the willingness to change meat consumption, this study also suggests that the sustainability message did not resonate meaningfully with participants across the spectrum of traditional masculinity views. The fact that the slope did not meaningfully change at all indicates that one simple message alone lacks persuasive power, regardless of the level of endorsement of traditional masculinity. The message might have been too generic or too short to really challenge existing norms. Another possible explanation could lie in the frequency with which the topic of sustainability is discussed. Sustainability has become increasingly important in public discourse; participants could be desensitized towards these messages.

Some implications can be derived. Interventions within the EDS-context should move beyond generic sustainability messaging and possibly beyond sustainability messaging generally, as this study indicated that such messages lack resonance across the spectrum of traditional masculinity. Instead, EDS could focus on other approaches, for example integrating other results from this study by reflecting on the possible impact of masculinity facets. Another possibility would be to move past simple sustainability and health messages by diving deeper into the topics, like discussions about what motivates dietary choices. Future research could compare these findings in men to women's reaction to sustainability messages to examine if this possible desensitization pertains to men and women alike. A second step could examine whether multi-layered or longer interventions could have better persuasive power than a single exposure.

Importantly, this study is the first to test the potential of a new masculinity message in an effort to employ messaging targeted towards masculinity without reinforcing harmful aspects (Rosenfeld, 2023). This new masculinity messaging also had little to no effect on men's willingness to change their meat consumption, only a trend was notable, but it should be

discussed that the direction of the effect was opposite of what was expected. It was expected that a new masculinity message would have a positive impact on the relationship between traditional masculinity and willingness to change meat consumption, as in that it would result in a higher willingness to change meat consumption, especially among men identifying highly with traditional masculinity. The results of this study, while not statistically significant, support an opposite trend: a new masculinity message affected the connection between traditional masculinity and willingness to change meat consumption to become *more* negative. Keeping in mind that this did not reach significance and interpretations should, as such, be noted with caution, there are some possible explanations. On one end, unlike masculine branding that reinforces familiar, traditionally masculine traits like strength (Brough et al., 2016), the new masculinity frame challenges some of the core norms of traditional masculinity by promoting emotional openness and introspection (Kaplan et al., 2016). Furthermore, to extend on results from the first and second hypotheses concerning specific traditional masculine norms, especially masculinity norms in which traditional and new masculinity differ (for example, power over women compared to sensitivity for men's privilege) seem especially important for the meat-masculinity link. As such, for men who are deeply invested in these traditional norms, new masculinity might be perceived as a threat rather than an invitation to reflect. Men higher in traditional masculinity might even feel patronized by the new masculinity message, responding with reactance, becoming more negative towards a possible vegetarian lifestyle because they feel it being pushed on them, as has been the case with sustainability messaging before (Kildal & Syse, 2017).

On the other hand, it is possible that the new masculinity message reached men who scored lower on traditional masculinity values, appealing to a different sense of masculinity within them, motivating them to reduce their meat consumption further. Both explanations are possible and would change the slope in the way it was observed in this study. In both instances, the new masculinity message did not reach the critical group of young men who value high traditional masculinity. Despite these considerations, some implications can be drawn from the results for the EDS context. A simple informational message that included new masculinity values did not reach the intended audience of men high in traditional masculinity and should therefore not be used in this way within EDS. It is possible that these new masculinity values could be introduced gradually and within a setting, where it is possible to ask questions, like broader discussions on gender and social responsibilities, offering pathways that are less likely to

trigger reactance. Future research could also compare extreme groups to examine possible connections further, and might test if these results stay true across regions and cultures.

5.4. Open Comment Field

Since the open comment field was voluntary and, as such, is not exhaustive, it was not systematically analyzed using qualitative methodology. It nonetheless offers some context and nuance, reflecting participants' spontaneous reactions, highlighting issues of interpretations of the study as well as resistance.

One key theme that emerged was participants' personal dietary choices. Some elaborated on their shift towards vegetarianism, for example, for environmental reasons, while others expressed criticism. One commenter questioned the impact of food production, highlighting a finding by Slotnick and colleagues (2022) which indicated that the effectiveness of dietary changes on sustainability efforts is often underestimated. Others described reactance, showing that perceived coercion can provoke behavioral backlash, pointing to the importance of preserving autonomy in future research and interventions.

Another set of comments concerned the connections between masculinity, especially sexuality, and meat consumption. This referenced gendered attitudes and again questioned the premise of the study, as well as many comments did on the overemphasis or manipulative nature of mentioning homosexuality. One commentator, for example, stated he would not be offended if being perceived as gay, but would be upset at the "unfounded assumption". This may reflect a latent norm adherence, where a deviation from the heterosexual norm is possibly still experienced as a risk to the reputation, even when not explicitly homophobic. It could also possibly be related to the questions regarding homosexuality being too vague and not specific enough. The number of comments on this topic speaks to a sensitivity concerning addressing gender identity and heterosexuality. A possible implication could be that future framing and surveys that speak to gender norms must be carefully designed to avoid reactance.

Comments on phrasing, wording, and methodological concerns can also be helpful when planning future studies. Participants criticized unclear distinctions between vegetarianism and veganism, excessive use of negations, repeated or leading questions, especially around homosexuality, as well as issues with translation. Technical difficulties on mobile devices were also reported. These comments raise important implications. For one, ambiguous or leading phrasing may affect responses, with some commenters implying they felt manipulated. Secondly,

as also indicated by the pre-test, the German translation of the CMNI could possibly use revision for better clarity. On the other hand, some positive comments regarding the study showed that there is some awareness and interest in the topic.

Notably, only a minority of participants (about 10%) left comments, and those who did might have been especially motivated, critical, or reflective and as such are not representative of the broader sample. Comments were also not systematically collected, coded, or analyzed using established qualitative methods, limiting the interpretative value. Some comments were also vague, making links and interpretations speculative. Despite this, some implications can be taken from the comments, as they reveal a mix of thoughtful engagement, critique, and resistance. They also underline the importance of careful phrasing. A qualitative study regarding the issues displayed could deepen the understanding of key topics.

5.5. Limitations

While this study makes meaningful contributions to the understanding of the relationship between traditional masculinity and meat consumption, the willingness to change meat consumption, as well as the impact of framed messaging, there are also some notable limitations that should be considered. Some limitations, as mentioned before, concern only parts of the study. For example, the size of the sample, which was divided into the control, sustainability, and new masculinity groups, might have been too small to detect smaller effect sizes and, as such, led to only three significant correlations of traditional masculinity with willingness to change meat consumption. Furthermore, willingness to change meat consumption was only examined as a possibility of intention. Due to time constraints, this study could not follow a longitudinal design that examined whether this attitude would also lead participants to actually change their meat consumption. Future studies should explore if this willingness translates into actual behavior within the proposed timeframe of six months. Another limitation concerns the open comment field, whose limited interpretative value due to low participation rate as well as selection bias should be considered and possibly addressed in further qualitative studies.

Broader limitations of this study include contextual and methodological concerns. First, the sample was not representative of the general population, concerning an overrepresentation of participants who were highly educated due to recruitment mainly through academic areas. It should also be mentioned that this sample only included young men and, as such, results may not apply to other age groups. Future studies could expand on the results from this study through

broad recruitment. Second, the subscale pursuit of status partially showed poor reliability in previous studies (Komlenac et al., 2023; Levant et al., 2020) and could not be improved in this study. The reliability of the subscale self-reliance also was slightly below the threshold. Since several comments also questioned translation, ambiguous phrasing, frequent negations and repetitions, it is recommended that the German CMNI be revised to enhance linguistics as well as subscale-reliabilities.

Addressing these limitations would significantly strengthen internal and external validity, clarity, and generalizability of future research in this area.

5.6. Summary

This thesis addresses several important aspects of the meat-masculinity link by examining the relationship of traditional masculinity with meat consumption and the willingness to change meat consumption, identifying relevant subscales of traditional masculinity, as well as testing possible effects of framed messaging. More specifically, this study centered German-speaking young men, an important demographic, as the DA-region is underexplored in this context, and young men have relevant behavioral potential.

Results confirmed that traditional masculinity is significantly linked to meat consumption, thereby extending the findings on the meat-masculinity link to be applicable in the DA-region. Specifically, facets such as power over women, heterosexual self-presentation, and winning were moderately connected to meat consumption, facets connected to emotional detachment had smaller connections, highlighting the importance of dominance and emotional detachment in reinforcing dietary behavior. However, not all masculine norms showed influence. Both the facets playboy, which indicates a desire for sexual contact with different women, and pursuit of status, which indicates the desire to be important, demonstrated no meaningful connections with meat consumption. This indicates the need to distinguish between important and less important masculinity facets when discussing meat consumption. Moreover, traditional masculinity was also negatively associated with the willingness to change meat consumption, reinforcing the notion that traditional masculinity serves as a possible barrier to change, now indicated also in the DA-region. Power over women and heterosexual self-presentation again posed important facets, showing a negative correlation to willingness to change meat consumption. Interestingly, the traditional masculine norm pursuit of status, conversely, was positively connected to willingness to change meat consumption, suggesting this facet as a possible way to engage men in

sustainability efforts by linking a vegetarian diet to social rewards like prestige. The positive connection also suggests that not all aspects of traditional masculinity hinder dietary change; others could potentially be mobilized to aid the reduction of meat consumption. Regarding a possible impact of framed messaging, neither sustainability nor new masculinity messages significantly influenced the relationship between traditional masculinity and willingness to change meat consumption. This is in line with previous research that indicates limited effects of generic sustainability efforts on men and could further suggest that short messages may lack persuasive power. The unexpected direction of the effect of the new masculinity message, however, though not significant, indicates that new masculinity messaging might trigger reactance and highlights the need for further research.

In conclusion, this study confirms that traditional masculinity, particularly facets tied to dominance and emotional control, plays a critical role in sustaining high meat consumption as well as barriers to change among young men in the DA-region. The findings furthermore underline the necessity of addressing specific masculinity norms when designing sustainability interventions regarding meat consumption. EDS should discuss and reflect the role of masculinity norms, especially those related to dominance and emotional detachment, and promote values such as empathy, care and social responsibility as well as leverage the pursuit of status to motivate dietary change. Information about sustainability and health benefits, as well as new masculinity values, should not be introduced in generic messages but possibly be introduced as part of more multi-layered interventions and discussions.

Future research should build on these findings in an effort to develop psychologically informed interventions that do not reinforce harmful gender norms and effectively engage men in meaningful discourse without triggering reactance.

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8. Appendix

8.1. Assumption Checks

Table A1

Assumption Checks for Simple and Multiple Linear Regressions

Analysis	Linearity and Homoscedasticity	Normality of Residuals	Multicollinearity	Independence of Residuals
Simple Linear Regression for Hypothesis 1a	Visual inspection of the Residuals vs. Predicted Values Plot: mostly random scatter, spread roughly evenly	Visual inspection of the Q-Q-Plot: follows a straight, upward line	/	/
Multiple Linear Regression for Hypothesis 2a, 3a and 3b	Visual inspection of the Residuals vs. Predicted Values Plot: mostly random scatter, spread roughly evenly	Visual inspection of the Q-Q-Plot: follows a straight, upward line	Variance Inflation Factors: CMNI centered: 2.96 Sustainability Group: 1.37 New Masculinity Group: 1.36 Interaction Sustainability: 2.09 Interaction New Masculinity: 1.86	Durbin Watson Test: $DW = 2.06, p = .70$

Table A2*Assumption Checks for Spearman's Rank-Order Correlation*

Analysis	Monotonicity	Outliers
Spearman's rank-order correlation for Hypothesis 1b	Visual inspection of Scatter Plots: increasing trend	Visual inspection of Box Plots: > 2 outliers only for POW, exclusion of outliers yielded a correlation of $\rho = .28$, $p < .001$
Spearman's rank-order correlation for Hypothesis 2b	Visual inspection of Scatter Plots: increasing trend	Visual inspection of Box Plots: > 2 outliers only for POW, exclusion of outliers yielded a correlation of $\rho = -.29$, $p = .005$

8.2. Materials

8.2.1. Questionnaire



0% ausgefüllt

Herzlich willkommen!

Vielen Dank für Ihr Interesse an der **Studie „Fleischkonsum und Selbstbild“**!
Sie können durch Ihre Teilnahme einen wertvollen Beitrag zur Forschung leisten.

Wer wird gesucht?

- Männer
- 18-35 Jahre

Alle Angaben werden **anonym** erhoben – das bedeutet, dass *keine Rückschlüsse auf einzelne Personen* möglich sind. Diese Online-Studie wird im Rahmen einer Masterarbeit an der Universität Wien durchgeführt. Ihre Daten werden streng vertraulich behandelt, nicht an Dritte weitergegeben, nicht kommerziell genutzt und dienen ausschließlich Lehr- und wissenschaftlichen Zwecken.

Ihre Studienteilnahme ist vollkommen **freiwillig**. Zu jedem Zeitpunkt dieser Studie steht es Ihnen frei, Ihre Teilnahme ohne Angabe von Gründen abubrechen, ohne dass Ihnen daraus Nachteile entstehen. Ihre Studienteilnahme können Sie abbrechen indem Sie das Browserfenster schließen.

Die Online-Befragung wird **ca. 5-10 Minuten** in Anspruch nehmen. Es gibt **keine richtigen oder falschen Antworten**; wir sind an Ihren **persönlichen Einschätzungen** interessiert. Die **vollständige Bearbeitung der Fragen** ist sehr wichtig, damit Ihre Angaben in die Studie miteinbezogen werden können.

Falls Sie **Fragen** zur Studie haben oder über die Studienergebnisse informiert werden möchten (nur Ergebnisse der Gesamtauswertungen; Ergebnisse von einzelnen Personen können aufgrund der Anonymität der Studie nicht rückgemeldet werden), können Sie mich gerne per Email kontaktieren. Am Ende des Fragebogens gibt es für Sie die Möglichkeit, an einem Gewinnspiel teilzunehmen um 3x 10€ auf Amazon zu gewinnen.

Katharina Lux
Universität Wien, Fakultät für Psychologie | Liebiggasse 5, A-1010 Wien
E-Mail: a11936948@unet.univie.ac.at

Ich habe die obigen Informationen gelesen, verstanden und stimme meiner Teilnahme an der Studie sowie der entsprechenden Verwendung meiner Daten zu.



Weiter

In den folgenden Aussagen geht es um Ihr Selbstbild. Bitte wählen Sie aus, inwiefern die folgenden Aussagen auf Sie zutreffen.

Einige Aussagen klingen ähnlich oder haben einen ähnlichen Sinn. Bitte beantworten Sie sie trotzdem.

	stimme überhaupt nicht zu	stimme nicht zu	stimme eher nicht zu	stimme eher zu	stimme zu	stimme vollkommen zu
Ich neige dazu, meine Gefühle mitzuteilen.	☐	☐	☐	☐	☐	☐
Es würde mich ärgern, wenn die Leute denken würden, dass ich schwul bin.	☐	☐	☐	☐	☐	☐
Ich habe eine Abneigung gegen jede Art von Gewalt.	☐	☐	☐	☐	☐	☐
Es stört mich, wenn ich um Hilfe bitten muss.	☐	☐	☐	☐	☐	☐
Ich bringe meine Gefühle zur Sprache, wenn ich mich mit anderen unterhalte.	☐	☐	☐	☐	☐	☐
Die Arbeit steht für mich an erster Stelle.	☐	☐	☐	☐	☐	☐
Für mich ist es das beste Gefühl der Welt, wenn ich gewinne.	☐	☐	☐	☐	☐	☐
Es macht mir Spaß, Risiken einzugehen.	☐	☐	☐	☐	☐	☐
Ich denke, dass es Zeitverschwendung ist, wenn man versucht, wichtig zu sein.	☐	☐	☐	☐	☐	☐
Die Frauen in meinem Leben sollten mir gehorchen.	☐	☐	☐	☐	☐	☐
Es würde mich zornig machen, wenn jemand denken würde, dass ich schwul bin.	☐	☐	☐	☐	☐	☐
Ich würde meine Sexualpartner*innen häufig wechseln, wenn ich könnte.	☐	☐	☐	☐	☐	☐
Ich rede gern über meine Gefühle.	☐	☐	☐	☐	☐	☐
Ich würde es toll finden, mit mehr als einer Person gleichzeitig auszugehen.	☐	☐	☐	☐	☐	☐
Es ist niemals o.k. für mich, Gewalt anzuwenden.	☐	☐	☐	☐	☐	☐

Weiter

In den folgenden Aussagen geht es um Ihr Selbstbild. Bitte wählen Sie aus, inwiefern die folgenden Aussagen auf Sie zutreffen.

Einige Aussagen klingen ähnlich oder haben einen ähnlichen Sinn. Bitte beantworten Sie sie trotzdem.

	stimme überhaupt nicht zu	stimme nicht zu	stimme eher nicht zu	stimme eher zu	stimme vollkommen zu
Es ist mir wichtig, meinen Willen durchzusetzen.	☐	☐	☐	☐	☐
Es wäre schrecklich, wenn die Leute denken würden, dass ich schwul bin.	☐	☐	☐	☐	☐
Status ist nicht wichtig für mich.	☐	☐	☐	☐	☐
Ich setze mich riskanten Situationen aus.	☐	☐	☐	☐	☐
Die Dinge laufen tendenziell besser, wenn Männer das Sagen haben.	☐	☐	☐	☐	☐
Es geht mir gut, wenn die Arbeit meine höchste Priorität ist.	☐	☐	☐	☐	☐
Ich wäre ungerne in einer wichtigen Position.	☐	☐	☐	☐	☐
Ich tue alles, um zu gewinnen.	☐	☐	☐	☐	☐
Ich denke, dass Gewalt manchmal notwendig ist.	☐	☐	☐	☐	☐
Ich bitte niemals um Hilfe.	☐	☐	☐	☐	☐
Es ist mir wichtig, meine Arbeit über andere Dinge zu stellen.	☐	☐	☐	☐	☐
Ich finde es gut, wenn Männer über Frauen bestimmen.	☐	☐	☐	☐	☐
Ich schäme mich nicht, um Hilfe zu bitten.	☐	☐	☐	☐	☐
Ich würde mich gut dabei fühlen, wenn ich viele Sexualpartner*innen hätte.	☐	☐	☐	☐	☐
Ich gehe häufig Risiken ein.	☐	☐	☐	☐	☐

Weiter

Bitte beantworten Sie folgende Fragen zu Ihren Essgewohnheiten.

Ich würde mich beschreiben als:

- ☐ Omnivor: Ich esse regelmäßig Fleisch.
- ☐ Flexitarisch: Ich ernähre mich hauptsächlich pflanzlich und esse gelegentlich Fleisch.
- ☐ Pescetarisch: Ich esse Fisch und Meeresfrüchte, aber kein Fleisch.
- ☐ Vegetarisch: Ich esse kein Fleisch, keinen Fisch und keine Meeresfrüchte.
- ☐ Vegan: Ich esse keine tierischen Produkte.

Denken Sie an die letzten Monate zurück. Wie häufig haben Sie die jeweiligen Produkte gegessen?

	nie	weniger als einmal pro Woche	ein bis zweimal pro Woche	drei bis viermal pro Woche	fünf bis sechs mal pro Woche	täglich
Wie häufig essen Sie Aufschnitt und Wurstwaren (z.B. Schinken, Bacon, Wurst)?	☐	☐	☐	☐	☐	☐
Wie häufig essen Sie Rindfleisch (z.B. Burger, Steak, Hackfleisch)?	☐	☐	☐	☐	☐	☐
Wie häufig essen Sie Schweinefleisch (z.B. Schnitzel, Koteletts)?	☐	☐	☐	☐	☐	☐
Wie häufig essen Sie Geflügel (z.B. Chicken Nuggets, Wings, Hühnerbrust)?	☐	☐	☐	☐	☐	☐
Wie häufig essen Sie Fisch und Meeresfrüchte (z.B. Lachs, Garnelen, Sushi)?	☐	☐	☐	☐	☐	☐

Weiter

text('FM01')

Bitte lesen Sie sich folgenden Text aufmerksam durch.

Der Einfluss von Fleischkonsum auf Umwelt und Gesundheit rückt immer mehr ins öffentliche Bewusstsein.

Eine ausgewogene Ernährung mit weniger Fleisch ist nicht nur gut für die Gesundheit, sondern auch für die Umwelt. Weniger Fleisch zu konsumieren hilft, den CO₂-Ausstoß zu reduzieren und trägt zum Schutz unseres Planeten bei. Indem Sie auf pflanzliche Mahlzeiten setzen, investieren Sie in Ihre eigene Gesundheit und eine nachhaltige Zukunft für kommende Generationen.“

text('FM02')

Bitte lesen Sie sich folgenden Text aufmerksam durch.

Der Einfluss von Fleischkonsum auf Umwelt und Gesundheit rückt immer mehr ins öffentliche Bewusstsein.

Ein moderner Mann kennt die Kraft bewusster, rationaler Entscheidungen. Weniger Fleisch zu essen bedeutet, sich selbst und der Welt mit Respekt zu begegnen. Sie fördern Ihre körperliche Gesundheit, leben Ihre Werte und sind offen dafür, neue Wege zu gehen. Authentische Männlichkeit bedeutet, eigenen Überzeugungen zu folgen und Verantwortung für sich selbst und die Gemeinschaft zu übernehmen.



53% ausgefüllt

Bitte beschreiben Sie Ihre Bereitschaft, Ihren Fleischkonsum zu reduzieren. Denken Sie dabei an die nächsten 6 Monate.

	stimme überhaupt nicht zu	stimme nicht zu	stimme weder zu noch lehne ab	stimme zu	stimme vollkommen zu
Ich bin bereit dazu, meinen Fleischkonsum zu reduzieren.	☐	☐	☐	☐	☐
Ich bin bereit dazu, Fleisch zu vermeiden.	☐	☐	☐	☐	☐
Ich bin bereit dazu, mich ausschließlich pflanzlich (vegetarisch) zu ernähren.	☐	☐	☐	☐	☐

Weiter

Bitte beantworten Sie einige Fragen zu Ihrer Person.

Wie alt sind Sie?

Ich bin Jahre alt.

Was ist Ihr Geschlecht?

- ☐ weiblich
- ☐ männlich
- ☐ nicht binär
- ☐ kein Geschlecht
- ☐ keine Angabe
- ☐ eigene Angabe

Welches ist Ihr höchster Bildungsabschluss?

- ☐ Kein Schulabschluss
- ☐ Grund/ Hauptschulabschluss
- ☐ Realschulabschluss (Mittlere Reife)
- ☐ Gymnasium (Abitur oder Matura)
- ☐ Abgeschlossene Ausbildung
- ☐ Fachhochschulabschluss
- ☐ Hochschulabschluss
- ☐ Anderer Schulabschluss:

Was ist Ihre sexuelle Orientierung?

- ☐ heterosexuell
- ☐ homosexuell
- ☐ bisexuell
- ☐ pansexuell

☐ eigene Angabe

Was ist Ihr Familienstand?

☐ Single

☐ Verpartnert

☐ Verheiratet

☐ Getrennt

☐ Geschieden

☐ Verwitwet

☐ Ich lebe anders als hier dargestellt, nämlich

In welchem Land leben Sie derzeit?

☐ Deutschland

☐ Österreich

☐ Schweiz

☐ Anderes Land:

Weiter



84% ausgefüllt

Haben Sie Kommentare zu dieser Studie? Möchten Sie zu dieser Befragung oder zum besseren Verständnis Ihrer Antworten noch etwas anmerken?

(Bei Fragen kontaktieren Sie die Studienleiterin bitte per Email (a11936948@unet.univie.ac.at))

Weiter

Vielen Dank für Ihre Teilnahme!

Ich möchte mich ganz herzlich für Ihre Mithilfe bedanken.

In dieser Studie ging es darum zu untersuchen, inwiefern verschiedene Facetten von Maskulinität mit Fleischkonsum zusammenhängen. Zusätzlich sollte untersucht werden ob Botschaften, die entweder Nachhaltigkeit oder Neue Maskulinität ins Zentrum stellen, die Bereitschaft den eigenen Fleischkonsum zu reduzieren, beeinflussen.

Sollten Sie noch Fragen haben, kontaktieren Sie gerne die Studienleiterin (a11936948@unet.univie.ac.at).

[Hier geht es zum Gewinnspiel](#)

Ihre Antworten wurden gespeichert, Sie können das Browser-Fenster nun schließen.

8.2.2. CMNI-30 Items

Table A3

CMNI-30 Original, Translated and Adapted Items

Subscale	Original ¹	Translated ²	Adapted ³
Emotional Control	I tend to share my feelings. (R)	Ich neige dazu, meine Gefühle mitzuteilen. (R)	
	I like to talk about my feelings. (R)	Ich rede gern über meine Gefühle. (R)	
	I bring up my feelings when talking to others. (R)	Ich bringe meine Gefühle zur Sprache, wenn ich mich mit anderen unterhalte. (R)	
Winning	For me, the best feeling in the world comes from winning.	Für mich ist es das beste Gefühl der Welt, wenn ich gewinne.	
	I will do anything to win.	Ich tue alles, um zu gewinnen.	
	In general I must get my way.	Im Allgemeinen muss ich meinen Willen durchsetzen.	Es ist mir wichtig, meinen Willen durchzusetzen.
Playboy	I would feel good if I had many sexual partners.	Ich würde mich gut dabei fühlen, wenn ich viele Sexualpartner*innen hätte.	
	I would change sexual partners often if I could.	Ich würde meine Sexualpartner*innen häufig wechseln, wenn ich könnte.	
	I would find it enjoyable to date more than one person at a time.	Ich würde es angenehm finden, mit mehr als einer Person gleichzeitig auszugehen.	Ich würde es toll finden, mit mehr als einer Person gleichzeitig auszugehen.
Violence	It's never ok for me to be violent. (R)	Es ist niemals o.k. für mich, Gewalt anzuwenden. (R)	
	I think that violence is sometimes necessary.	Ich denke, dass Gewalt manchmal notwendig ist.	

	I dislike any kind of violence. (R)	Ich habe eine Abneigung gegen jede Art von Gewalt. (R)	
Heterosexual Self-Presentation	It would be awful if people thought I was gay.	Es wäre schrecklich, wenn Leute denken würden, dass ich schwul bin.	
	I would get angry if people thought I was gay.	Es würde mich ärgern, wenn die Leute denken würden, dass ich schwul bin.	
	I would be furious if someone thought I was gay.	Es würde mich zornig machen, wenn jemand denken würde, dass ich schwul bin.	
Pursuit of Status	Having status is not important to me. (R)	Status ist nicht wichtig für mich. (R)	
	I think that trying to be important is a waste of time. (R)	Ich denke, dass es eine Zeitverschwendung ist, wenn man versucht, wichtig zu sein. (R)	
	I would hate to be important. (R)	Ich würde es hassen, wichtig zu sein. (R)	Ich wäre ungern in einer wichtigen Position. (R)
Primacy of Work	Work comes first for me.	Die Arbeit steht für mich an erster Stelle.	
	I feel good when work is my first priority.	Es geht mit gut, wenn die Arbeit meine höchste Priorität ist.	
	I need to prioritize my work over other things.	Ich muss meiner Arbeit anderen Dingen gegenüber Vorrang einräumen.	Es ist mir wichtig, meine Arbeit über andere Dinge zu stellen.
Power over Women	I love it when men are in charge of women.	Ich finde es toll, wenn Frauen Männern unterstehen.	Ich finde es gut, wenn Männer über Frauen bestimmen.
	The women in my life should obey me.	Die Frauen in meinem Leben sollten mir gehorchen.	

	Things tend to be better when men are in charge.	Die Dinge laufen tendenziell besser, wenn Männer das Sagen haben.	
Self-Reliance	It bothers me when I have to ask for help.	Es irritiert mich, wenn ich um Hilfe bitten muss.	Es stört mich, wenn ich um Hilfe bitten muss.
	I am not ashamed to ask for help. (R)	Ich schäme mich nicht, um Hilfe zu bitten. (R)	
	I never ask for help.	Ich bitte niemals um Hilfe.	
Risk-Taking	I enjoy taking risks.	Es macht mir Spaß, Risiken einzugehen.	
	I take risks.	Ich gehe Risiken ein.	Ich gehe häufig Risiken ein.
	I put myself in risky situation.	Ich setze mich riskanten Situationen aus.	

Note. ¹Original Items by Levant et al. (2020); ²Translated Items by Komlenac et al. (2023); ³Adapted Items based on the pre-test by the Author.

8.2.3. Framed Messages

Table A4

Framed Messages

	Sustainability Message	New Masculinity Message
German	„Der Einfluss von Fleischkonsum auf Umwelt und Gesundheit rückt immer mehr ins öffentliche Bewusstsein. Eine ausgewogene Ernährung mit weniger Fleisch ist nicht nur gut für die Gesundheit, sondern auch für die Umwelt. Weniger Fleisch zu konsumieren hilft, den CO₂-Ausstoß zu reduzieren und trägt zum Schutz unseres Planeten bei. Indem Sie auf pflanzliche Mahlzeiten setzen, investieren Sie in Ihre eigene Gesundheit und eine nachhaltige Zukunft für kommende Generationen.“	Der Einfluss von Fleischkonsum auf Umwelt und Gesundheit rückt immer mehr ins öffentliche Bewusstsein. Ein moderner Mann kennt die Kraft bewusster, rationaler Entscheidungen. Weniger Fleisch zu essen bedeutet, sich selbst und der Welt mit Respekt zu begegnen. Sie fördern Ihre körperliche Gesundheit, leben Ihre Werte und sind offen dafür, neue Wege zu gehen. Authentische Männlichkeit bedeutet, eigenen Überzeugungen zu folgen und Verantwortung für sich selbst und die Gemeinschaft zu übernehmen.

English	“Public awareness of the impact of meat consumption on the environment and health is increasing. A balanced diet with less meat is not only good for your health, but also for the environment. Consuming less meat helps to reduce CO₂ emissions and contributes to the protection of our planet. By opting for plant-based meals, you are investing in your own health and a sustainable future for generations to come.”	Public awareness of the impact of meat consumption on the environment and health is increasing. A modern man knows the power of conscious, rational decisions. Eating less meat means treating yourself and the world with respect. You promote your physical health, live your values and are open to exploring new paths. Authentic masculinity means following your own convictions and taking responsibility for yourself and the community.
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Note. Messages were written by ChatGPT (OpenAI, 2023) through the prompt: “Please write two informational messages for reducing meat consumption, one based on sustainability and health, the other based on the NMI”. The items for the NMI were provided. The introductory sentence was slightly adapted based on the pre-test.

8.2.4. Open Comment Field

Table A5
Open Comment Field Results

	Original	Translation ¹
K1	In Bezug auf Gewalt bin ich leider realistisch im Patriarchat und wenn zB Trump Grönland einnimmt oder Putin die Ukraine bin ich sehr wohl der Meinung das Gewalt in Form von Verteidigung eine Möglichkeit ist, wenn Wirtschaftliche Repressalien nicht ausreichen.	Concerning violence I’m unfortunately realistic within the patriarchy and when for example Trump is annexing Greenland or Putin the Ukraine, it is my opinion that violence in the form of defense is an option when economic reprisals are not sufficient.
K2	Ich finde die Studie sehr interessant, jedoch Frage ich mich wie aussagekräftig das Ergebnis in manchen Feldern wirklich ist. Viele Fragen sind sehr kontextabhängig und würden meines Erachtens nach nur wenig tatsächliche Schlüsse zulassen. Beispielweise die Fragen zu Gewalt: Während ich private, häusliche oder andere Formen von Gewalt komplett ablehne, finde ich beispielsweise die "Gewalt" der Ukraine als Antwort auf den russischen Angriffskrieg mehr als gerechtfertigt. Aus diesem Kontext heraus musste ich die	I think this study is very interesting but I am questioning informative the results really are in some areas. In my opinion, many questions are very dependent on context and as such would not allow actual conclusions to be drawn. For example the questions on violence: I completely reject privat, domestic or other forms of violence, but I do think that the “violence” of Ukraine as a response Russian aggression is justified. In this context, I had to answer strongly pro-violence in the questions due to how they were phrased.

	Fragen dazu, aufgrund der sehr definitiven Wortwahl, stark gewaltbefürwortend beantworten.	
K3	Es gab die Aussage: "Ich bin bereit mich ausschließlich pflanzlich (vegetarisch) zu ernähren." Habe ich nicht verstanden, wäre das dann nicht vegan?	There was one statement saying "I am willing to eat exclusively plant based (vegetarian)." I didn't understand that, wouldn't that be vegan then?
K4	Ich esse viele Fleisch Ersatzprodukt. Habe bei den Fragen nach Fleisch nur echtes Fleisch angegeben, obwohl es für mich den Zweck erfüllt	I eat a lot of meat substitutions. For the questions asking about meat consumption I only answered on the real meat, even though the substitutions fulfills the same purpose for me.
K5	Wieso fragt ihr so häufig, ob ich Gay bin OMG einmal reicht doch vielen Dank hat mich gefreut LG (name redacted)	Why do you ask so many times if I am gay, once is enough... Thank you, greetings.
K6	Unklar, ob bei "Wurst/Aufschnitt" auch vegane Wurst/Aufschnitt mitgemeint ist. Ich bin davon ausgegangen, dass dem nicht der Fall ist.	It was unclear if „sausage/sliced meat” included vegan sausage/sliced meat. I assumed that was not the case.
K7	Die Frage, wie wichtig Status ist, war bei mir abgeschnitten ("Stat" statt "Status")	The question, how important status was, was cut off for me ("stat" instead of "status")
K8	Wie gesagt, da ist vieles schief formuliert. Und das fängt schon bei den Anfangsfragen an. Das hört sich fast so an, als wäre es von AI aus irgendeiner Fremdsprache übersetzt. Aber nicht von einer kompetenten. DeepLs Übersetzungen sind im Allgemeinen wesentlich besser als dieses unidiomatische Wortgedrechsel, das in diesem Fragebogen vorherrscht. Ernsthaft. Das ist ein Armutszeugnis.	Like I said, a lot of it is worded incorrectly. This starts with the first questions. It almost sounds like it was translated from some other language by AI. But not a competent one. DeepLs translations are usually much better than the unidiomatic word jumble in this questionnaire. Seriously. This is a shame.
K9	Ich bin mir meines Klischees bewusst.	I am aware of my cliches.
K10	Nein, aber hat Spass gemacht. Gute fragen	No, but it was fun. Good questions.
K11	Am Handy konnte man auf der zweiten Seite eine Frage nicht richtig lesen "Stat (...?) ist nicht wichtig für mich"	It wasn't possible to properly read one question on the second page "stat(...?) is not important for me"
K12	Viel Glück bei der Arbeit und gutes Schreiben	Good luck with your thesis and happy writing.

	{EM_SMILING_FACE_WITH_SMILIN G_EYES}	
K13	Viel Erfolg (name redacted) {EM_SMIRKING_FACE}{EM_VICTOR Y_HAND}{tone2}	Good luck
K14	Alkohol muss nicht schmecken sondern ballern. Wer was anderes sagt ist entweder schwul oder ne Frau	Alcohol doesn't have to taste good it has to hit. Anyone saying different is either gay or a woman.
K15	Ich finde es prinzipiell nicht schlimm wenn jemand denken würde, dass ich schwul bin, da ich finde, dass daran nicht verkehrt ist. Jedoch wäre ich doch sehr verwundert darüber, da ich es nicht bin und meiner Meinung nach auch nicht den Anschein erwecke. Deshalb wäre ich mehr verärgert über die grundlose Vermutung meiner Sexualität.	I don't generally think it is bad when someone thinks I am gay because I think there is nothing wrong with that. But I would be very surprised because I am not and I don't think I seem gay. So I would be upset about the unfounded assumption of my sexuality.
K16	Ich interessiere mich sehr für nachhaltig und habe deswegen auch schonmal vegetarisch gelebt jedoch ist der Einfluss auf die Umwelt nicht so groß wie hier dargestellt. Selbst wenn alle leute in deutschland von heute auf morgen nichts mehr essen würden also garnichtsmehr. Dann würde es nur 0,2% der weltmissionen einsparen. Habe ich mal gehört. Für Fleischersatzprodukte wie Tofu werden zudem auch viele Umweltfeindliche sachen gemacht wie regenwald abgeholzt um platz für tofufelder zu haben und tausende insekten und kleine tiere auf feldern getötet statt bei einem hühnchen halt ein tier.	I am very interested in sustainability and have been vegetarian before, but the impact on the environment is not as big as it is portrayed here. Even if all people in Germany would stop eating altogether, and I mean eat nothing. That would only save 0,2% of world emissions. I heard that somewhere. Production of meat substitutions also cause many things harmful for the environment, for example cutting down rain forests to make space for tofu fields and killing thousands of insects and small animals on the fields. In case of a chicken, that would only be one animal killed.
K17	Ich werde mir ein steak gönnen :)	I am going to treat myself with a steak.
K18	Wie oft die Frage kommt, mit schwul sein negative Gefühle zu verbinden, hat eine suggestive und manipulative Ebene. Da sollten die Fragen echt neutraler sein oder auch mal positiv formulieren werden.	The questions that associate being gay with something negative has a leading and manipulative element. The questions should be phrased to be more neutral or positive.
K19	Nein.	No.
K20	The study needs a little more distinction between veganism and vegetarianism	The study needs a little more distinction between veganism and vegetarianism

K21	Ich habe das Gefühl dass diese Studie suggestive Fragen stellt. Warum muss ich mir bei einer Befragung für eine Studie 30 Sekunden lang einen Text darüber durchlesen welche Lebensmittel ich konsumieren darf und welche nicht?	I feel like this study is asking leading questions. Why does this survey make me read a 30 second text on what food I'm allowed or not allowed to consume?
K22	So viele Kontrollfragen zu Homosexualität und Schovenismus {EM FACE WITH ROLLING EYES}	So many control questions on homosexuality and chauvinism
K23	Verstehe die Zusammenhänge zwischen Sexualität und Fleischkonsum nicht	I don't understand the connection between sexuality and meat consumption.
K24	Ich möchte gerne meinen Fleischkonsum reduzieren, aber nicht so wie es aktuell durchgeführt wird. Zum Beispiel ist an der Uni Hamburg nur noch Veganer, Vegetarisches Essen vorhanden. Jetzt esse ich aus Trotz mehr Fleisch und gehe einen Umweg um mich Fleischhaltig zu Ernähren. Ich finde es Fahrlässig anderen Menschen vorzuschreiben, dass sie weniger Fleisch Essen soll. Seit dem ich an der Uni studiere und mein Fleischkonsum indirekt durch Änderung der Rahmenbedingungen versucht, wird zu beeinflussen, esse ich aus Trotz noch mehr Fleisch, was mir eig. nicht gut tut. Ich werde mich erst entscheiden weniger Fleisch zu Essen, wenn ich selber dazu bereit bin, und nicht wenn die Kantine sich (auf Grund von Politischen Bestimmungen von der Grünen Politik an der Uni), sagt "so ab heute gibt es nur noch fleischfreies Essen hier, wer Fleisch essen möchte muss in die andere Kantine 10 Min weiter weg gehen". Stellen wir uns mal vor, ich würde Vegetariern vorschreiben, sie müssen Fleisch essen, dass wäre ja anders rum auch nicht in Ordnung. Oder Vegetarier müssen auch 10 Minuten weit gehen, wenn sie etwas vegetarisches Essen wollen! Aber natürlich ist es theoretisch sinnvoll, aber nicht Bevormundung eines mündigen Bürgers. Danke :)	I would like to reduce my meat consumption, but not in the way it is done at the moment. For example, they only offer vegetarian and vegan options at the university of Hamburg. Out of spite, I now eat more meat and even take a longer detour to eat meat. I think it is negligent to dictate other people that they should eat less meat. Since I study at the university and it has been tried to change my meat consumption through changing the environment, I eat more meat out of spite, even though it is not good for me. I will only decide to eat less meat when I am ready for it and not when the cafeteria (based on political decisions from the Greens at the university) says "so, from this day on we will only have meat-less food, anyone wanting to eat meat has to walk 10 more minutes to the other cafeteria". Let's imagine I would dictate that vegetarians would have to eat meat, that wouldn't be alright either. Or if vegetarians had to walk 10 extra minutes when they want to eat something vegetarian! Of course it makes sense in theory, but not through patronizing competent citizens. Thank you :)
K25	Bin sowieso am überlegen, ob ich mich vegetarisch ernähren sollte	I'm thinking about going vegetarian anyway

K26	Konnte jetzt nicht so richtig darstellen, dass ich mehr als die Hälfte meines Lebens (+15 Jahre) Vegetarier bin/war, 6 Jahre davon vegan und erst seit kurzem wieder angefangen habe Ausnahmen mit Fleisch und Fisch zu machen, aber eher zu feierlichen Anlässen oder im Urlaub, nicht im Alltag.	I couldn't really show here that I have been vegetarian for more than half my life (+15 years), 6 of that vegan and only recently started to sometimes make exceptions and eat meat or fish for festive occasions or on holiday, but not in everyday life.
K27	sehr viele verneinungen "ich wäre ungern XY" mit "Stimme nicht zu" kombinieren, würde ja heissen, ich stimme nicht zu, dass ich ungern XY, also wäre dies gleich mit "ich wäre gerne" und "ich stimme zu". --> weniger verneinungen verwenden, können verwirrend sein.	There were many negations like „I would not like XY” that were coupled with “do not agree” which would mean, I do not agree that I would not like XY, which would be the same as “I would like” and “I agree” -> less negations, they could be confusing
K28	30 sekunden für den Text sind bissi gar lang. hatte auf mich tatsächlich einen eher gegenteiligen Effekt, dass ich 20sek noch den Text anschauen konnte.	30 seconds for the text were a bit long. The fact I had 20 more seconds to look at the text actually had the opposite effect on me
K29	Einige Fragen sind sehr suggestiv formuliert.	Some questions were very leading.
K30	Sehr, sagen wir mal, interessanter Text zu Fleischkonsum und Männlichkeit (sowie Gesundheit). Sollte das der Versuch einer Überzeugung sein, hätte ich z.B. eine seriöse Quelle erwartet (oder siehe Überzeugungsstrategien nach Cialdini).	Very, shall we say, interesting text on meat consumption and masculinity (and health). Should this be an attempt of persuasion, I would expect a legitimate source (or persuasion techniques according to Cialdini).
K31	Nein	No
K32	LG von	Greetings from (name redacted)
K33	Ich hatte bei einigen Fragen das Gefühl, dass sie sich in der Fragestellung doppeln. Daran könnte man ggfs. bei künftigen Surveys achten, um Satisficing auszuschließen. Sonst aber wirklich gut und einprägsam!	I felt like some questions were double. Future studies should take that into account to avoid satisficing. But otherwise really good and memorable.
K34	Tolle Studie!	Great Study!
K35	Ich hoffe es gibt noch mehr Männer die so denken wie ich und nicht so ein "männlichen" Ego haben.	I hope there are more men that think like me and don't have such a “manly” ego.

Note. ¹Translation by the author

8.3. Abstracts

8.3.1. *English Abstract*

This study considers the sustainability and health impact of meat consumption, and a prominent gender gap, with men consuming significantly more than women. The aim is to gain a better understanding of the so-called meat-masculinity link. Previous research has identified a positive relationship between traditional masculinity and meat consumption in other countries, supported by social identity theory or the theory of precarious manhood. Traditional masculinity has been negatively tied to the willingness to change meat consumption, while sustainability efforts had no effect or triggered reactance in men high in traditional masculinity. Similar effects were expected for the usage of framed messages for this study, with new masculinity, which values self-awareness and self-growth, being effective in the effort to reduce men's meat consumption. The German-speaking demographic as well as the sub-facets of traditional masculinity in this context are a research gap this paper hopes to bridge.

A cross-sectional online study ($N = 341$) found that traditional masculinity was a significant positive predictor of meat consumption in linear regression analysis. The subscales power over women, heterosexual self-presentation, and winning showed significant positive moderate Spearman's correlations with meat consumption. Traditional masculinity was also a significant negative predictor for willingness to change meat consumption in multiple regression analysis; the subscales power over women and heterosexual self-presentation had significant positive, pursuit of status significant negative Spearman's correlation with the willingness to reduce one's meat consumption. Furthermore, no significant interaction was found when testing whether framed messaging centering either sustainability or new masculinity would change the relationship between traditional masculinity and willingness to change compared to a control group through multiple regression analysis. The results provide important implications for gender studies as well as sustainability efforts. Some limitations apply.

Keywords: meat consumption, traditional masculinity, willingness to change meat consumption, new masculinity, German

8.3.2. German Abstract

Fleischkonsum hat Nachhaltigkeits- und gesundheitsbezogene Auswirkungen und ist mit einer ausgeprägten Geschlechterdifferenz verbunden, wobei Männer signifikant mehr konsumieren als Frauen. Diese Studie soll helfen, ein besseres Verständnis der Beziehung zwischen Fleischkonsum und Männlichkeit schaffen. Die Literatur zeigt einen positiven Zusammenhang zwischen traditioneller Männlichkeit und Fleischkonsum in anderen Ländern, unterstützt durch die Theorie der sozialen Identität sowie der prekären Männlichkeit. Außerdem wurde ein negativer Zusammenhang von traditioneller Männlichkeit mit der Bereitschaft, seinen Fleischkonsum zu reduzieren gefunden, wobei Nachhaltigkeitsinterventionen keinen Effekt zeigen oder sogar Reaktanz auslösen. Ähnliche Effekte wurden in dieser Studie im Rahmen von Framed Messages erwartet, zusätzlich wurde eine Intervention als möglicher effektiver Ansatz zur Reduktion des männlichen Fleischkonsums geprüft, welche neue Maskulinität – Fokus auf Selbsterkenntnis und -entwicklung – in den Mittelpunkt stellt. Die deutschsprachige Bevölkerung sowie die Untersuchung der Subfacetten traditioneller Männlichkeit sind eine Forschungslücke, die diese Arbeit schließt.

Eine online-Querschnittsstudie ($N = 341$) zeigte in der linearen Regression, dass traditionelle Männlichkeit ein signifikanter, positiver Prädiktor für Fleischkonsum war. Die Subskalen Macht über Frauen, heterosexuelle Selbstdarstellung sowie Gewinnen wiesen signifikante positive, moderate Spearman-Korrelation mit Fleischkonsum auf. In der multiplen linearen Regression war traditionelle Maskulinität ein negativer Prädiktor bezüglich der Bereitschaft, den Fleischkonsum zu ändern; die Subskalen Macht über Frauen und heterosexuelle Selbstdarstellung zeigten negative, die Subskala Statusverfolgung eine signifikante positive Spearman-Korrelation mit der Bereitschaft, den Fleischkonsum zu ändern. Darüber hinaus zeigten sich in der multiplen Regression keine signifikanten Interaktionen, sodass davon ausgegangen werden kann, dass sich die Verbindung zwischen traditioneller Maskulinität und der Bereitschaft, den Fleischkonsum zu ändern, sich nicht signifikant ändert, wenn Framed Messaging bezüglich Nachhaltigkeit oder neuer Maskulinität genutzt wird. Die Ergebnisse liefern wichtige Implikationen bezüglich Genderforschung sowie Nachhaltigkeitsmaßnahmen. Einige Einschränkungen der Interpretation der Ergebnisse werden diskutiert.

Stichwörter: Fleischkonsum, traditionelle Männlichkeit, Bereitschaft Fleischkonsum zu reduzieren, neue Maskulinität, Deutsch

8.4. Declarations

8.4.1. Affidavit [Eidesstattliche Erklärung]

Ich erkläre eidesstattlich, dass ich die Arbeit selbständig angefertigt, keine anderen als die angegebenen Hilfsmittel benutzt und alle aus ungedruckten Quellen, gedruckter Literatur oder aus dem Internet im Wortlaut oder im wesentlichen Inhalt übernommenen Formulierungen und Konzepte gemäß den Richtlinien wissenschaftlicher Arbeiten zitiert, durch Fußnoten gekennzeichnet bzw. mit genauer Quellenangabe kenntlich gemacht habe.

8.4.2. Declaration on the Usage of Artificial Intelligence [Erklärung zur Verwendung von künstlicher Intelligenz]

Hiermit erkläre ich, dass ich die folgenden KI-Hilfsmittel zur Erstellung meiner Masterarbeit mit dem Titel „Real Men Eat Meat? The Role of Traditional Masculinity in Meat Consumption, Willingness to Change Meat Consumption, and the Impact of Framed Messaging“ verwendet habe. Ich versichere, dass die Kennzeichnung der verwendeten KI-Hilfsmittel vollständig ist, inkl. Verwendungszweck, Produktname, als auch ggfs. Prompts und Outputs des KI-Hilfsmittels. Ich verantworte die Auswahl und die Übernahme sämtlicher Ergebnisse der von mir verwendeten KI-Hilfsmittel vollumfänglich selbst.

Verwendungszweck*	Produktname des KI-Hilfsmittels	Ggfs. Prompt (Input) und Output des KI-Hilfsmittels
Finden von Formulierungen	ChatGPT	Beispiel 1: “Please write two informational messages for reducing meat consumption, one based on sustainability and health, the other based on the NMI.” (Output siehe Table A4)
Verständnisschwierigkeiten	ChatGPT	Beispiel: “Kannst du folgenden Abschnitt in einfacheren Worten erklären.“
Bewertung geschriebener Sätze	ChatGPT	Beispiel: „Please rate and critique this paragraph.“

Hilfe bei der Erstellung von Codes für die Auswertung mithilfe von R	ChatGPT	Beispiel: „R gibt mir folgenden Fehlercode: Error in cor.test.default(control_group_data_clean\$WC, control_group_data_clean[[subscale]])
Übersetzungen bei Verständnisschwierigkeiten	DeepL	Beispiel: komplizierte Sätze in wissenschaftlichen Papern

* Hilfsmittel zur Überprüfung von Grammatik und Rechtschreibung oder der automatisierten Erstellung des Literaturverzeichnisses sind von dieser Erklärung ausgenommen.