

THREATENED AT THE TABLE: MEAT CONSUMPTION, MALENESS AND
MEN'S GENDER IDENTITIES

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF THE
UNIVERSITY OF HAWAI'I AT MĀNOA IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY
IN
INTERNATIONAL MANAGEMENT

MAY 2014

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Keywords: masculinity, ideology, social identity, symbolic consumption, man of action hero

ACKNOWLEDGMENTS

My sincere appreciation goes to my entire dissertation committee for the time and expertise that they dedicated toward the process, be it in person or from a distance. I am especially thankful for the guidance and the insights provided by my committee chair Dr. Qimei Chen. Her brilliance in consumer behavior and marketing research will continue to inspire me.

I would like to thank my committee member Dr. Eric Yorkston for his encouragement and valuable feedback. I owe many thanks to Dr. Loriena Yancura and to Phil for both being amazingly empathetic counselors. Maraschinos!

Many thanks go to Dr. Andy Reilly for his expertise, his advice, and for being a great friend. I cannot begin to express my gratitude to Dr. Dalila Ayoun whose unconditional support was undeniably crucial for the success of this endeavor.

It would have been impossible to succeed without my friends, near and far, who provided me with strength and great insight along the way. Mahalo to all of you.

Most of all, I want to thank my family and my partner for their love and angelic patience.

Aloha.

ABSTRACT

Manhood is a precarious state (Vandello et al. 2008) for masculinity is bestowed upon men by others in society and needs to be continuously earned by following male gender role norms. Previous research has found that meat is associated with maleness in Western cultures and men use meat incorporation as a signal to communicate masculinity. This association leads to heavier meat consumption among men and has been linked to negative physical health outcomes as well as increased mortality.

In this dissertation, a set of 4 studies was conducted to demonstrate that men express higher preference for meat compared to women (Study 1); when facing threats to masculinity, men tend to perform defensive acts in the form of increased meat consumption in order to repair their threatened masculine self-representation (Study 2); compared to vegetables, only meat incorporation has the ability to symbolically restore threatened masculinity and alleviate the aversive emotional states triggered by threats to masculinity (Study 3); and finally, affirming men's global sense of masculine identity by priming a masculine prototype complementary to their inherent masculine gender identification alleviates the aversive psychological state triggered by the threat; and leads to improved attitudes toward an otherwise eschewed vegetarian food item (Study 4).

This dissertation offers practical guidance for marketers on how to influence men's meat consumption in positive ways, eventually enabling healthier eating behaviors.

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INTRODUCTION

At a diner:

Frank [frustrated that the waiter messed up his order]: “Oh, no. I said ‘no mayo’ like 15 times.”

Lynette: “I’ll trade with you. You want my salad?”

Frank: “Ah...let me check.” [glances down between his legs] “No – still got a penis! I want my hamburger the way I ordered it!”

The above dialogue from the TV show *Desperate Housewives*¹ takes place between the main character Lynette and her soon-to-be stepfather Frank. Sitting in a diner, their exchange illustrates how Frank takes Lynette’s forthcoming offer to trade her salad for his flawed hamburger the wrong way, and interprets it as an attack on his manliness. In Frank’s eyes, the salad is a feminine food that is suitable for women only, and that he would thus feel emasculated by relinquishing his masculine hamburger, accepting Lynette’s well-intentioned offer to let him eat her “girly” salad.

Many cultures associate meat with masculinity (Adams 2003; Counihan 1999; Fiddes 1991; Rifkin 1993; Rothgerber 2012; Rozin et al. 2012). Rozin et al. (2012) explored the psychological associations between red meat and maleness in modern Western cultures in particular. The consumption of red meat and processed meat can pose a significant health risk (Sinha et al. 2009) that traditional men would gladly embrace before taking the slightest risk of being associated with the feminine attributes of vegetarian diets (Rothgerber 2013). Masculinity is a precarious state that needs to be continuously displayed and demonstrated for it not to erode or be challenged. Thus, the incorporation of meat serves both as a symbol and as a signal for masculinity. Despite a significant body of research pointing out the linkage between meat and maleness, to the best of my knowledge, the effects of masculinity and men’s personality traits on their food consumption practices, specifically meat, have not yet been investigated.

Gender permeates all aspects of life. Men and women usually have certain associations regarding objects or behaviors in terms of their appropriateness for each

¹ Season 7, episode 13, aired January 2011, abc television network

gender. When it comes to food choices, men and women “do gender” (West and Zimmerman 1987) by consuming what is deemed as gender appropriate foods. Red meat is a particularly archetypical masculine food (Adams 2003; Rifkin 1993; Rozin et al. 2012), most often emphasized by men, whereas women typically minimize meat in expressing gender. At the same time, eating vegetables or plant-based food items is associated with femininity (Adams 2003; Ruby and Heine 2011).

The last decades of socio-economic changes have eroded the masculine identities of men: Men’s jobs in certain industry sectors have become more routinized and, as traditional gender roles have changed, women have gained more independence by entering the workforce (Holt and Thompson 2004). A recent article in *Business Newsweek* exemplifies the complete gender role reversal experienced by the husbands of successful female CEOs who are staying at home taking care of the kids while their wives have become the breadwinners in the family (Hymowitz 2012). Other authors (Romano and Dokupil 2012) note that “The Traditional Male Is an Endangered Species” encouraging readers to rethink masculinity. This role reversal comes as bad news for men who embrace traditionally masculine attitudes.

However, in these times of change and male anxiety, one stronghold of masculinity remains: Red Meat. Whether it is hunting wild game or overseeing the transition of ground beef patties from supermarket to BBQ to picnic table, red meat, aside from its nutritional value, seems to have the power to compensate men for emasculations suffered in other domains of life (Buerkle 2009).

While men’s traditional gender role may remain unscathed when they use meat to cast aside possible doubts about their own masculinity, their bodies may suffer in the long run. Numerous medical studies support the notion that red meat and processed meats increase mortality and the risk of heart disease and cancer. For instance, medical researchers (Flint et al. 2010; Key et al. 1998; Micha et al. 2010; Pan et al. 2012; Pan et al. 2011; Schectman 2009) find that red meat consumption is associated with an increased risk of total, cardiovascular, and cancer mortality; recommending its substitution with healthy protein sources such as lean meats or legumes and soy. A study conducted by Sinha et al. (2009) that received a lot of media attention indicates that 11% of deaths can be prevented by reducing the consumption of red meat and processed meats.

Despite these facts, men consume more meat (Center for Nutrition Policy and Promotion 2000; Gossard and York 2003) and fewer vegetables (Kubberød et al. 2002; Prättälä et al. 2007; Serdula et al. 2004) than women. Men are also more likely to endorse “pro-red-meat” statements and express anti-vegetarian attitudes because vegetarianism is considered feminine (Rothgerber 2013; Rozin et al. 2012; Ruby and Heine 2011).

The concept of vegetarianism is not a clear-cut dichotomy between exclusive carnivores and exclusive herbivores, but rather offers a spectrum of practices and individual beliefs regarding food consumption. According to Ruby (2012), vegetarians define themselves to varying degrees on a spectrum from categorical animal-derived nutriment abstinence (vegan) to liberal meat minimizers (flexitarian). Hence, the word “vegetarian” is laden with various meanings regarding health and morals for the practicing vegetarian and thus can be problematic to define unambiguously or to measure on an individual level for the researcher. Therefore, the focus of the present research is not so much on investigating vegetarian practices, but on investigating men’s practices of meat consumption. Although the two concepts are related, eating less meat does not constitute a categorical conversion to vegetarianism. However, reducing meat consumption may positively influence health (World Cancer Research Fund / American Institute for Cancer Research 2007).

The strongly pronounced gender-food linkage presents a dilemma for men when it comes to deciding what to eat: EITHER choose the steak; reaffirm the male gender role and possibly die young from cardiovascular disease as a consequence OR choose the tofu stir-fry, thus subjecting the male ego to doubt, but live a long, healthy life.

THEORETICAL BACKGROUND

The Meaning of Food: Incorporation and Identity

The procurement, production, and consumption of food take a central role in the activity of every living organism to sustain itself. In all human cultures, food has a multidimensional character and is linked to identity, culture, behavior, and the psychology of the individual as well as the collective (Caplan 1997; Fischler 1988).

As Fischler (1988, p. 279) states, by incorporating a food into the body, “we become what we eat.” Not only does food sustain the biochemical processes in the body, but also it is universally believed that food acts on the very essence and nature of the consuming body. In popular wisdom, eating a particular food transfers the ascribed characteristics of the source to the eater (Århem 1989; Counihan 1999; Fischler 1988). Examples of analogous transfer would be the consumption of muscle meat or blood: They symbolize the strength or vitality of the source animal when incorporated. More simply put, the more fearsome and resilient the slain beast was, the stronger the symbolic transfer of power to the hunter will become upon eating its meat.

In a broader sense, acts of incorporating food during mundane and special occasions symbolize collective identity and also belongingness. For the same reason, food can also indicate otherness; for example if a member of an in-group rejects a food that holds symbolic value for the group. More specifically, men who reject eating meat are often perceived as feminine due to the vegetarian-femininity association. Thus, while rejecting meat may only constitute a minor deviation from the masculine norm, it is often perceived as detrimental to the image of the larger group and may result in social backlash (Rudman and Fairchild 2004), thus making it difficult for men to adopt meatless diets.

Maleness and Meat: Linked in Metaphor and History

As Sobal (2005, p.137) aptly states, “animal flesh is a consummate male food, and a man eating meat is an exemplar of maleness. Men sometimes fetishize meat, claiming that a meal is not a ‘real’ meal without meat.”

The strong association between meat and maleness permeates popular culture; Red meat is regarded as a particularly archetypical masculine food (Adams 2003; Rifkin 1993). The linkage between maleness and meat has been reviewed and quantitatively investigated by Rozin et al. (2012) using a variety of methods (see Table 1). The authors found evidence from a variety of methodological angles supporting the notion that there is an associative linkage between mammal muscle meat and psychological maleness.

Table 1 – Selected methods to investigate metaphor-product relationships. From Rozin et al. (2012)

Method	Illustration: Maleness and meat	Methodological considerations
Implicit association tests	The more congruent the relationship between maleness and meat, the shorter one's affirmative reaction time would be when "meat" and "male" are paired (along with "vegetables" and "female") than when the opposite pairings are presented.	While there is debate whether implicit association test results measure individual beliefs or social norms, they do represent a robust measure of some relationships that exist in the mind.
Free associations	These are spontaneous thoughts about meat. Key variations in how individuals think of meat can be investigated by asking people to write down the first words that come to mind when they think of beef. Answers can then be analyzed for content.	A classic technique measuring what comes to mind. It is extremely easy to elicit but very context sensitive. It is an exploration of mental associations.
Indirect-scenario-based-inferencing	Investigate gender-related attributions for meat preference by using scenarios that vary one's gender and one's food preferences (meat vs. vegetables) and then measuring the masculinity of the target subject of the scenario.	An effective scenario tool is the Asch impressions technique.
Direct measurement profiling	This is more of a direct hypothesis test. Participants rate a wide range of foods on the extent to which they are perceived as male or female.	The most straightforward and direct measurement of the link between a food and gender. More extreme versions of the product (e.g., rare vs. cooked steak) can examine degrees of differentiation.
Preference and choice	If meat is associated with maleness, males should prefer meat more than females do, and females should avoid eating meat more than males do.	Study can examine past reported behavior, stated preferences, or actual choice.
Linguistic analysis	A number of languages (e.g., Spanish, German, Hebrew, and Russian) use gendered nouns. If meat is more associated with the male gender than the female gender in these languages, it would offer a form of cross-cultural support.	Explores the gender status of critical (meat) words, including gendered nouns but also contexts in which the words are used. Divergent validity can be investigated by assessing whether opposite words (e.g., fruits) are female gendered.
Metaphor priming or threat with consumption measure	If a metaphor – such as maleness or masculinity is central to one's self-identity, threatening one's masculinity could lead people to over-compensate by consuming more meat.	Unvalidated. The metaphor has to be strongly linked to self-identity and threatened when one also has the opportunity of consumption.

Historically, the linkage between maleness and meat is deeply engrained in the metaphors of Western cultures and, as a result, meat has not only nutritional, but also symbolic value (Heinz and Lee 1998; Rozin et al. 2012). Over time, the hunting, the killing, and the sharing of meat have been associated with higher status, as men were involved in the procurement and allocation of meat. The practice of hunting large game animals, which requires physical strength and power, historically belongs in the male domain across various cultures. Men in hunter-gatherer societies, for example, acquire symbolic capital within a group by signaling their courage, competence, and value as resource providers by means of exposing themselves to risk and bodily harm while hunting (Bird and Smith 2005; Gurven and Hill 2009; Smith 2004). Commonly regarded as the stronger sex (Courtenay 2000), many people believe that men's more muscular bodies require specific nutrition that can only be accomplished by consuming the muscle meat of another organism. The linkage between the strength required to hunt down an animal and the subsequent consumption of the meat of the animal in order to nourish the muscle and strength of the hunter signifies man's domination over the natural world (Fiddes 1991). As such, people not only express their social identity and group membership via such conspicuous consumption (Kleine III et al. 1993; Lamont and Molnár 2012), but they also use it as a means to construe and maintain the harmony of their psychological selves (Holt and Thompson 2004; Schouten 1991).

Manhood: A Precarious State

The reason why many men may choose to remain on relatively unhealthy diets is perhaps linked to the social and ephemeral nature of the masculine self. The masculine self is something that the owner does not have direct control over; it is rather bestowed upon men by acting in accordance with gender norms. Contrary to the commonsense view, the masculine self is not a psychological entity, nor a built-in feature of male bodies, but "it is a self that is imputed to an individual based on information given and given off in interaction" (Schrock and Schwalbe 2009, p. 280). Manhood needs to be continuously earned by following male gender role norms (Vandello et al. 2008). When the masculine identity is attacked or questioned, men react with heightened anxiety and aggression. The attribution of masculinity by others matters tremendously and men seem to be willing to go to great lengths to protect the masculine self, often heedlessly ignoring

well-known dangers associated with stereotypically masculine behaviors (Courtenay 1999; 2000, 2011; Mahalik et al. 2007; Newcombe et al. 2012; Pleck et al. 1994), for example by using the display of unhealthy meat diets or oversized meals as an impression management technique to signal masculinity (Vartanian et al. 2007).

The basic notion of the social constructionist perspective of masculinity (Brod 1987; Connell 2005; Kimmel and Messner 1989; Rudman and Glick 2008) is that men need to be constantly engaged in masculine behaviors in order to validate their continually contested masculinity (Connell 2005). Compared to womanhood, manhood is attributed to social reasons rather than biological reasons and thus, men display a unique sensitivity to situational factors that compel them to defend their gender status (Kimmel 2004). Threatening men's gender identity also triggers unpleasant emotions of fear and aggression (Burke and Stets 1999; Cramer 1998; Eisler et al. 1988; Vandello et al. 2008). Putting meat on their plates is perhaps one way for men to nip doubts about their masculinity in the bud.

The Masculine Self: Threatened, Defended, Affirmed

People are generally motivated to protect the perceived integrity and worth of self (Steele 1988). For men, this entails socially construing themselves as masculine. The elusive social nature of masculinity and the need to constantly maintain and uphold it can lead to defensive reactions if men feel that their masculinity is called into question (Cramer 1998). This process hinges on the motivation to maintaining the coherence of the individual's self-representation, which is the image that a person "has of him or herself based on his or her own interpretations" (Racamier, as cited in Ghorpade 2009, p. 74). Thus, self-representation is strongly influenced by perceptions, and lived experiences of the owner of the "self". External feedback or stimuli that are contrary to the prevailing inner interpretation about the masculine status of the self disturb the coherence of self-representation and trigger aversive emotions, such as anxiety. As a psychological countermeasure, as predicted by the psychological defense framework (Cramer 1998), men defensively resort to undeniably masculine behaviors, such as eating meat, and perhaps roasting it on a BBQ to restore the integrity of the self and to reduce the discrepancy between prevailing self-representation and contrary feedback. To maintain

control of their self-representation, men defensively act upon masculinity threat within the confines defined by that very threat.

However, self-affirmation theory (Aronson et al. 1999; Sherman and Cohen 2006; Steele 1988) states that reminding people of “who they are” can serve as an alternative way of affirming the self, that allows people to contextualize threatening events in “a broader, larger view of the self” thus enabling people to “deal with threatening events and information without resorting to defensive biases” (Sherman and Cohen 2006, pp. 6-11). Marketers have the opportunity to influence representations of masculinity as external intervention to foster healthier consumption behaviors. In Western cultures, male gender identity is based on the prescriptions of hegemonic masculinity (Connell 2005) that emphasizes “competitiveness, assertiveness, physical strength, aggression, risk-taking, courage, heterosexuality, and lack of feminine traits” (Willer et al. 2013, p. 983). The socially respected ideal of hegemonic masculinity is an integral structuring force in shaping men’s identities and gender role orientation (Connell 1987; Connell 1998), but may not particularly support healthy behaviors or lifestyles (Courtenay 2000). O’Neil (1981, p. 203) described the concept of gender role orientation as “behaviors, expectations, and role sets defined by society as masculine or feminine, which are embodied in the behavior of the individual man or woman and culturally regarded as appropriate to males or females.” Since their development, the Bem Sex Role Inventory (BSRI, Bem 1974) and the Personal Attributes Questionnaire (PAQ, Spence et al. 1975) have been used to measure the constructs of masculinity and femininity, as components of gender role orientation or gender identity. The masculinity subscale of the PAQ, is reported to be a well-suited instrument (Helmreich et al. 1981) to measure gender role orientation and the degree of masculine gender identification; it was used in the proposed studies to measure participants’ gender identification. According to Blashill and Powlishta (2009, p. 784) in both scales, “masculinity has been largely defined as the possession of instrumental traits (e.g., autonomy, dominance, and assertiveness), whereas femininity has been largely defined as the possession of expressive traits (e.g., empathy, nurturance, and sensitivity).”

Men’s individual level of (masculine) gender identification provides an interpretive frame for day-to-day experiences and the formation of prevailing self-

representations that they hold about themselves. The behavioral prescriptions of the hegemonic cultural masculine ideal (Connell 2005) are paramount to the structuring of men's identities and social interactions (Allen and Smith 2011; Carnaghi et al. 2011; Glick et al. 2007; Rudman and Glick 2001; Rudman and Glick 2008). Whereas femininity is attributed to women due to biological sex, men are not naturally categorized as masculine purely on the basis of their biological sex (Vandello et al. 2008). Accordingly, adhering to and representing the ideal standard of masculinity -as prescribed by the hegemonic cultural ideal- is imperative for men in order to obtain and maintain masculine status.

However, the singular conceptualization of a hegemonic masculinity misses "much of the situational complexity of contemporary Western societies", whereas models of plural, flexible masculinities "emphasize the negotiation and management of a dynamic and situational process, in which men may select from a variety of models of manhood that may be evaluated, invoked, and enacted" (Sobal 2005, p. 151). Just like not every meal calls for the symbolic enactment of male dominance in the form of roasting freshly hunted game over an open flame (Sobal 2005), men have multiple masculinities at their disposal that they malleably enact in their lives in various situations (Coles 2009; Connell 2005; Holt and Thompson 2004; Moisio et al. 2013): As a result, the focus on the singular hegemonic version of masculinity may have diverted attention away from the experiences of non-traditional men who exhibit stereotypically feminine traits (Chen et al. 2004). As such, inner representations of masculinities can be manifold and "cause a particular experience of self in a given moment" (Falkenström 2003, p. 4) and can be activated by external cues.

Consequently, the possibility of activating a variety of masculine self-representations (Sobal 2005) can enhance men's individual interpretation of their intrinsic masculinity beyond the confines of the monolithic, singular hegemonic ideal, thus serving as "self-affirmation" and inuring the ego against perceived threats (Sherman and Cohen 2006).

Study overview. It is argued that masculinity is an important determinant of meat incorporation intent. The overarching hypothesis that men use meat to symbolically enhance their masculinity in a food consumption context is tested in a set of four studies:

Study 1 investigates the differences in food choices between women and men with regards to the symbolic properties of meat and vegetables. Subsequent studies are limited to male samples and focus on men's perceptions and psychological process that is hypothesized to play a part in the masculating effect of meat. Study 2 employs a psychological defense framework to illuminate how men use meat to symbolically restore diminished status when their male gender role is threatened. Study 3 provides further evidence for the restorative symbolic effect of meat in particular on men's threatened masculine self-representations by inhibiting participants' access to meat. Study 4 investigates how the hypothesis of a malleable self-concept (Aaker 1999) can be applied to prime men with two socially accepted male prototypes (Holt and Thompson 2004) to alleviate the negative effects of masculinity threat (Sherman and Cohen 2006) enabling them to improve their attitudes towards vegetarian food options that are generally considered feminine.

The objectives of this investigation are to: a) extend the findings of Rozin et al. (2012) concerning the psychological association between meat and maleness to a consumption context, b) examine the implications of the precarious, social nature of masculinity on meat consumption, c) explain the process by which a threatened masculine identity manifests in higher amounts of meat incorporation, d) identify the moderators of this process and possible interventions, e) to quantitatively investigate the malleable nature of men's self-representations in the context of psychological self-affirmation to promote healthier diets, and f) establish a connection between the traditionally qualitative literature on Masculinities research and the quantitative branch of literature on consumer behavior.

STUDY 1: GENDERED PIZZA TOPPINGS – BACON VS. BROCCOLI

Apart from nutritional considerations, meat and vegetables diverge massively in symbolic value. The focus of study 1 is on the symbolic properties ascribed to consumption practices centering around power, domination, meat and maleness. Considering how engrained the linkage between maleness and meat is in Western cultures, men would be expected to make their food choices accordingly and hence be

more likely to incorporate larger amounts of meat than vegetables into a single meal than women. Study 1 investigates formally,

H1: Men (vs. women) will incorporate larger amounts of meat and smaller amounts of vegetables into a single meal.

Study 1: Method

Participants. A total of 106 participants (55 women) living in the United States were recruited online via Mechanical Turk to take part in a Qualtrics survey, purportedly to evaluate an online pizza ordering system. Twenty responses were removed from the sample because respondents indicated food allergies such as gluten intolerance or dietary restrictions based on religion that would prevent them from eating pizza, leaving a total of 86 respondents (45 women) with a median age of 25-34 years. In order to operationalize the variables of intended meat and vegetable incorporation, study 1 employed a pizza composition task to measure the variables of interest. Historically, pizza contains a large variety of toppings, thus the amount of meat and/or vegetables can vary within the same serving. Pizza is thus a versatile food item that can take the form of a meat lovers pizza, a veggie pizza, or any hybrid combination without compromising its basic recognition value.

Due to its culinary globalization, pizza is a popular food item in the United States that both men and women freely associate with the word “food” to a similar degree (Rozin et al. 2002). Furthermore, pizza is so omnipresent in the nutritional landscape that it is not associated with a particular mealtime, or method of preparation and/or procurement, which would introduce biases into the proposed studies. Its commonness and adaptability make pizza a versatile instrument to measure respondents’ relative meat and vegetable incorporation intent.

Pizza topping pretest. A pretest with 452 participants (261 women) was used to evaluate a list of 35 typical pizza toppings sourced from a variety of pizza recipes. The participants were asked to rate whether the topping was more appropriate for men or for women, by using horizontal sliders on continuous scales anchored with “preferred by

women” on one end and “preferred by men” on the other end. The starting position of the slider was centered between the two labels. The pretest identified four pizza toppings considered to be highly masculine and four pizza toppings that are considered to be highly feminine. The resulting scores for each topping were standardized, where a negative score indicates that participants deemed a particular topping as feminine, whereas a positive score indicates that a topping was considered masculine. See Table 2 for detailed pretest results.

Table 2 – Study 1: Pizza topping pretest results. Standardized scores. Low (high) scores indicate that participants deemed the particular topping more appropriate for women (men). An asterisk (*) indicates selected toppings used for the pizza composition task.

Pizza Topping	Std. Mean	Std. Deviation	N
Tofu	-1.26	1.12	418
Eggplant*	-1.07	1.11	410
Sprouts	-0.99	1.18	411
Spinach*	-0.92	1.24	410
Broccoli*	-0.88	1.17	412
Avocado	-0.81	1.17	400
Artichoke hearts*	-0.77	1.20	403
Goat cheese	-0.73	1.26	405
Basil	-0.71	1.19	401
Salmon	-0.54	1.27	399
Portabella mushroom	-0.50	1.32	400
Tomato	-0.47	1.18	387
Pineapple chunks	-0.40	1.35	399
Tuna	-0.32	1.32	394
Red bell pepper	-0.22	1.31	401
Green bell pepper	-0.21	1.37	394
Chicken breast strips	-0.17	1.43	405
Bleu cheese	-0.16	1.40	400
Shrimp	-0.15	1.34	396
Olives	-0.10	1.34	391
Caramelized onion	-0.03	1.34	399
Boiled egg	0.03	1.36	396
Parmesan cheese	0.08	1.22	384
Mozzarella cheese	0.10	1.23	385
Lobster	0.20	1.38	398
Sliced onion	0.36	1.23	391
Anchovies	0.68	1.34	395
Cooked ham	0.81	1.30	404
Fried egg	0.84	1.25	390
Salami	1.21	1.15	413
Pepperoni sausage*	1.27	1.13	416
Ground beef	1.31	1.12	418
Bacon*	1.38	1.16	414
Meatballs*	1.38	1.04	411
Steak*	1.61	1.02	424
Valid N (listwise)			346

As expected, the toppings with the highest masculine ratings were red meats such as steak, bacon, pepperoni sausage and meatballs, while the feminine toppings were vegetables such as eggplant, spinach, artichoke hearts, and broccoli. Albeit their high feminine and masculine scores respectively -after reviewing participants' open ended comments- the tofu, sprout, avocado, and ground beef toppings were excluded from the final measurement instrument as some participants considered these toppings as untypical for pizza or were not familiar with them.

Procedure. Participants were told they were evaluating an online pizza ordering system. Two basic pizza toppings, namely tomato sauce and cheese were included alongside the four meat and four vegetable toppings in order to make the task more convincing. To customize their pizza, participants were using 10 horizontal sliders (ranging from “none” to “a lot”) in an online interface to indicate the relative amounts of each topping they would put on the pizza that they were intending to order for themselves. Hidden from the user, the scores for each topping were recorded ranging from 0 to 100. Totaling the individual scores for all meat and vegetable items respectively yielded the values for the dependent variables. On five-point Likert scales, respondents also indicated the quality of the overall experience of using the online system, the availability of pizza toppings, and how likely they were to use it again in the future. Respondents were also asked how many hours ago they had last eaten in order to control for the potential effect of hunger. Finally, participants indicated their gender and responded to three yes/no statements regarding their meat consumption habits as used in previous studies (Rozin et al. 2003; 2012): “I avoid eating red meat/ I avoid eating meat/ I am vegan: I avoid eating any product that comes from an animal.” A summative meat avoidance index (MAI) was derived from these statements, indicating the degree to which participants avoided meat in their diets.

Study 1: Results

In order to ensure that the meat and vegetable toppings were in fact seen as different from each other, a principal component analysis with varimax rotation of the eight pizza toppings was conducted on data gathered from 86 participants. An

examination of the Kaiser-Meyer Olkin measure of sampling adequacy suggested that the sample was factorable ($KMO=.62$). The four meat and four vegetable toppings loaded on two factors, which together accounted for 53% of variance. Factor loadings are reported in Table 3.

Table 3 – Study 1: Orthogonally rotated component loadings for meat and vegetable toppings. Factor loadings $> .20$ in bold.

Component	Factor 1	Factor 2
Steak	.67	.10
Bacon	.74	.08
Pepperoni sausage	.54	-.27
Meatballs	.75	.05
Eggplant	.07	.79
Spinach	-.03	.72
Artichoke hearts	-.04	.78
Broccoli	.08	.72
Eigenvalue	2.37	1.85
Percentage of total variance	29.68	23.15

N= 86

Summing the four respective sub-scores for the meat and vegetable construct yielded two unstandardized variables that could each range from 0 to 400. The results indicated that meat toppings ($M_{\text{meat}}=124.90$, $SD=89.22$) were generally preferred over vegetable toppings ($M_{\text{vegetables}}=59.20$, $SD=75.64$), regardless of gender.

The majority of participants (82%) indicated no meat avoidance, 7 participants (5 women) indicated they only avoid red meat, 8 participants (3 women) indicated that they avoid all types of meat, and one woman self-identified as vegan. Regardless of gender, the difference in intended meat incorporation between meat avoiders and non-meat-avoiders was not significant ($M_{\text{avoiders}}= 97.62$ vs. $M_{\text{non-avoiders}}= 131.13$, $F(1,84)= 1.855$, $p > .05$, NS), whereas the difference in intended vegetable incorporation was significantly different ($M_{\text{avoiders}}= 132.62$ vs. $M_{\text{non-avoiders}}= 42.41$, $F(1,84)=23.41$, $p < .05$).

An initial MANOVA examined meat and vegetable toppings as dependent variables and gender as independent variable; the control variable MAI (Wilk's $\Lambda=.737$, $F(2,82)= 14.60$, $p < .05$) was entered as covariate. Participants' hunger

level, gauged by when they had last eaten, was not significant as covariate and thus not included in the present analysis or any of the following studies. The multivariate result with meat and vegetables entered as dependent variables was significant for gender (Wilk's Lambda= .764, $F(2,82)= 12.69$, $p < .05$). The univariate F tests indicated that there was a significant difference between men and women for both the intended overall meat ($M_{\text{men}}= 153.61$ vs. $M_{\text{women}}= 98.73$; $F(1, 83)= 8.94$, $p < .05$) as well as the overall vegetable ($M_{\text{men}}= 34.73$ vs. $M_{\text{women}}= 81.49$; $F(1, 83)= 10.703$, $p < .05$) incorporation during a single meal occurrence. Men preferred more meat and fewer vegetables than women, thus supporting H1. Figure 1 visually indicates the means for meat and vegetable toppings by gender.

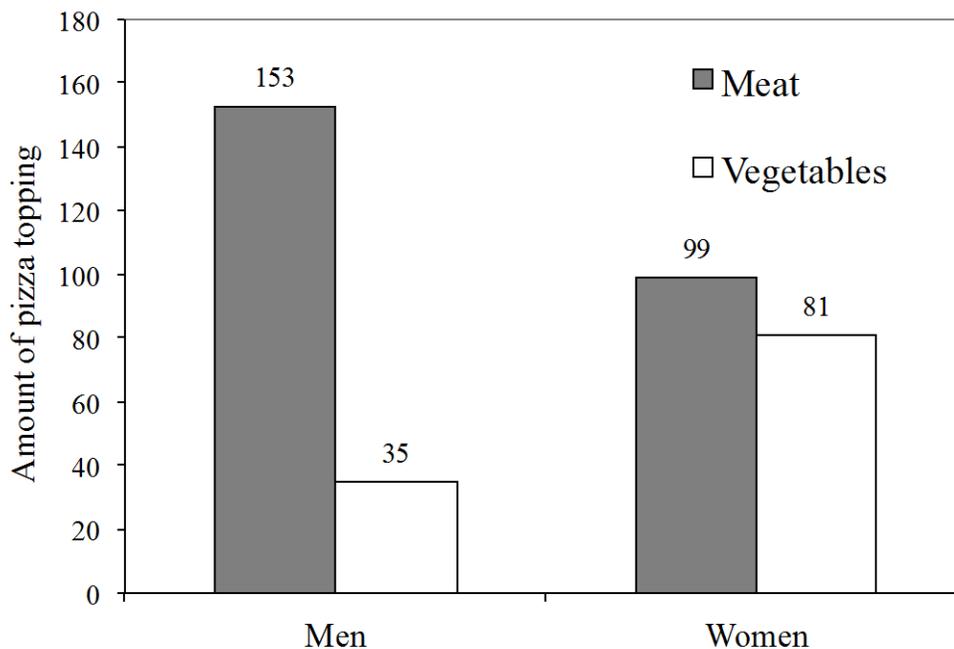


Figure 1 – Study 1: Amount of pizza toppings (unstandardized) by gender.

In order to ensure that participants were not biased by the pizza composition task, an ANOVA was carried out on the evaluation measures of the ordering system. No gender differences were found between the generally positive rating of the overall experience of using the online pizza system ($M=1.39$, $SD=.79$, centered mean), the availability of pizza toppings ($M=.28$, $SD=1.10$, centered mean), and the likelihood of

using it in the future ($M=0.74$, $SD=1.09$, centered mean). In open-ended comments, participants expressed no difficulty using the sliders in order to compose a pizza, but some voiced, justifiably so, discontent with the limited availability of toppings.

Study 1: Discussion

As Figure 1 illustrates, women generally seemed to strive for a balance between meat and vegetable toppings (vegetable/meat ratio, women= .83), whereas men generally eschewed vegetable toppings and loaded up on meat instead (vegetable/meat ratio, men= .23).

Expressed in categorical terms, men in the sample assembled 23 meat-only pizzas, not a single veggie-only pizza, and 18 mixed-topping pizzas. Women in the same sample assembled eight meat-only pizzas, six veggie-only pizzas, 29 mixed-topping pizzas, and two that only contained cheese and tomato sauce. While strict vegetarianism or veganism is often ideologically motivated (Amato et al. 1989; Beardsworth and Keil 1992; Richardson 1994; Ruby 2012) and perceived as a categorical either/or decision based on individual beliefs (Rothgerber 2013), results from this research may inform practitioners' marketing strategies to better serve the growing consumer market for plant-based meat alternatives (Davies and Lightowler 1998; Sadler 2004; Vegetarian Consumer Trends Report 2005).

Limitations. The major limitation of study 1 is that participants only indicated their behavioral intent instead of performing actual behavior. However, this limitation of external validity carries with it the compensating advantage of controlling for visual appeal and other potential gustative and sensory biases related to eating pizza. In addition, the biological differences in overall caloric requirements of participants are self-adjusted due to the relative nature of the scales of the pizza composition task. Controlling for a wider array of possible factors, such as metabolic rate, body-mass-index, and exercise habits would be imperative in a study about nutrition. However, in a study where no actual consumption takes place, those factors would be likely to have little impact on the symbolic property of meat, which is the primary object of this study. Another limitation is the ambiguity of the gender-appropriateness of white meats and seafood as indicated by the pretest results presented in Table 2. Because these types of animal

products are generally considered healthier and leaner, they merit further study, but are beyond the scope of the current investigation.

STUDY 2: DEFENDING THE SELF – MORE MEAT FOR MANLY MEN

As the Desperate Housewives vignette in the beginning illustrates, men may encounter situations in which they feel their manliness questioned or threatened in everyday life, even by relatively trifling incidents (Eisler and Skidmore 1987; Eisler et al. 1988). In particular, men who reject eating meat are often perceived as feminine due to the association between femininity and vegetarianism. Oftentimes this minor deviation from the male role norm can cause social backlash and prolong unhealthy diets, as exemplified by the following quote in Melnick (2011): “‘One day I did try to order a salad’, said Sierra, male, age 40, who works in tech support and was having lunch with his coworkers. ‘And I caught hell for that.’”

Due to the omnipresence of potential threats to masculinity and the linkage between masculinity and meat, study 2 empirically investigates whether men incorporate more meat into their diet as a symbolic defense to restore threatened masculinity.

The underlying psychological defense framework (Cramer 1998) is illustrated in Figure 2 and explained as follows: Identification as psychological defense mechanism is hypothesized to motivate the expected increase in symbolic meat incorporation. Identification refers to increased emulation of gender-appropriate characteristics, qualities, or attitudes, to counteract the aversive state brought about by gender identity-contrary feedback as investigated in Cramer (1998, 2000).

People generally strive to maintain harmony and positivity with regards to how they perceive themselves. Unfavorable information or identity-contrary feedback disturb the coherence of the self-concept and lead to aversive states of heightened anxiety (Burke 1991, 1996). Emotions such as anxiety result from the degree of incongruence between an individual’s own interpretation of identity in a given situation (self-representation) and the external feedback about the external validity of that interpretation (Cramer 1998). Thus, the anxiety construct serves as an indicator for the coherence of the self-system. In essence, being told as a man that one has not been living up to socially codified male standards needs to be addressed by some type of reaffirming manhood act (Schwalbe

2005) in order to remasculate the precarious balance of the male ego and avoid social backlash.

We propose that the reaffirming effect is mediated by anxiety and a subsequent increase in need for status. The latter assumption is grounded in the contention that gender and gender stereotypes are hierarchically ordered and thus function as a statement about status (Connell 1987; Deaux and Lewis 1984; Rudman and Glick 2008; Storms 1979). It follows that threatening a man's masculine identity and associating him with feminine attributes is perceived as a reduction of status. In a food consumption context, meat would be expected to serve as the next best thing to signal masculine identity and status (Newcombe et al. 2012).

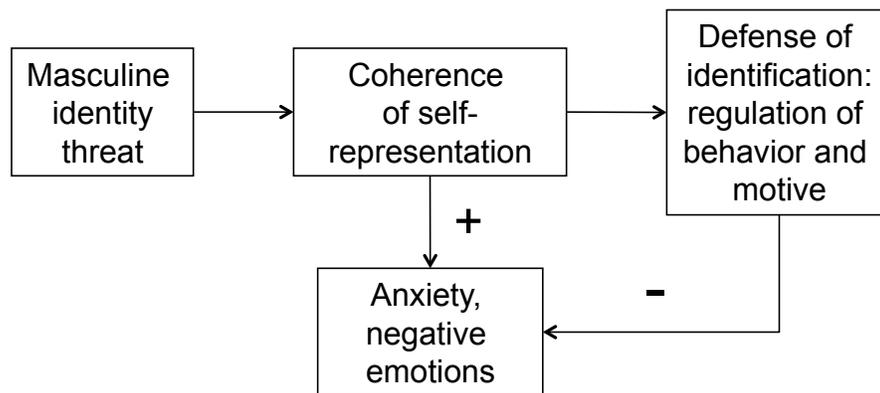


Figure 2 – Study 2: Illustration of the general model of psychological defense following threat to self-representation. Adapted from Cramer (1998).

This mechanism of defending the self is formally expressed in the second hypothesis:

H2A: Men whose masculine identities are threatened (vs. non-threatened) will indicate higher (lower) meat incorporation intent.

Naturally, men are not all the same and thus endorse masculine gender norms to varying degrees. The body of research on men and masculinities posits that men have multiple modes of masculinity at their disposal when “doing gender” (Connell 2005; Sobal 2005; West and Zimmerman 1987). Thus, not all men would unwaveringly insist on preparing hunted game over an open flame for dinner, as the model of singular hegemonic masculinity prescribes (Carrigan et al. 1985; Connell 2005; Connell and Messerschmidt 2005). In line with the theorizing of established sex-typing research (Bem 1981; Cramer 1998; Helmreich et al. 1981; Spence et al. 1973), the following hypothesis is suggested:

H2B: Men’s individual degree of masculine identification will moderate the effect of masculine identity threat on anxiety.

Study 2: Method

Participants. A total of 153 male participants were recruited online through Mechanical Turk to take part in a Qualtrics survey. Five participants’ responses were excluded due to food allergies that would prevent them from eating pizza, leaving a total of 148 male participants with a median age range of 25-34 years that were included in the following analysis.

Procedure. To obtain a measure of the participating men’s individual masculine identification, they filled out the PAQ as a nondescript personality measure along with providing demographic information. As a preparation for the subsequent masculine identity threat vs. non-threat condition assignment, participants were first asked to complete a gender knowledge questionnaire consisting of 20 items relating to prototypical feminine knowledge and 20 items relating to prototypical masculine knowledge (adapted from Rudman and Fairchild (2004) as used in Vandello et al. (2008)). The survey software drew the test items randomly from a larger pool of questions (see Appendix A for a full list of the items on the knowledge test). After answering the last questionnaire item, participants were randomly presented with one of the two possible results screens visually indicating their gender knowledge test performance. One graph indicated that their performance had fallen into the lower 27th

percentile of their male peers' performance, and that they answered more questions relevant to a female identity correctly (masculine identity threat condition); or in the other condition, the graph indicated that their performance had fallen into the upper 73rd percentile of their male peers' performance and that they answered more questions relevant to a male identity correctly (non-threat condition). See Appendix B for screenshots of the score manipulation. The gender and age group information collected in preceding questions was piped onto the results screen in order to make the mock results more relevant to the participant and thus, bolster the effect of the manipulation. In the following, the terms masculinity threat, identity-contrary feedback, or masculine identity threat condition refer to the 27th percentile group; while the term non-threat, condition refers to the 73rd percentile group. As an additional manipulation check, to ensure that participants read and absorbed the mock feedback, they were asked to respond to the following question adapted from Cramer (1998) using a 5-point Likert scale: "Are you surprised by your score? (not at all/very surprised)."

After receiving the manipulated score, and thus having been randomly assigned to either the masculine identity threat or non-threat condition, participants were told that they had now completed the test of gender knowledge and would continue to a more general knowledge test in the form of a word completion task. To measure the hypothesized disruption of masculine self-representation as the increase in cognitive accessibility to notions related to anxiety following the masculine identity threat, a 16-item word-fragment completion task was displayed in randomized order (Anderson et al. 2004; Vandello et al. 2008). An anxiety index variable was derived from the number of completed anxiety-related words and used to determine whether the coherence of men's self-representation was successfully disrupted by the masculine identity threat manipulation. See Appendix C for the full list of word fragments included in the task.

In order to investigate the hypothesized status mediator, participants responded to four statements from Dubois et al. (2012) on 7-point Likert scales : "I have a desire to increase my position in the social hierarchy / I want to raise my relative position to others / Getting to climb the social ladder is a priority for me / I would like to be viewed as being of higher standing than others. (strongly disagree/agree)" Participants were then informed that they had completed the general knowledge test section of the survey and

would start evaluating an online pizza ordering system, similar to study 1. At the end of the survey, participants indicated their level of meat avoidance, and were then debriefed and thanked for their participation.

Study 2: Results

As expected, the male respondents in the masculinity threat condition indicated surprise ($M_{\text{threat}} = .31$ vs. $M_{\text{non-threat}} = -.32$, $F(1,124) = 14.06$, $p < .05$, standardized) with regards to their –unbeknownst to them- mock gender knowledge score. This finding provides an indication that the threatening feedback was sufficiently absorbed and constituted an undesirable outcome at odds with men’s understanding of their masculinity.

Similar to study 1, the meat and vegetable toppings were combined into two distinct constructs after conducting a principal component analysis with varimax rotation of the eight pizza toppings ($KMO = .69$). The four meat and four vegetable toppings loaded on two factors, which together accounted for 57% of variance. Factor loadings are reported in Table 4.

Table 4 – Study 2: Orthogonally rotated component loadings for meat and vegetable toppings. Factor loadings > .20 in bold.

Component	Factor 1	Factor 2
Steak	.18	.69
Bacon	-.18	.76
Pepperoni sausage	-.47	.50
Meatballs	.05	.78
Eggplant	.70	.08
Spinach	.73	-.03
Artichoke hearts	.78	-.14
Broccoli	.79	.06
Eigenvalue	2.67	1.87
Percentage of total variance	33.27	23.42
N= 148		

To make the amounts of meat and vegetable toppings more comparable to the total amount of pizza, an additional variable representing the sum of all available pizza toppings including cheese and tomato sauce was calculated. Scores for pizza toppings

remained unstandardized to allow for comparability across studies, while psychological factors were standardized to allow for easier interpretation. The amounts of all types of pizza toppings were generally higher in the masculine identity threat condition; the descriptive statistics are displayed in Table 5.

Table 5 – Study 2: Pizza topping means (unstandardized) by masculine identity threat condition.

Pizza topping	Masculinity threat	No threat
Meat (SD)	141.84 (97.56)	128.67 (80.49)
Vegetables (SD)	56.28 (70.27)	52.01 (82.62)
All toppings including cheese and tomato sauce (SD)	337.84 (126.56)	317.32 (110.50)
N	75	73

Twenty-eight (19%) of the participants indicated some degree of meat avoidance: 14 men indicated to avoid red meat (coded as 1), 13 indicated to avoid all meat (coded as 2) and one indicated to be vegan (coded as 3). The negative bivariate correlation between the meat avoidance index (MAI) and meat toppings ($r = -.35, p < .01$) as well as the positive correlation between the MAI and vegetable toppings ($r = .41, p < .01$) indicated that men's meat avoidance responses were consistent with their intended pizza consumption.

Two step analysis of the conditional process model. In order to investigate the hypothesized psychological process leading to increased meat incorporation – when men feel that their masculinity is threatened – a conditional serial mediation model that paralleled the experimental design was fitted to the data. Conditional process analysis uses a regression-based path-analytic framework that combines mediation analysis and moderation analysis (Hayes 2013). Furthermore, it presents the advantage of evaluating indirect effects without the prerequisite of a direct effect; a method popularized by Baron and Kenny (1986), which has been reviewed and updated by Zhao et al. (2010) providing guidance for practicing researchers. In addition, Zhao et al. (2010) recommend using bootstrap confidence intervals for statistical inference, as this resampling method presents advantages over the normal theory approach, but which will not be detailed here.

Results indicated a significant conditional indirect effect of masculine identity threat on meat incorporation, transmitted sequentially through heightened anxiety and an increase in need for status, thus supporting H2A. The entire process model is depicted in Figure 5.

The sequential indirect effect of masculinity threat is dependent upon the level of men's basic masculine identification (measured by the masculinity subscale of the PAQ, Cronbach's $\alpha = .82$), in that the threat manipulation has a stronger effect on disrupting a man's self-representation – indicated by relatively higher levels of anxiety – when men identify more strongly with traditional masculine personality traits, thus supporting H2B. The following analysis is split into two parts: a) First, the conditional direct effect of the masculine identity threat manipulation on anxiety is examined (Figure 4), in order to probe under which conditions the anxiety-heightening effect of masculine identity threat holds. b) Secondly, the findings regarding the moderating effect of masculine identification on anxiety are incorporated into the serial process model (Figure 5) that shows how the indirect effect of masculine identity threat on meat incorporation is transmitted sequentially through the proposed anxiety and status mediators.

a) The moderating role of basic masculine gender identification on anxiety. The anxiety index variable was derived from the number of completed, anxiety-related word fragments and exhibited acceptable internal consistency (Cronbach's $\alpha = .72$).

In order to investigate the moderating role of individual masculine gender identification measured by the masculinity subscale of the PAQ ($m_{low} = -2.91$ to $m_{high} = 2.03$, standardized) on the effect of masculine identity threat on anxiety (ranging -2.13 to 2.26 , standardized) the PROCESS module for SPSS (Hayes 2013), configured for model 1 was used to generate bias corrected 95% confidence estimates from 10,000 bootstrapped samples, as well as Johnson-Neyman significance regions for the proposed moderator: degree of masculine identification. For the bootstrapped results presented in this set of studies, the following convention applies: A regression coefficient whose 95% confidence interval does not straddle zero is significant at the .05-level. In cases where a specific p -value is given, it refers to the normal-theory test of that coefficient. The analysis of the moderating role of the level of masculine gender identification on the relationship between masculinity threat (threat coded as 1, non-threat coded as 0) and subsequent anxiety revealed a significant interaction ($B = .40$, $SE = .16$,

95% CI .08 to .72). This finding is in line with existing sex-typing research as more masculine men experienced higher levels of anxiety after experiencing a threat to traditionally masculine identity.

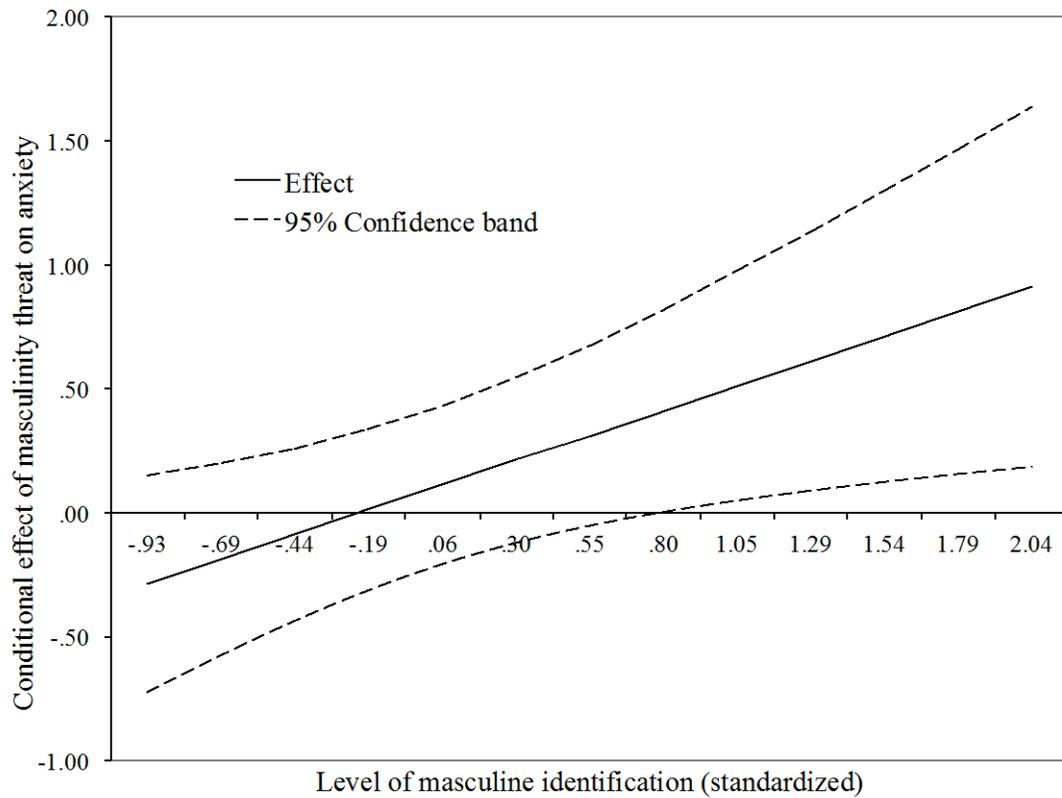


Figure 3 – Study 2: Region of significance for the conditional effect of masculinity threat on anxiety (standardized). Upper significance band ($m = .78$ to 2.03 , standardized) encompassing upper 20% of sample displayed. Lower significance band ($m = -1.97$ to 2.91 , standardized) encompassing lower 5% of sample not displayed.

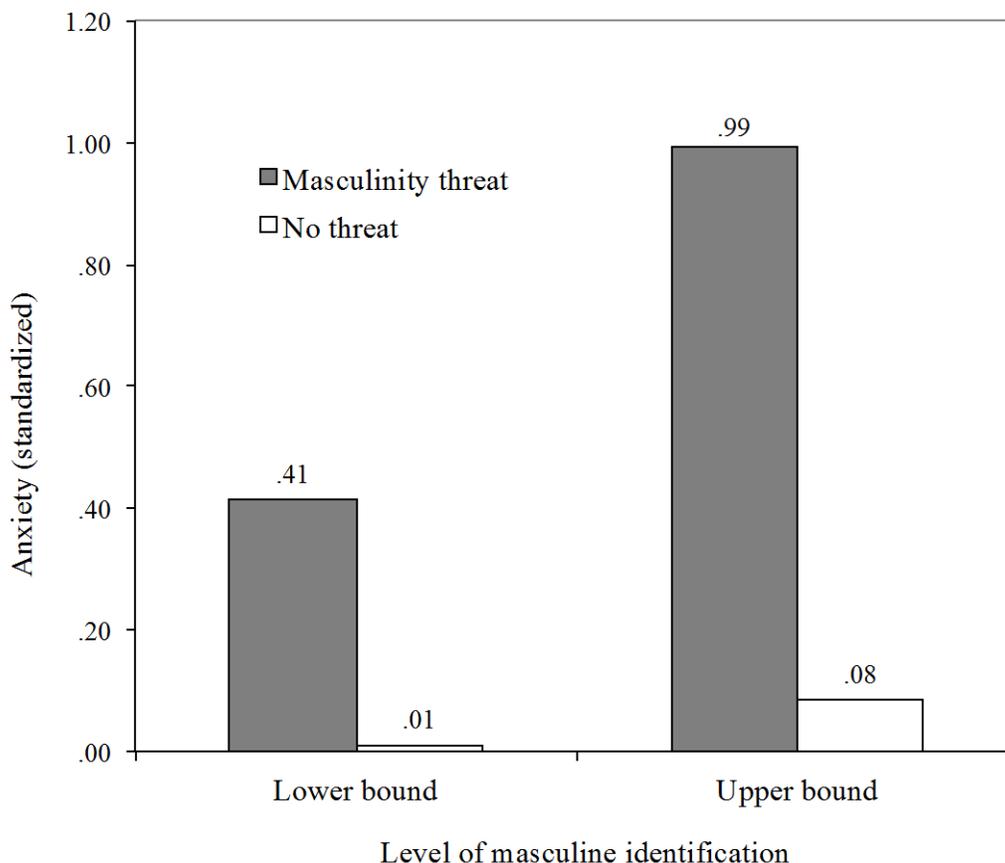


Figure 4 – Study 2: Conditional direct effect of masculine identity threat on anxiety (standardized) evaluated at the boundaries of the upper significance band of masculinity ($m_{lower} = .78$ to $m_{upper} = 2.03$, standardized) measured by the PAQ masculinity subscale.

As indicated by the Johnson-Neyman significance regions in Figure 3, the sample is divided by the critical value for the moderator from which upwards its anxiety-heightening effect (std. $B = .41$, $SE = .21$, 95% CI .00 to .81 at $m_{lower} = .78$ and std. $B = .91$, $SE = .36$, 95% CI .19 to 1.63 at $m_{upper} = 2.03$) can be considered significant. The critical value divides the sample into 79% below and 21% above, indicating that only men with masculinity scores almost one standard deviation above the mean were not only reliably, but also more strongly affected in a negative way by the masculinity threat manipulation. Figure 3 shows the significance regions and the upper and lower confidence bands of the

conditional effect of masculinity threat on anxiety. The values of the conditional effect of masculinity threat on anxiety were probed at the boundaries of the upper critical significance band and are graphically displayed in Figure 4. The results support hypothesis H2B that men who identify more strongly with traditionally masculine instrumental traits experience more subsequent anxiety and thus, their masculine self-representation is disrupted more strongly than that of men who identify less with those attributes. The next part of the analysis shows how the negative aversive state translates into increased meat consumption.

b) The specific indirect effect of masculinity threat on meat incorporation mediated by anxiety and need for status. The four items relating to need for status were collapsed into a single variable and exhibited excellent internal consistency (Cronbach's Alpha = .96). A serial mediation model was estimated using the PROCESS macro script for SPSS (Hayes 2013). The procedures of the script were used to generate 95% percentile confidence estimates from 10,000 bootstrapped samples. Figure 5 depicts the entire conditional process model of the conditional indirect effect of masculine identity threat on meat incorporation. To maintain visual simplicity, the effect of masculinity threat on the first mediator, namely anxiety (a_1 -path) is displayed and estimated only at the upper critical value ($m_{lower} = .78$) and the maximum of the masculinity measure ($m_{upper} = 2.03$), that were established prior, since this interval encompasses the larger part of the sample.

The effect of masculinity threat on intended meat consumption is transmitted serially through an increase in anxiety ($a_1 = .41$ to $.91$, $SE = .21$ to $.36$, 95% CI $.00$ to 1.63 , depending on level of m), resulting in increased need for status ($d_{21} = .19$, $SE = .08$, 95% CI $.04$ to $.36$, standardized), which in turn exerts a positive effect on men's intended meat incorporation ($b_2 = 17.12$, $SE = 7.11$, 95% CI 3.06 to 31.18). The meat avoidance index MAI was included only in the endogenous variable model ($B = -45.19$, $SE = 10.68$, 95% CI -66.31 to -24.08) for it is independent of the psychological factors in the model. The direct effect of masculine identity threat on meat incorporation ($c' = 17.17$, $SE = 13.80$, 95% CI -10.13 to 44.47) is of the hypothesized direction, but not significant. Since the strength of the indirect effect of the threat manipulation depends on the level of men's masculine identification, the c-path ($a_1 \times d_{21} \times b_2$) can thus range from $c = 1.39$

(SE= .65, 95% CI .21 to 2.81) to $c = 3.11$ (SE=.65, 95% CI .48 to 6.32) where the size of the a-path coefficient depends on the level of the moderator of basic masculine gender identification (significant range $m_{lower} = .78$ to $m_{upper} = 2.03$). The proposed serial mediation model accounts for 16% of the variance in the variable of interest – mostly accounted for by the MAI (R -square change=10%).

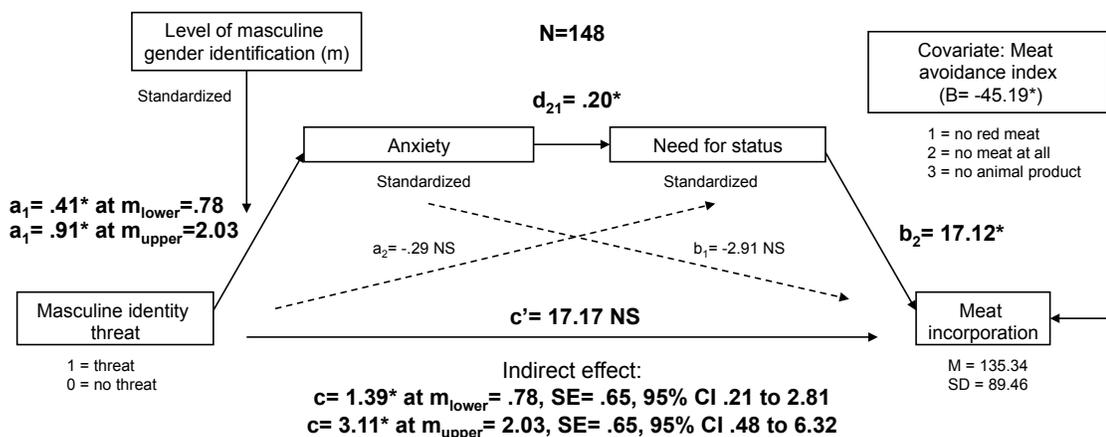


Figure 5 – Study 2: Conditional process model of masculinity threat on meat incorporation via serial mediators anxiety and need for status. Covariate (MAI: meat avoidance index) only included in endogenous variable model. An asterisk (*) indicates significant coefficient when 95% CI does not include zero.

Table 6 – Study 2: Path coefficients with standard errors (SE) and 95% confidence intervals.

Path	B	SE	95% LLCI	95% ULCI	CI includes zero
a_1	.41 to .91	.65	.21	6.32	no
a_2	-.29	.08	-.61	.03	yes
b_1	-2.91	7.03	-16.81	10.99	yes
b_2	17.12	7.11	3.06	31.18	no
d_{21}	.20	.08	.04	.36	no
c'	17.17	13.81	-10.12	44.47	yes
c	1.39 to 3.11	.65	.21	6.32	no

In accordance with Hayes (2013), after establishing the specific mediational effects on meat incorporation, the model was tested with theoretically possible alternate outcome variables to corroborate the initial finding: As Table 5 shows, the difference in meat toppings between masculinity threat conditions was 13.17 units, the difference in

vegetable toppings was 4.27 units, while the difference in total pizza toppings was 20.52 units. In order to rule out the possibility that men conceivably made no distinction between the symbolic properties of meat and vegetables, the proposed process model was maintained, but vegetable toppings instead of meat toppings were entered as the outcome. The results show a relatively lower and non-significant effect of the need for status variable on vegetable toppings, even more so when excluding the MAI covariate $b_{2\text{-vegetables}} = 7.04$ (SE= 6.44, 95% CI -5.69 to 19.78) compared to $b_{2\text{-meat}} = 17.12$ (SE= 7.11, 95% CI 3.06 to 31.18), which also rendered the indirect paths non-significant.

When using the total sum of pizza toppings, including meat, vegetables, cheese and tomato sauce, a greater coefficient of the need for status mediator on all pizza toppings combined was significant $b_{2\text{-totalpizza}} = 28.76$ (SE= 10.00, 95% CI= 9.00 to 48.52). These findings support the notion that men use meat and large serving sizes to signal masculinity.

Study 2: Discussion

Following the male identity threat manipulation, men were in general more likely to increase their intended meat intake. The results indicate that men use the masculinity-symbolizing properties of meat to compensate for the forced reduction in status evoked by the masculinity threat condition. In doing so, the identification with a gender-appropriate behavior (eating meat) defends the self-representation against the masculinity threat. These findings suggest that men prefer meat to a large extent for its masculinity symbolizing properties aside from more corporeal considerations regarding taste and nutrition. In that, the meat becomes a signifier for masculinity that is congruent with a man's traditional gender role, emphasizing strength and power and can thus symbolically repair the coherence of the disturbed self-representation.

Men with more traditionally masculine personalities experience higher levels of anxiety following a masculine identity threat, and perhaps heap more meat on their pizzas as a defensive measure. Men with traditional male gender identities, high in masculine traits, are more at risk to suffer from the negative health effects of increased meat consumption. This finding is also underscored by a routine linear regression including all participants where the meat avoidance index (MAI) was entered as the outcome variable and the masculinity and femininity subscale scores of the Personal Attributes

Questionnaire (PAQ) entered as criteria ($B_{\text{masculinity}} = -.17, p < .05, B_{\text{femininity}} = .13, \text{NS}$, standardized coefficients, $N = 153$). Considering that a higher MAI score indicates a higher level of meat avoidance, this ex-post finding suggests that traditional men with higher levels of instrumental masculine traits and lower levels of expressive feminine traits are more likely to tilt their nutritional balance toward red meat, including its associated health risks. However, as the overall intended pizza intake increased in the threat condition as well, the effect found in study 2 cannot be clearly attributed to meat. Thus, a follow-up study is required to replicate the findings from study 2 as well as to clarify the specific masculinity-restorative effect of meat.

STUDY 3: VEGGIE PIZZA – THE REMASCULATING EFFECT OF MEAT INCORPORATION

The goal of study 3 is to rule out possible alternative explanations, such as that the mere act of eating anything (including vegetables) may reduce the stress of masculine identity threat. According to the findings of study 2, men may use meat to reduce anxiety, to repair the perceived damage to their sense of status resulting from the forced association with femininity that is contrary to their masculine self-representation. Thus, it would appear that the mere opportunity to incorporate meat will help decrease the negative affective state engendered by the masculinity threatening feedback. It would follow that if men were denied the opportunity to restore compromised self-representation using meat as a symbolic manifestation of manliness, the negative emotions, i.e. anxiety, triggered by the identity-contrary feedback would persist. Study 3 formally investigates,

H3: When men are denied the opportunity to restore their threatened male status by incorporating meat, their anxiety will persist.

Study 3: Method

Participants. A total of 178 male participants living in the United States were recruited online via Mechanical Turk to take part in a Qualtrics survey, purportedly to evaluate an online pizza ordering system as in previous studies. Forty responses were

removed because participants guessed parts of the hypothesis, or indicated food allergies or meat-avoidance, which served as additional exclusion criterion for study 3 due to the modified experimental setup. Responses from the remaining 138 participants were included in the analysis.

Procedure. The experimental setup is similar to that of study 2 with the exception that in addition to the manipulated masculine identity threat condition, the availability of pizza ingredient type was also manipulated in study 3. It was thus a 2 (masculinity threat vs. non-threat) x 2 (meat-only vs. veggie-only) between-subjects design. After the gender knowledge test, when moving on to the pizza composition task, two pizza topping conditions were randomly displayed. One had only meat toppings available (allowing masculine identity restoration), while the other condition only had vegetable toppings available (inhibiting masculine identity restoration). Cheese and tomato sauce were included in both conditions. Due to the random assignment to the meat-only vs. veggie-only pizza condition, meat-avoidant participants were excluded. The variable of interest is the anxiety level as indicator of self-representation coherence. Anxiety levels were measured directly after the pizza composition task by means of the word completion task introduced in study 2. Participants were then thanked and debriefed.

Study 3: Results

Men experienced comparable levels of surprise regarding their mock gender knowledge score as in the preceding study ($M_{\text{threat}} = .62$ vs. $M_{\text{non-threat}} = -.50$, $F(1,137) = 64.60$, $p < .05$, standardized), indicating the success of the masculinity threat manipulation.

The hypothesized interaction between masculinity threat and the masculinity restoration condition was tested using an OLS regression model with bias-corrected confidence estimates obtained from 10,000 bootstrapped samples (Hayes 2013; Preacher and Hayes 2008). The PROCESS module (Hayes 2013) was configured for model 1 to test for the moderating effect of masculinity restoration (meat pizza coded as 1, veggie pizza coded as 0) on the relationship between masculinity threat (coded as 1, non-threat coded as 0) and experienced anxiety. The masculinity score measured by the PAQ (range $m_{\text{low}} = -2.51$ to $m_{\text{high}} = 1.94$, standardized) was included as covariate ($B = -.02$, $SE = .01$,

95% CI = -.05 to .01). Analysis revealed a significant interaction between masculinity threat and restoration condition on anxiety ($B = -.78$, $SE = .32$, 95% CI -1.42 to -.14). As Figure 6 indicates, men felt most anxious when only vegetable toppings were available following the masculinity threat manipulation, whilst this effect was reversed when meat toppings were available, thus supporting H3. As expected, anxiety scores in the masculinity threat condition compared to the non-threat condition were generally higher, but planned contrasts revealed that this difference was not significant ($F(1,133) = 1.25$, $p > .05$). However, the anxiety-levels of men who had meat toppings available were significantly lower compared to the anxiety-levels of men who only had vegetable toppings available ($F(1,133) = 4.93$, $p < .05$).

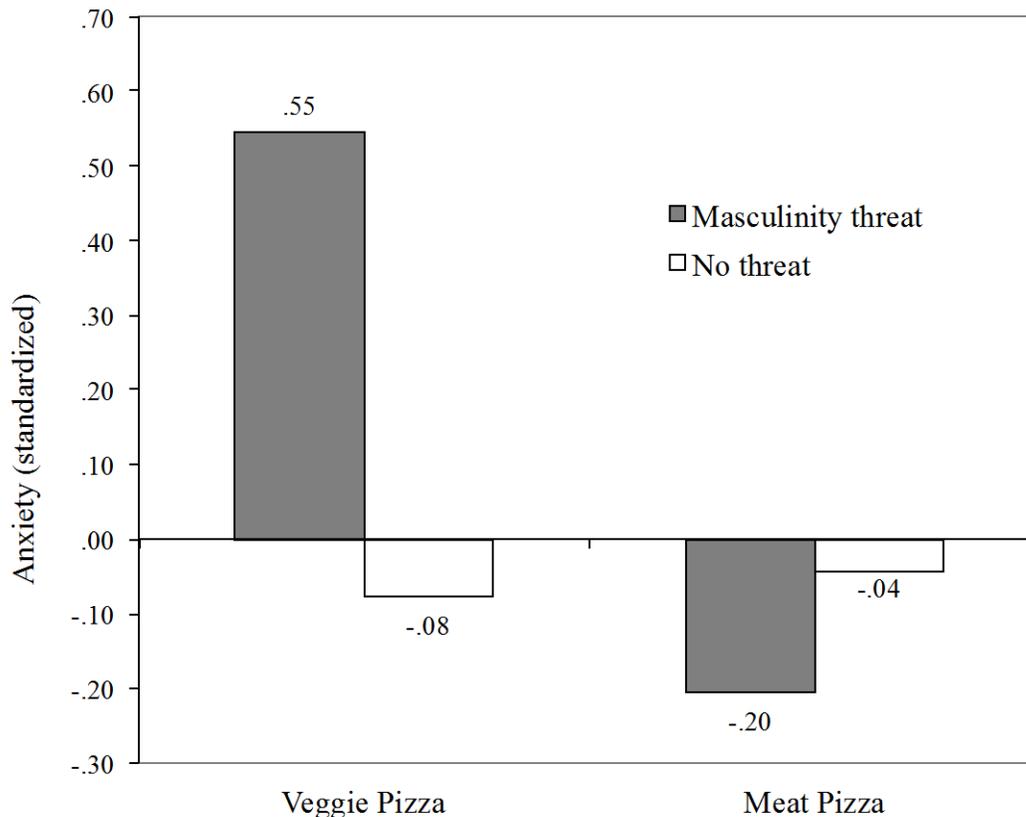


Figure 6 – Study 3: Men’s anxiety levels (standardized) following masculinity threat and subsequent exposure to either the veggie-only pizza or meat-only pizza composition task.

Study 3: Discussion

Study 3 successfully replicated the findings of study 2 and provides support for the hypothesized defensive psychological mechanism of H3, such that when the opportunity to restore the balance of a threatened self-representation by means of identifying with a gender-appropriate behavior is inhibited, the undesirable affective emotional state persists. These findings indicate that the incorporation of meat successfully restored association with masculine identification, which alleviated anxiety and thus allowed men to rebalance their threatened masculine representation. A remasculating effect of vegetables was not observed.

Studies 1 to 3 have illuminated the relationship between masculinity and men's meat consumption practices, indicating that omnipresent threats to masculinity generally increase meat consumption, even more so for men who identify strongly with traditional masculine attributes. However, the focus of this dissertation is not only on demonstrating how masculine identity threats may increase men's meat consumption, but on revealing ways that can actually lead them to make healthier food choices, be it by ways of eating less meat or perhaps consuming more vegetables. Study 4 was designed to investigate possible external interventions that are available to marketing practitioners to foster healthier food consumption. Based on the theory of self-affirmation (Sherman and Cohen 2006), extending men's self-representation of masculinity by virtue of external intervention may have the power to inoculate men against the anxiety-inducing sting of masculinity threat, thus suppressing the defensive response that leads to increased meat consumption.

STUDY 4: MALLEABLE MASCULINITY – MEN'S ATTITUDE TOWARD A VEGETARIAN FOOD OPTION

It appears that in order for men to be able to express liking for a vegetarian food, any doubt with regards to their masculinity needs to be addressed first. A crucial piece to solving this puzzle may be found in preemptively affirming men's sense of masculinity by influencing the interpretation of their self-representations. As introduced earlier, Sherman and Cohen (2006, p. 11) state that reminding people of "who they are" affirms the integrity of the self and "otherwise threatening events or information lose their self-

threatening capacity because the individual can view them within a broader, larger view of the self.” Enhancing men’s interpretation of their own masculinity would hence be expected to affirm their global sense of manliness, rendering any doubt about their masculinity less relevant, eventually enabling healthier food choices.

Based on the theory of self-affirmation (Aronson et al. 1999; Sherman and Cohen 2006; Steele 1988), and on the contention that the (masculine) self is malleable (Aaker 1999; Clément-Guillotin and Fontayne 2011; Ghorpade 2009; McCall and Dasgupta 2007) study 4 explores, whether enhancing men’s self-representations can be applied to counteract the aversive psychological effects of masculine identity threat and thus improve men’s attitudes toward a vegetarian food option. As noted earlier, individual differences exist as to what degree men express traditional masculine personality traits. A man’s individual degree of identification with these traits serves as the interpretive lens for day-to-day experiences. Thus, a man with a non-traditional masculine identity containing fewer masculine traits and perhaps relatively more feminine traits (Chen et al. 2004) may find it easier to reconcile positive attitudes toward a “girly” vegetarian food option with his interpretation of his personal male identity.

The expectation is that enhancing highly masculine men’s prevailing self-representation of hegemonic masculinity -by priming them with an equally culturally valid, but feminized representation of masculinity- positively affects men’s sense of masculine self, beyond their prevailing interpretative lens of masculinity. This affirmed state of self would consequently -at least temporarily- decrease the defensive response observed in previous research (Glick et al. 2007; Willer 2005; Willer et al. 2013), as well as in studies 2 and 3.

Holt and Thompson (2004) have described two prototypical representations of masculinity, namely the breadwinner and the rebel, which were used in the following to prime men’s representations of masculinity. Since the word “stereotype” usually has a negative connotation, the word “prototype” or “masculinity representation” will be used interchangeably in the following, because the breadwinner and the rebel are original models from which men draw in order to fashion their own masculinity, rather than using the terms to categorize themselves or others, as would be suggested by the word “stereotype.”

These prototypes differ in terms of masculine and feminine attributions, but are still both regarded as overall masculine and culturally valid traditional male behaviors. As men become self-affirmed and internally settle doubts about their masculinity, they can direct their attention toward matters beyond ego protection, such as a healthy diet. Thus, men primed with the caring, interdependent breadwinner representation are expected to be more likely to hold less negative attitude towards a vegetarian food option, relative to their peers primed with the hegemonic, independent masculinity (rebel). Furthermore, an interaction between men's individual degree of masculine identification and the primed prototype is expected, since the former serves as the interpretive lens for the latter. Formally the following set of hypotheses is proposed:

H4A: Priming men with the breadwinner masculinity (vs. rebel masculinity) will alleviate (intensify) the anxiety-heightening effect of masculine identity threat, and lead to a more positive (negative) attitude towards a vegetarian food option.

H4B: Men's individual degree of masculine identification will moderate the effect of the masculinity prime on anxiety.

Study 4: Method

Compared to actual consumption, expressing a particular attitude toward a vegetarian food is perhaps less encumbered by pre-existing biases with regards to vegetarian diets. Changing an attitude may thus facilitate the potential for later consumption. Veggie stir-fry was chosen because people generally associate it with healthiness (Ruby and Heine 2011), and it is also recognizably vegetarian. Study 4 employs a self-affirmation priming task (breadwinner vs. rebel) to lower anxiety, with the intended effect to improve men's attitude toward a veggie stir-fry.

Breadwinner vs. rebel masculinity pretest. Two short descriptions describing either a breadwinner or rebel prototype were derived from Holt and Thompson (2004) and can be found in Table 7. A pretest with 95 men ranging from 18-85 years of age,

exposed participants randomly to either description and served the two purposes of a) gaining an understanding of the breadwinner and rebel representations in terms of values, goals, and relationships that constitute domains of self-worth in the self-system (Sherman and Cohen 2006) and b) to establish the representations' ubiquity in the minds of men. To accomplish the first goal, participants indicated the fit on 7-point Likert scales between the character and a set of gendered traits, values, and activities, such as masculinity, friendliness, and physical strength (benchpress) for example. In order to explore the self-representational aspect of interpersonal relationships that a breadwinner or rebel could have, participants filled out Singelis' (1994) self-construal scale as. Participants were asked to assume the point of view of the character they just read about. Our expectation that the rebel would be seen as a man with independent self-construal, characterized by autonomy and uniqueness, whereas the breadwinner would construe himself interdependently, as communal and relational was confirmed (Interdependence subscale: ($M_{\text{breadwinner}} = .67$ vs. $M_{\text{rebel}} = -.73$, $p < .01$, standardized; Independence subscale: $M_{\text{breadwinner}} = -.29$ vs. $M_{\text{rebel}} = .32$, $p < .01$, standardized)

In their evaluation of the relationship between gender and self-construal, Cross and Madson (1997) point out that men in the United States usually construct and maintain an independent self-construal, whereas interdependent self-construal is associated with women, and can thus be considered more feminine.

To establish the general existence and psychological accessibility of the breadwinner and the rebel model in the minds of men, participants responded to open-ended questions regarding suitable employment possibilities and sporting activities (Kidd 2013; Messner et al. 2000; Robinson 2008) for the character they just learned about. Participants were also asked whether the description reminded them of a particular real life or media figure, and what word they would choose if they had to describe a single unique characteristic of the man they just read about in the description. The responses obtained in the pretest were quantitatively and qualitatively evaluated, showing they generally mapped to the characteristics of the prototypical breadwinner and rebel provided in Holt and Thompson (2004). More specifically, the pretest results indicate that the breadwinner is perceived as less masculine compared to the rebel ($M_{\text{breadwinner}} = -.29$ vs. $M_{\text{rebel}} = .32$, $p < .01$, standardized). However, the two models did not differ

significantly in terms of femininity, which indicates that both breadwinner and rebel are both valid representations of masculinity. As expected, the breadwinner was seen as the friendlier, and more sincere character, while the rebel scored higher on self-confidence, fun, and ruggedness. These findings were underscored by the rebel's perceived superior physical strength in bench-pressing ($M_{\text{breadwinner}} = 161$ lbs. vs. $M_{\text{rebel}} = 203$ lbs., $p < .05$) and his preference for individualist/extreme sports, such as mixed martial arts, snowboarding, and surfing. The detailed results and descriptions of both breadwinner and rebel model are provided in Table 7. Overall, the pretest data suggest that the breadwinner and rebel representations of masculinity can be activated via psychological priming since they are both well represented in popular culture, which not only contributes to shaping popular ideas of masculinity, but also acts as a mirror to reproduce the current ideas of masculinity that exist in society. In correspondence with Holt and Thompson's (2004) account, pretest participants perceived the breadwinner as a caring father figure and family man, but concomitantly interpreted him as old-fashioned, often boring and somewhat emasculated. The rebel masculinity, while perceived as youthful, masculine, independent, and potent showed signs of an alleged immaturity and self-centeredness. As described in more detail in Holt and Thompson (2004), men enact a utopian ideal of American masculinity – the Man of Action Hero – by resolving cultural contradictions by drawing from the strengths associated with each prototype.

Due to the empirical evidence for a) the difference in perceived levels of masculinity between breadwinner and rebel, and b) the existence of valid representations of breadwinner and rebel prototypes in mass culture discourse, both prototypes are deemed adequate to prime participants in study 4.

Table 7 – Study 4: Description of breadwinner and rebel masculinity prototypes (Holt and Thompson 2004) used in the priming task.

	Breadwinner	Rebel
Description in Holt and Thompson (2004)	“Pursues organization success by following rules, responsible, respectable, rational, reserved community pillar, safe”	“Pursues autonomy by defying institutional rules, creative, confident, self-directed, potent, youthful, dangerous”
Extended prime read by participants of study 4	“Joe is a hard working man at a corporation in the USA. His co-workers know and appreciate him for his dependability and often come to him when they need advice. Joe follows the rules set by his superiors to advance on the corporate ladder. His peers appreciate and respect him because he is reserved and a dependable community pillar. Social respect and money are important motivators for Joe. When it comes to Joe's family his behavior is guided by self-sacrifice and paternal care.”	“Joe is an adventurous man who is his own boss. He is fiercely independent and refuses to “fit in”. He spends much of his time outdoors relying on his courage, physical skills and cleverness. Joe is a rugged individualist, a fun-loving bad boy who does not care about the establishment.”

Table 8 – Study 4: Breadwinner and rebel masculinity prototype (Holt and Thompson 2004) pretest results. Asterisk (*) indicates $p < .05$, (**) indicates $p < .01$ significance level between trait means.

Trait	Breadwinner Std. score (SD)	Rebel Std. score (SD)
Masculinity	-.29 (.99)	.32 (.92)**
Femininity	.07 (.91)	-.10 (1.01) NS
Friendliness	.42 (.82)	-.49 (.94)**
Sincerity	.36 (.97)	-.41 (.86)**
Self-confidence	-.26 (1.07)	.26 (.82)**
Fun	-.30 (1.06)	.30 (.82)**
Independence	-.40 (1.00)	.41 (.81)**
Ruggedness	-.54 (.99)	.57 (.61)**
Self-construal (Singelis 1994)		
Interdependence subscale	.67 (.57)	-.73 (.84)**
Independent subscale	-.29 (.92)	.32 (.99)**
Physical strength (benchpress)	161 lbs (81 lbs)	203 lbs (80 lbs)*
Type of sport (exemplar)²	67 items listed	66 items listed
Full contact (rugby, hockey)	44%	52%
Limited contact (baseball, basketball)	36%	15%
No contact (golf, tennis)	6%	6%
Individual/extreme (mixed martial arts, snowboarding, surfing)	0%	27%
N	50	45

² A total of 133 items were extracted from the data and classified into four categories (three independent raters, inter-item correlation= .94) following the definition of the Committee on Sports Medicine and Fitness, American Academy of Pediatrics (1994), "Committee on Sports Medicine and Fitness," *PEDIATRICS*, 94 (5), 757-60. Full contact and extreme/individual sports are considered more masculine, Kidd, B. (2013), "Sports and Masculinity," *Sport in Society*, 16 (4), 553-64.

Participants. A total of 168 male participants were recruited online through Mechanical Turk to take part in a Qualtrics survey. Five participants' responses were excluded as they indicated food allergies, leaving a total of 163 male participants with a median age range of 25-34 years that were included in study 4.

Procedure. Elements from the preceding studies were used in the design of study 4 with the following modifications: In addition to the gender knowledge test with the mock test result that functions as the masculine identity threat manipulation, an essay task was included in the study design to prime the masculinity prototype. Participants were randomly assigned to either read the pretested description of a breadwinner or a rebel, who was named "Joe" in both conditions (see Table 7 for character descriptions). Participants were then given the following instructions:

"...think about what a day in your life could look like if you were like Joe. Imagine what you would do in a day and how you would feel about it, what kind of friends would you have and what type of activities would you engage in."

During a timed 5-minute task participants then wrote a short essay using the first person perspective. Given the focus of study 4 on the interventional aspect of the masculinity prime, only responses from participants in the masculinity threat condition were included in the analysis. Study 4 thus employed 2 (masculinity prime: breadwinner vs. rebel) x 2 (individual degree of masculine identification: high vs. low) between-subjects design.

The breadwinner and rebel prototype are relatively distinct in character and can represent different life stages, thus a potential age effect, information effect, or perceived similarity effect could introduce noise to the masculinity prime; we captured these potential confounds by asking subjects to indicate their age and by using 7-point Likert scales with the two statements "Do you agree that you have a good idea of what Joe would be like if you met him in real life?" and "I think I am very similar to Joe (strongly disagree/agree)." The same instruments introduced in study 2 were used to measure anxiety and need for status as potential mediators.

The variable of interest was attitude toward a vegetarian food option and was operationalized using the semantic differential technique (Osgood et al. 1957). To record the dependent variable, participants rated an imagined vegetarian food option on ten 7-point bipolar scales that included the following pretested adjective combinations: good/bad, appealing/repulsive, delicate/bold, exciting/boring, strong/weak, flavorful/flavorless, smells good/smells bad, edible/inedible, tastes good/tastes bad, and healthy/unhealthy. Scores were recorded such that a higher score indicated more positive attitude. In order not to alert participants to the masculinity-food linkage of the study, they were told that the semantic differentials served to evaluate a product that was randomly selected from a larger pool of items. However, the words “VEGGIE STIR FRY” were always displayed on the survey screen accompanied by a stock photograph of a veggie stir-fry. Finally, participants were debriefed and thanked for their participation.

Study 4: Results

For the purpose of focusing the present study on the effects of the masculinity priming condition, only the responses from participants in the masculinity threat condition ($N=103$) were analyzed further. Because the inclusion of the non-threat group did not provide additional insight beyond the preceding studies it served as control group, but is not discussed further. With regards to the prototype priming condition, an evaluation of the recorded essays indicated that instructions were followed and that the essays were written in the first person perspective. Overall, essays had a mean character count of $M=560$ ($SD=278$). No sign for a potential information effect regarding the masculinity prime descriptions was evident since the difference in mean scores for familiarity with the prime, according to the description provided, was not statistically significant ($M_{\text{breadwinner}} = .04$ vs. $M_{\text{rebel}} = -.04$, $F(1,102) = .192$, $p > .05$, standardized). This finding suggests that participants were able to successfully conjure up a mental image of both the breadwinner and rebel to similar degrees. Further analysis regarding how participants view themselves in relation to the masculinity prime, revealed a significant main effect, such that men who identify as more masculine feel more similar to either breadwinner or rebel ($B = .09$, $SE = .40$, 95% CI .2 to .20, standardized). This finding supports the contention that both breadwinner and rebel are perceived as masculine. A marginally significant interaction effect emerged between participant age and prototype,

such that men of higher age felt more similar to the breadwinner compared to the rebel, which supports the findings of the pretest.

Participants' level of masculine identification was measured using the masculinity subscale of the PAQ (Cronbach's $\alpha = .84$). The word completion task items to measure anxiety showed acceptable internal consistency (Cronbach's $\alpha = .72$), as did the need for status construct (Cronbach's $\alpha = .92$). Finally, the ten semantic differentials to measure the variable of interest were subjected to a principal component analysis with varimax rotation. An examination of the Kaiser-Meyer Olkin measure of sampling adequacy suggested that the sample was factorable (KMO = .92). After excluding the two word pairs unhealthy/healthy and delicate/bold, the remaining items loaded onto a single factor, accounting for 68% of variance (factor loadings: good/bad = .87, appealing/repulsive = .88, exciting/boring = .79, strong/weak = .66, flavorful/flavorless = .85, smells good/smells bad = .85, edible/inedible = .80, tastes good/tastes bad = .88). These eight items were collapsed into a single standardized "attitude toward the veggie stir-fry" score, abbreviated as ATVSF in the following. A higher score on ATVSF indicates more positive attitude.

The process model established in study 2 indicated that a greater need for male status led to a defensive increase in meat consumption. It would thus follow that a higher need for male status would exhibit a negative effect on a feminine vegetarian food option. For the sake of parsimony, the status mediator was dropped from the following analysis because it showed no significant relationship with ATVSF. Implicitly however, this finding further supports the linkage between male status and meat, since a corresponding link between male status and vegetables remains elusive.

The differential effect of breadwinner and rebel on high and low masculinity men's attitude toward a vegetarian food when masculinity is threatened. In order to test the proposed hypotheses, the bootstrapping method with bias-corrected confidence estimates and 10,000 bootstrapped samples (Hayes 2013; Preacher and Hayes 2008) was used. The PROCESS module for SPSS was configured for model 7 to evaluate the direct effect and the conditional indirect effect of the manipulated dichotomous factor (breadwinner vs. rebel), moderated by the level of masculine gender identification (range $m_{low} = -3.07$ to $m_{high} = 2.00$, standardized), on the dependent measure: attitude toward the

veggie stir-fry (ATVSF). The current process model is comparable to that of study 2 in that it allows for investigation of the effect of the masculinity prime (breadwinner vs. rebel) on anxiety at various levels of masculine gender identification after men's masculine identity was threatened. Obvious differences are the vegetarian endogenous variable, in this case and the absence of the status mediator.

Qualitative results from the breadwinner/rebel pretest indicated that men generally considered the breadwinner to be of older age than the rebel. Hence, participants' own age and the similarity-to-prime index were included as covariates in the exogenous variable model in order to smooth the potential between-subjects differences in the masculinity prime treatment groups. The conditional process model is depicted in Figure 7 and explained in the following.

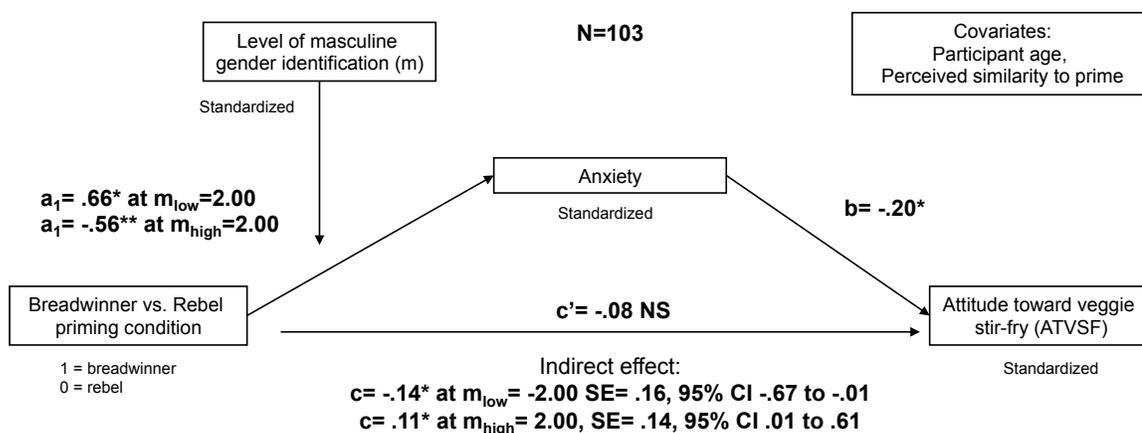


Figure 7 - Study 4: Conditional effects model of masculinity priming condition (breadwinner vs. rebel) on attitude toward the veggie stir fry (ATVSF) via anxiety at two levels of the masculine gender identification moderator. Covariates for exogenous variable model: participant age, perceived similarity to prime. An asterisk (*) indicates significant coefficient when 95% CI does not include zero (** for 90% CI).

Table 9 – Study 4: Path coefficients with standard errors (SE) and 95% confidence intervals.

Path	B	SE	95% LLCI	95% ULCI	CI includes zero
a	-.56 to .66	.45	-1.57/.12	-1.57/-.75	no
b	-.20	.09	-.39	-.01	no
c'	-.08	.19	-.46	.30	yes
c	-.14 to .11	.16/.14	-.67/.01	-.01/.61	no

No direct effect of masculinity prime on attitude toward the veggie stir-fry was observed ($c' = -.08$, $SE = .19$, 95% CI $-.46$ to $.30$). The 95% confidence interval for the index of moderated mediation (Index = $.10$, $SE = .07$, 95% CI $.01$ to $.30$) indicates that the indirect effect of the masculinity prime on attitude toward the veggie stir fry (ATVSF) via anxiety is moderated by men's degree of masculine gender identification. The b-path in the process model ($b = -.20$, $SE = .09$, 95% CI $-.40$ to $-.01$, standardized) indicates that higher levels of anxiety have a negative effect on men's ATVSF, which is in line with the hypothesizing that masculinity can also be demonstrated by avoiding the feminine (McCreary 1994; Willer et al. 2013) - in this particular case, by lessening the veggie stir-fry.

The indirect effect of the breadwinner (coded as 1) vs. rebel (coded as 0) prototype on ATVSF was probed at the high level of the masculine gender identification score ($m_{high} = 2.00$, $B = .11$, $SE = .08$, 95% CI $.01$ to $.61$) and low level ($m_{low} = -2.00$, $B = -.14$, $SE = .16$, 95% CI $-.67$ to $-.01$), indicating that the breadwinner prime alleviated anxiety for high-masculinity men, which enabled a more positive attitude toward the veggie stir-fry. Thus, both hypotheses H4A and H4B are supported. Figure 8 illustrates the differential indirect effect that priming men with the breadwinner masculinity vs. rebel masculinity has on ATVSF via anxiety, depending on their level of masculine gender identification.

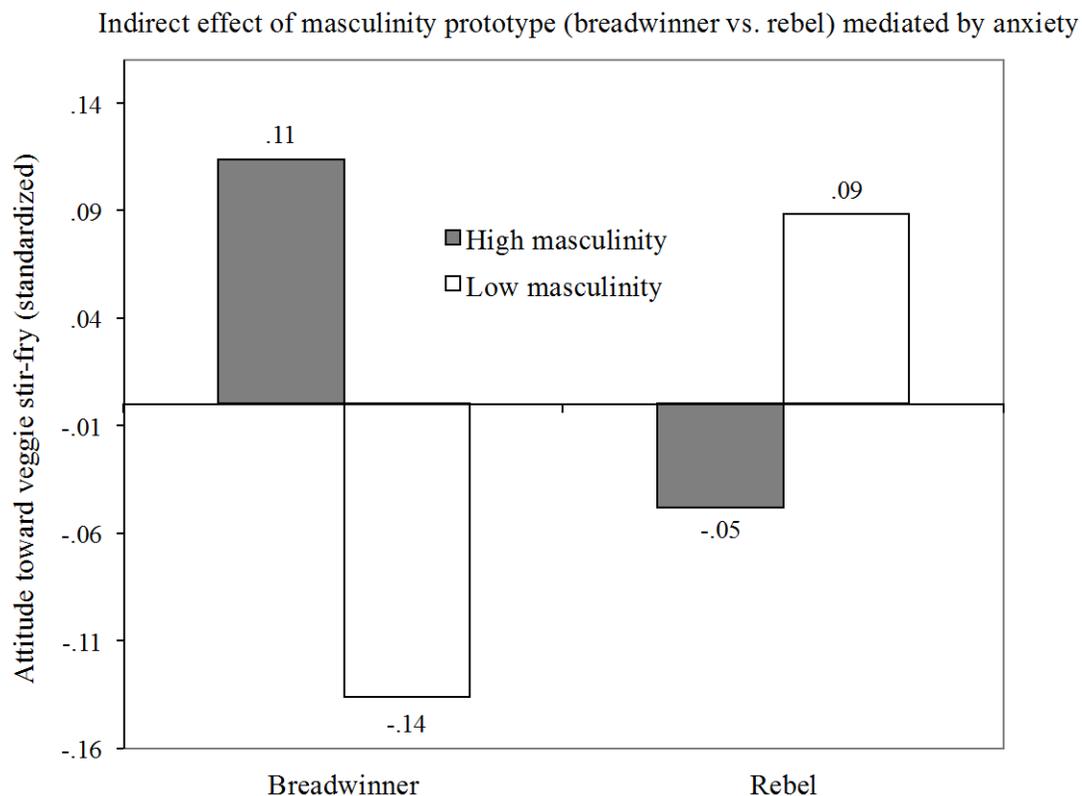


Figure 8 – Study 4: Indirect effect of masculinity prototype (breadwinner vs. rebel) on attitude toward veggie stir-fry (standardized) mediated by anxiety. Low masculinity ($m_{low}=-2.00$, standardized), High masculinity ($m_{high}=2.00$, standardized). Attitude toward the veggie stir-fry scores (ATVSF) based on estimates of anxiety levels.

It is worth mentioning that priming low-masculinity men with the rebel prototype showed a positive indirect effect on ATVSF. This effect is perhaps explained by the fact that men with relatively fewer expressed masculine traits find it easier from the get-go to reconcile the feminine veggie stir-fry with their nevertheless male identity. Enhancing low-masculinity men's inherent perception of masculinity with the complementary rebel representation as a form of masculine self-affirmation – at least temporarily – renders the male ego impervious to doubt; and it can thus tolerate and enable a positive attitude toward an otherwise shunned vegetarian food item.

Study 4: Discussion

Study 4 empirically investigated two prototypical construction blocks of masculine identity, namely the breadwinner and the rebel, both of which men use to enact

a culturally valid form of contemporary heroic Western masculinity: The Man of Action Hero (Holt and Thompson 2004). Results indicated, that the rebel masculinity is regarded as more masculine, aligning with traditionally hegemonic masculine attributes that emphasize competitiveness, physical strength, risk-taking, and courage (Connell and Messerschmidt 2005; Johnson 2005; Willer et al. 2013). The breadwinner, while perceived as less masculine than the rebel, relates to the caring, interdependent, paternalistic aspects of masculinity, which are also associated with femininity. Men draw from the complementary qualities of both the breadwinner and rebel prototype to deny the stigma that is associated with each one. Given the omnipresent threats to precarious masculinity, it follows that men who inherently express an independent, rugged rebel masculinity can psychologically buffer their male ego by being reminded of their perhaps less prominent, complementary domestic and caring traits; and vice versa. Following the rationale of Holt and Thompson (2004), the ideal of the highly lauded form of American masculinity can be achieved only by combining the virtues of both breadwinner and rebel.

The hypothesis that priming men with the breadwinner prototype would affirm the male ego and alleviate the aversive emotional state triggered by masculinity threat was supported. However, the success of the intervention depended on men's basic level of masculine identification, such that highly masculine men's self-representation was better enhanced by the breadwinner prime, whereas the same did not hold true for low-masculinity men and the rebel prime.

As a consequence, the men in the affirmed states showed more positive attitude toward a vegetarian food option, which is associated with femininity (Ruby and Heine 2011).

Besides demonstrating how to make vegetarian food items more appetizing to men, the results of study 4 empirically validate that Holt and Thompson's (2004) three-part framework of the American ideology of heroic masculinity can be empirically extended to other domains of consumption. Furthermore, the results of study 4 provide insight into masculine self-affirmation, and how priming the specific breadwinner or rebel prototype can be used to reduce men's defensive biases toward vegetarian foods, which can positively influence their health in the long run.

GENERAL DISCUSSION

Summary

A set of four studies investigated how men use meat as a symbol for masculinity. Study 1 confirmed existing statistics regarding women's tendency to minimize meat in their intended diets compared to men. A pretested pizza composition task to measure meat and vegetable incorporation intent during a single meal occurrence was introduced. Study 2 explored the psychological mechanism by which a perceived threat to masculinity disrupts a desirable masculine self-representation. A consequent higher level of anxiety lead men to incorporate more meat in order to symbolically restore the coherence of their self-representation and make up for lost status.

In agreement with established sex-typing research, the effects of masculine identity threat were exacerbated in cases where men held strongly traditional masculine gender identities. Additional findings of study 2 suggest that a highly masculine gender identity is negatively correlated with men's individual meat-avoidance preference. Study 3 rules out alternative explanations and corroborates the psychologically remasculating effect of meat on the male ego.

Employing the theory of self-affirmation of the malleable self, the goal of study 4 was to identify a possible intervention that would counteract the aversive psychological state of masculinity threat and thus facilitate a positive attitude toward a vegetarian food option. Two masculinity prototypes, namely the breadwinner and rebel were quantitatively evaluated. The hypothesis that priming men with a more feminized breadwinner prototype would lead to more favorable attitudes toward a feminine veggie stir-fry was supported. However, this was only the case for highly masculine men, who otherwise strongly favored meat.

Overall the results indicate that men with highly masculine identities are more likely to eat meat to defend a threatened ego. A self-affirmation intervention based on the American ideology of heroic masculinity (Holt and Thompson 2004) was tested and results indicated, that the aversive psychological states of threats to masculinity were alleviated when men's prevailing representations of masculinity were enhanced by a complementary facet of culturally validated masculinity. More specifically, high-masculinity men, who base their identity construal on the hegemonic cultural ideal of

masculinity experienced lower anxiety when their identity was enhanced with the breadwinner prototype, while the rebel prime had a similar effect on low-masculinity men.

Theoretical and Practical Implications

In its early stages, consumer research on various topics has typically used men as the standard for its analyses. While this bias enabled advertising to later discover women as a new customer segment, it also shifted the focus away from researching the consumer behavior of men in particular. Numerous qualitative studies investigate the liminal consumption practices of men (Belk and Costa 1998; Schouten and McAlexander 1995), minority cultures (Kates 2002) and the meaning of the male body in advertising and fashion (Ostberg 2010; Patterson and Elliott 2002; Woodruffe-Burton 1998).

While quantitative studies on gender differences (Chang 2006; Eisend 2010; Kong Cheen and Phau 2010; Maldonado et al. 2003; Palan 2001; Puntoni et al. 2010; Wolin 2003) and female consumption behavior abound (Commuri and Gentry 2005; McFerran et al. 2010; Rogers and Chen 2005; Thompson et al. 1990; Venkatesh 1980; Woodruffe-Burton 1997), male consumption behavior—especially in a food consumption context—merits investigation in greater depth (Newcombe et al. 2012). In situations where masculinity is salient, men's attitudes and/or subsequent consumption behavior may be strongly influenced by how a product symbolically enhances their own self-representation or signals socially coveted masculinity to others.

Furthermore, the domains of diet, health, and food consumption are receiving growing attention from marketing scholars (Chandon and Wansink 2007; Chandon and Wansink 2011; Garg et al. 2007; Leeman et al. 2011; Rozin et al. 2009; Rozin et al. 2011; Wansink and Chandon 2006a, b, 2007; Wansink and Sobal 2007) indicating a growing interest in the field. Men's food consumption practices are gaining more attention from scholars recently (Gough 2007; Gough and Conner 2006; Melanson 2008; Newcombe et al. 2012). Extending this line of research, practices that are related to specific food consumption domains such as vegetarianism (Rothgerber 2013; Ruby 2012; Ruby and Heine 2011) merit further investigation from a consumer research perspective.

The present studies contribute to the consumer research literature by extending and further validating the findings of Rozin et al. (2012) concerning the linkage between meat and maleness.

Showing that men incorporate meat not only for the primary purpose of nutrition, but also in order to express and defend their masculinity, this dissertation contributes to the literature on the self, particularly on the social construction of men's masculinities.

The present studies further investigate and corroborate the effect of a common gender identity threat manipulation used in social psychology that interacts with the individual level of masculine gender identification of male participants.

Contributing to the literature on men's studies and masculinities, this dissertation empirically investigates various dimensions of the masculinity models of the breadwinner and rebel identified by Holt and Thompson (2004): While both models represent socially accepted models of masculinity, the breadwinner is associated with more feminine characteristics. Data collected for this dissertation links the breadwinner with interdependent self-construal, which is deemed to be psychologically more accessible to women and links the rebel with independent self-construal, which is deemed to be more accessible to men. The aforementioned findings provide insight into possible self-affirmation strategies that can positively affect men's resilience toward the negative affects of perceived threats to masculinity.

For the sake of managing the psychological balance of the male ego, men are more likely to steer clear of healthier food options since vegetarianism is considered feminine, and thus to be avoided by "real men." Red mammal meat is masculinity embodied; hence it is the preferred choice. To make things worse, generally unhealthy foods and extra-large serving sizes are associated with masculinity, posing dietary risks for men leading to fatal diseases such as various forms of heart disease and cancer.

Due to the metaphorical linkage between meat and maleness, initial efforts to illuminate the underlying psychological mechanisms primarily focused on men. Obviously, women are not immune to the detrimental health effects of elevated meat consumption. Extending the findings of the present studies for women would need to take into account that femininity is due to biological reasons, whereas masculinity is due to social reasons (Vandello et al. 2008).

Marketing managers can use the implications of this research to inform growing segments of meatless soy alternatives which constitute a \$636 Million market (Hsu 2012; Vegetarian Consumer Trends Report 2005). Furthermore, the information provided can be used to inform the creation of new market segments in addition to enabling men to choose healthier foods by influencing representations of masculinity.

For example, The New Zealand based company Mammoth Supply Co. with their slogan “Real Man Food, Man” is targeting exclusively men with their manly XXL container sizes of traditionally feminine hedonic foods such as yoghurt, ice cream, ice coffee and dips. Men certainly enjoy dulce de leche ice cream every now and then, but unless the marketing campaign and packaging says unmistakably “manfood” loud and clear it might jeopardize their masculinity and thus overt consumption poses a risk that they would rather avoid.

A study about tofu and steak (Wansink 2006) showed that men generally disliked tofu. A solution to make the tofu patties more palatable to men was to fashion the tofu patties to look like cuts of meat with added grill marks. Thus, one way to make a product more attractive to men is to embellish it with traditional signifiers of masculinity, such as bold design, and hefty serving sizes that are engineered to “tame” a man’s primordial hunger.

Based on the accounts of Holt and Thompson (2004) men show considerable agency in construing their masculinities by weaving activities that are traditionally coded feminine into their narratives as a form of rebellion against hegemonic masculinity. Thus, marketing managers may have the opportunity to position vegetarian food products, brands, or consumption sites as masculine rebellion. Vegetarianism can also be understood as norm violation or a form of positive deviance from the socially accepted practice of meat eating (Boyle 2007). Based on the present findings, low-masculinity men may react more positively to vegetarian food options or venues that portray alternatives to meat as a form of masculine rebellion, thus enhancing masculinity. High-masculinity men on the other hand would be expected to react more positively when the interdependent aspects of vegetarianism (Kaza 2005; Mahanarongchai and Marranca 2007) are emphasized thus enhancing their masculinity with the caring and rational aspects of the breadwinner.

Limitations and Future Research. Clearly, red meat is a strongly identity-linked product for men in Western cultures, and thus the preferred choice. However, cultural research on consumer self-construal (White et al. 2012) showed that threatening a relevant identity resulted in the avoidance of an identity-linked product for consumers with independent self-construal, whereas consumers with interdependent self-construal demonstrated more positive preference for an identity-linked product. The authors (White et al. 2012) attribute this effect to the interdependently construed consumers' capacity to engage a repertoire of multiple identities to fulfill their need for belongingness. Due to the culturally narrow focus of this dissertation and the pervasive linkage between meat and maleness in Western cultures, the men in the present studies did not seek to dissociate from the identity-linked product meat, although the relevant social identity (male) was threatened. Yet, prior findings (White et al. 2012) support the results of study 4 in that they indicate that positive attitude toward an otherwise threatening target (the veggie stir-fry is a symbolic threat to masculinity) was produced by buffering the negative emotions of an identity threat by engaging multiple socially valid masculine identities. In the case of study 4, this effect was perhaps achieved by priming men with the breadwinner masculinity due to its association with interdependent self-construal.

Viewing the results of study 4 through the theoretical lens of social comparison (Festinger 1954; Sedikides and Gregg 2008), it appears that priming men with a complementary masculinity model (e.g. high-masculinity men primed with the breadwinner) lead to positive affect, conceivably due to positive self-enhancement. Although potentially interfering effects of social comparison were controlled in study 4 by including a self-similarity measure as covariate, the mechanism underlying these results requires in-depth follow up study.

In this vein, representations of masculinity in the media impact how men view themselves and their bodies (Hobza et al. 2007). Since the rebel prototype was perceived as stronger and more physically active, a dislike for vegetarian foods that – as many believe – do not provide sufficient protein to maintain a masculine and muscular body (Stibbe 2004) is conceivably influenced by body esteem and/or self-esteem in a social comparison context (Richins 1991).

Across the world, food carries multitudes of meanings, which can vary greatly depending on history, cultural context and situational factors. Thus, extending this line of research to other cultural domains requires careful consideration of the factors that shaped food-related metaphors, practices, and customs (Cervellon and Dubé 2005; Counihan and Van Esterik 2012; Pachirat 2011), as well as gender differences as well as the gendering of food (Costa Jr et al. 2001; Counihan 1999) across cultures and historical periods.

Most gendering of food is chiefly culturally constructed rather than based on biology (Zellner et al. 1999), but other accounts (Willer et al. 2013) show that men with relatively higher testosterone levels react more strongly to threats to their masculinity. Consequently this biological factor could plausibly act as a moderator of meat consumption.

Men also use oversized meals as an impression management technique to signal masculinity, demonstrated in Vartanian et al. (2007). The negative health effects of excessive red meat consumption are interwoven with the obvious negative health effects of obesity (Adams et al. 2006; Calle et al. 2003) and can possibly be prevented concurrently by eliminating threats to masculinity.

CONCLUSION

“Make love, not war” was the message of Unilever’s Axe commercial during the 2014 Super Bowl, and presented a departure from the unerringly sexist, and macho advertisements for the line of men’s grooming products in the past. The commercial showed military dictators and soldiers in a variety of tense vignettes that seemed to be building up to acts of aggression and the celebration of male military power.

However, to the viewer’s great relief, soldiers dropped their weapons to reunite with lovers, nuclear bombs turned out to be colorful fireworks, and a military parade turned into an unexpectedly romantic proposal. In essence the commercial reprogrammed culturally validated markers of masculinity, such as war and aggression, and presented an alternative form of masculinity that distances itself from the traditional markers of masculinity and focuses on the benefits of more pleasant alternate versions.

The most important insight being communicated in this dissertation, similar to the above commercial, is that masculinity does not only reside within each man's individual psychology, but rather that it is malleable and bestowed upon him by society, which is the most powerful influence in shaping masculinity; and not only rests upon the shoulders of men. Currently, it seems that the members of the male sex are largely at the mercy of society's idea of how they "ought" to eat. The present dissertation provides four studies to demonstrate the phenomenon, identify the problem, and test a solution.

APPENDIX A: GENDER KNOWLEDGE TEST ITEMS

Table 10 – Gender knowledge test items.

Adapted from Rudman and Fairchild (2004). Where photos were displayed in the actual survey, brand tags or plaques, that could have facilitated the answer, were cropped or obscured with image editing software.

Female Knowledge Test Items

Articles about parenting are more likely to be found in which magazine? (Cosmopolitan / Red Book)

According to *The Fabulous Girl's Guide*, if you've spent the night with a bad lover, in the morning you should (politely ask him to leave / feed him breakfast)

During pregnancy, morning sickness usually occurs in which trimester? (second / first)

Who has written the most romance novels? (Betty Hale Hyatt / Dame Barbara Cartland)

Children typically start to teethe when they are (over 1 year old / under 1 year old)

The designer of the gown shown here is (Vera Wang / Oscar De La Renta)

According to *The Rules*, if you are in a long distance relationship, how many times should a man visit you before you visit him? (3 times / 1 time)

Compared to men, women need more (zinc / iron)

A roux is best described as a (sauce / cake)

Botox temporarily erases wrinkles by (skin hydration / muscle paralysis)

How many cups of water does it take to cook 1 cup of rice? (2 cups / 3 cups)

Which of these contains a natural mood enhancer? (chocolate / caviar)

Leftovers can be safely kept at room temperature for up to (4 hours / 2 hours)

Toilet training should start around the age of (36 months / 12 months)

You wear Manolo Blahniks on your (head / feet)

Children should not be given which medication? (Ibuprofen / Aspirin)

If you don't have baking powder you substitute baking soda plus (salt / cream of tartar)

If a party invitation reads "festive casual," you should wear (slacks and a blouse / cocktail dress)

How far in advance should you send out your wedding invitations? (4 weeks / 6 weeks)

The TV show "Sex in the City" popularized which drink? (Cosmopolitan / Manhattan)

Exercises that improve a woman's sex life are called (Kegel's / Pilates)

This photo depicts the [former] CEO of Hewlett-Packard. Who is she? (Carly Fiorina / Debra L. Dunn)

What is the woman in the photo most likely using for a facial? (yogurt / egg whites)

The designer of the gown shown here is (Karl Lagerfeld / Valentino)

What was the first website devoted to women? (Glamnet.com / Ivillage.com)

The designer of the handbags shown here is (Ralph Lauren / Kate Spade)

What is the most common request from male sexual partners? (share your sexual fantasies / put on sexy lingerie)

As the best friend of the bride-to-be, you are most obligated to (be the bridesmaid / host the shower)

The company first to develop hair coloring was (Clairol / L'Oreal)

Male Knowledge Test Items

When punching someone, you should aim your fist (a foot beyond optimal target / directly at target)

Arnold Schwarzenegger killed more people in which film? (True Lies (1994) / Total Recall (1990))

Identify the machine gun in the picture (M240G / M16A2)

In nature, the best analogy for a spark plug is (solar fire / lightning)

The paste used for soldering joints is called (gel / flux)

Identify the car shown in the picture. (Mazda / Porsche)

When ramming a car to disable it, you should aim for (rear passenger's tire / front driver's tire)

When punching someone, the majority of the force comes from the speed of (your fist / your upper arm and shoulder)

To help an engine produce more power you should (inject the fuel / reduce the displacement)

A motorcycle engine turning at 8000 rpms generates an exhaust sound at (4000 rpsm / 8000 rpms)

Identify the motorcycle shown in the picture. (Suzuki / Honda)

Anfernee Hardaway's nickname is? (Penny / Doc)

Hugh Hefner first published Playboy magazine in (1963 / 1953)

By Olympic rules, boxing gloves for all weight classes weigh (12 ounces / 10 ounces)

What's the best way to deflect a punch? (use the forearm to block it / use the hand to catch it)

When hunting, the legal amount of Hunter's Orange on your clothes is (25% / 50%)

The groove inside the barrel of a revolver is (spiraled / smooth)

After shooting a deer, bear, elk, you must attach a (kill tag / ID tag)

A dime is what kind of play in football? (defensive / offensive)

Identify the car shown in the picture. (Ferrari / Lamborghini)

In 1982, who won the Super Bowl's MVP award? (Joe Namath / Joe Montana)

The first people to use primitive flamethrowers in battle were (Greeks / Turks)

The material used between bathroom tiles is called (spackling / grout)

Soldiers in WWII often used what type of guns? (Gatling / Tommy)

Karate originated in martial arts developed in (Japan / China)

If you need to replace the tank ball in a toilet, ask for a (flapper / ball cock)

When choosing insulation, the R-value should be (high / low)

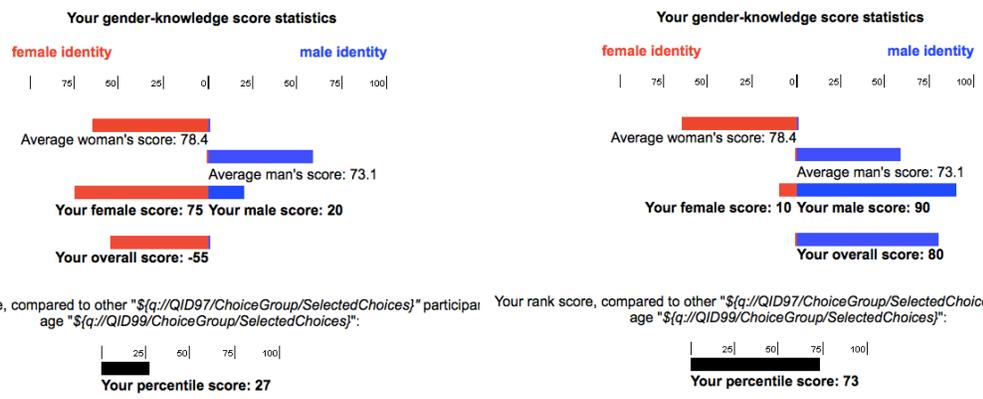
What team did Bob Gibson pitch for as a Cy Young winner in 1970? (Cardinals / Yankees)

What is the compressed force behind BB guns? (gas / air)

The name of the Carolina NHL team is? (Thrashers / Hurricanes)

APPENDIX B: MASCULINE IDENTITY THREAT MANIPULATION

Thank you for completing the gender-knowledge test. Please find below your test results and how it compares to others who have taken the test.



27th percentile, high female / low masculine score (masculine identity threat condition) | 73rd percentile, low female / high masculine score (non-threat condition)

Figure 9 – Study 2: Masculine identity threat manipulation instrument. Screenshots of false gender knowledge score.

APPENDIX C: ANXIETY RELATED WORD COMPLETION TASK

Table 11 – Anxiety related word completion task word list.

7 Anxiety related words	Filler words
THREA_ (threat)	CO_E
STRE__ (stress)	_INK
__SET (upset)	CIV__
_OTHER (bother)	BRI__
SHA_E (shame)	ROU_E
_EAK (weak)	PO_E
LO_ER (loser)	DEV__E
	LOGI_
	T_SK
	RO_E
	POLI__
	S__RCE
	_OLD

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