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Meat and masculinity among young Chinese, Turkish and Dutch
adults in the Netherlands

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Abstract

The achievement of sustainability and health objectives in Western countries requires a transition to a less meat-based diet. This article investigates whether the alleged link between meat consumption and particular framings of masculinity, which emphasize that ‘real men’ eat meat, may stand in the way of achieving these objectives. From a theoretical perspective, it was assumed that the meat-masculinity link is not invariant but dependent on the cultural context, including ethnicity. In order to examine the link in different contexts, we analyzed whether meat-related gender differences varied across ethnic groups, using samples of young second generation Chinese Dutch, Turkish Dutch and native Dutch adults (aged 18-35) in the Netherlands. The Turkish group was the most traditional; it showed the largest gender differences and the strongest meat-masculinity link. In contrast, the native group showed the smallest gender differences and the weakest meat-masculinity link. The findings suggest that the combination of traditional framings of masculinity and the Western type of food environment where meat is abundant and cheap is bound to seriously hamper a transition to a less meat-based diet. In contrast, less traditional framings of masculinity seem to contribute to more healthy food preferences with respect to meat. It was concluded that cultural factors related to gender and ethnic diversity can play harmful and beneficial roles for achieving sustainability and health objectives.

Keywords

Meat; masculinity; ethnic groups; sustainability; health

Highlights

This paper addresses barriers for achieving sustainability and health objectives

It focuses on the meat-masculinity link and shows differences between ethnic groups

The Turkish-Dutch are more traditional than the Chinese-Dutch and the native Dutch

The strongest meat-masculinity link was found among the Turkish men

The weakest meat-masculinity link was found among the native Dutch

Introduction

Achieving the objectives of sustainability, food security and public health in Western countries requires a transition to a less meat-based diet, as has been put forward by many scientists (see Aiking, 2014; Friel et al., 2009; Westhoek et al., 2014). One of the potential barriers to this transition is the alleged link between meat consumption and particular framings of masculinity, which emphasize that ‘real men’ eat meat (e.g., Fiddes, 1991; Meier & Christen, 2012; Roos, Prättälä, & Koski, 2001; Rothgerber, 2013; Rozin, Hormes, Faith, & Wansink, 2012; Ruby & Heine, 2011; Sobal, 2005). This link is indicative of the close association between food consumption and gender frames (i.e. cultural understandings of differences between women and men). As gender frames are salient and relevant in relation to all aspects of food-getting (O’Doherty Jensen & Holm, 1999), they may significantly direct the consumption of gendered foods in a gender-congruent direction (Ridgeway, 2009). Theoretically, therefore, the link between meat and masculinity will not be invariant but dependent on the cultural context. Although there is little research on this context dependency, there are indications of recent changes in framings of masculinity in combination with more healthy food preferences with respect to meat and vegetables (Sellaeg & Chapman, 2008). In Western countries, however, gender frames are also changing due to the increasing inflow of new ethnic groups (Van de Vijver, 2007). Immigrants are a growing part of their populations, in particular in urban centers, and ethnicity is one of the main factors that play a role in food choices (Gilbert & Khokhar, 2008). The various combinations of gender, ethnic background, and types of acculturation raise important new concerns and questions on the role of gender differences in a potential transition to a less meat-based diet. To

explore the nature of the meat-masculinity link in these contexts, the present paper examines whether meat-related gender differences vary across ethnic groups, using samples of young second generation Chinese Dutch, Turkish Dutch and native Dutch adults (aged 18-35) in the Netherlands.

Up to now, ethnic diversity has been given little attention in discussions regarding the promotion of more sustainable and healthy food consumption, except for the topic of obesity, which is also related to gender differences (De Wilde, Verkerk, & Middelkoop, 2014). Our choice of Chinese Dutch (hereafter called Chinese) and Turkish Dutch (hereafter called Turkish) migrants was based on pragmatic and theoretical considerations. As to the first one, Turkish migrants are currently the largest minority group in the Netherlands and Chinese migrants are expected to become the largest one in the coming decades (Garssen & Van Duin, 2009). The theoretical justification is that the Eastern cultural background of these migrants is significantly different from the majority culture in the Netherlands in ways that may improve our understanding of the context dependency of the meat-masculinity link and its potential implications for sustainability and health objectives. Differences between Far East, Middle East and West involve general value differences (Schwartz, 1999; Schwartz, 2006) as well as differences in food culture (Nam, Jo, & Lee, 2010). Among the migrants these differences have been affected, to a certain extent, by acculturation experiences as a result of living in the Netherlands (Gilbert & Khokhar, 2008), which may work out differently for the sexes as girls are more likely to be bicultural than boys (Berry, Phinney, Sam, & Vedder, 2006).

These theoretical issues will be addressed briefly below, as far as they are relevant for the links between meat and masculinity.

The masculinity of meat is thought to be an echo of the time of the hunter-gatherers and the participation of men in hunting large game and subsequent meat-sharing activities, which has gained them a reputation of being tough and daring (Rozin et al., 2012). This scene from the past nicely illustrates that the links between gender and meat can be considered at different levels of society. This lines up with recent insights (Ridgeway, 2009) showing that gender frames are multilevel structures, which involve mutually reinforcing processes at the level of societal institutions (e.g. men's jobs in the meat industry), social interactions (e.g. the man's role as meat carver at the dinner table) and individual identities (the way a man likes his meat). Due to various causes, including the growing share of industrialized meat production in Western countries, however, the status of these practices may have changed (see de Boer, Hoek, & Elzerman, 2006). The actual practice of slaughtering has been hidden more and more behind the scenes of social life and the serving of large parts of the animal to be carved at the table has largely gone out of use. Furthermore, although masculine identities are linked with particular body practices (Connell & Messerschmidt, 2005), these practices are changing too, with a tendency towards masculine performances (e.g. martial arts), that are fast and controlled and not slowed down by fat (Spencer, 2014). As a result, the traditional links between meat and masculinity may have become weaker, except on special occasions, such as 'outdoor cooking' events (Dummitt, 1998).

One of the drivers of this development may be that people in the West have come to develop values that strongly emphasize human equality (Siedentop, 2014), including gender equality and a more shared commitment to domestic participation (Aarseth, 2009). This process contrasts with the experiences of migrants from Eastern countries, where, in terms of Schwartz' cultural value orientations, hierarchical relationships and conservative values are more important (Schwartz, 1999; Schwartz, 2006). A recent study among migrants and natives in the Netherlands shows that Turkish men and women hold more traditional gender-role beliefs and report less sharing of household tasks than non-Eastern migrants and natives (Van de Vijver, 2007). A comparable study of Chinese migrants is lacking, but a study of Chinese migrants in the USA suggests a different pattern of cultural adaptation in which Asian masculinity has changed over time to include the view that masculinity can contain elements of both masculinity and femininity (Chua & Fujino, 1999). Although this pattern was found in a highly educated sample, it agrees with other observations that East Asians are able to adapt flexibly to multiple demands as they tend to tolerate contradiction, to accept and anticipate change, and to prefer a 'middle way' (e.g. the concept of 'Zhong Yong'; see Spencer-Rodgers, Williams, & Peng, 2012). Regarding the differences in gender frames, therefore, it may be expected that the Turkish are the most traditional, followed by the Chinese and the native Dutch.

These cultural differences interact with the abundance of industrially produced meat, which is a typical Western phenomenon (Grigg, 1999; Swatland, 2010). In the Far East, meats were traditionally used as flavorings or condiments (Nam et al., 2010). Due to their

fast economic growth, however, the level of meat production and consumption in Eastern countries has grown rapidly, which is leading to what has been characterized as an unhealthy Western type of diet, often based on traditional recipes with major additions and changes (Popkin & Du, 2003; Zhai et al., 2014). After immigration to another country, the majority of ethnic groups appear to modify their eating habits by combining parts of their traditional diet with some of the less healthy elements of the Western diet (Gilbert & Khokhar, 2008). As meat is abundantly available, it is accessible to a broad category of consumers, including ethnic groups who were used to a low-meat diet. In the course of this process, various differences between the sexes may also change, as shown by differences between women and men in the prevalence of obesity. In non-Western countries, the prevalence of obesity is often greater in women than in men (Garawi, Devries, Thorogood, & Uauy, 2014), but this pattern seems to have reversed in recent years, resulting in a higher prevalence in boys and men (De Wilde et al., 2014; Neslisah & Emine, 2011; Song, Wang, Ma, & Wang, 2013; Yang, 2007). This reversal cannot be explained in a simple way, but the meat-masculinity link might play a role in this process, as meat consumption or factors directly related to meat consumption are positively associated with weight gain (Gilsing et al., 2012; Tucker, Tucker, Bailey, & LeCheminant, 2014).

Although much has been written on the masculinity of meat, Fekete and colleagues (2012) note that there is surprisingly little literature that looks at gender differences in meat consumption systematically (i.e. instead of using gender as control or moderating variable), taking due account of the importance of age and living situation (e.g. marital

status). The general pattern is that men eat more meat than women. According to a nation-wide German survey, in fact, about 50% more meat and meat products (MRI, 2008, p. 44) and, according to a Dutch survey, about 33% more animal protein (van Rossum, Fransen, Verkaik-Kloosterman, Buurma-Rethans, & Ocké, 2011, p. 54). A French study among healthy men and women, aged 20-30 and 65-75 years, found that men consumed more protein, including meat products, than women and that this difference was larger among the younger generation than among the elder one (Rousset, Patureau Mirand, Brandolini, Martin, & Boirie, 2005). A German study with middle-aged and older subjects also found that gender differences were more pronounced in those aged 45-59 compared to those aged 60-75, probably as a result of the influence of women on older men's nutrition (Fekete et al., 2012). As Sobal (2005) notes, spouses tend to correspond in the types of food they consume and this means that the gender difference in meat eating frequency may be small as compared to the gender difference in portion size, with men preferring the larger meat portions (Schösler, de Boer, & Boersema, 2012).

These studies confirm that gender differences are not invariant but they do not provide much information on the meat-masculinity link. This is understandable because gender frames are multilevel structures (at the levels of societal institutions, social interactions and individual identities) that cannot be measured directly. For that very reason it is important to compare gender differences in different contexts. The present study makes this comparison by examining statistical interactions between the effects of ethnic group and gender on a number of meat-related variables that have proven their strategic relevance in earlier work on sustainability and health. The variables are preferred meat

portion size, number of meat eating days per week, familiarity with, and use of, meat replacers (Schösler et al., 2012), familiarity with the benefits of a meatless day and willingness to adopt it (de Boer, Schösler, & Aiking, 2014), main reasons for frequently eating meat and for not frequently eating meat (Schösler, de Boer, & Boersema, 2014). Although the present study is not focused on acculturation and cultural identity, we will also take into account to which ethnic groups the participants considered themselves to belong.

Method

Participants and procedure

As it is not possible to draw random samples of second generation migrants in the Netherlands, we adopted a kind of quota sampling strategy with quota on ethnic background (Turkish or Kurdish, Chinese or Hong Kongese, native Dutch), men and women, age groups, level of education, and location of residence (city/countryside). The latter variable was deemed relevant because the study was part of a project that also explored outdoor recreational behavior (not reported here). A team of professional interviewers was asked to meet the quota and to ensure the comparability of the ethnic and the native groups. They contacted potential participants in the streets, through mosques, associations, restaurants or cafes, followed by snowball sampling. Participants had either to be born in the Netherlands or to have moved here before their 8th birthday. They were rewarded with a calling card with a value of €7.50. The fieldwork was carried out in May and June 2013. All interviews were face-to-face and were conducted in Dutch, but the interviewers were all native speakers of the participant's mother tongue.

Measures

The questionnaire included modules with structured questions about ethnic identity, outdoor recreational behavior (not reported here), food activities, food consumption (of which only the meat-related items are presented here) and descriptive variables.

Ethnic group

All the participants were asked a number of dichotomous questions on their identity, which were meant to be answered in an intuitive way. They were asked to which ethnic group they considered themselves to belong; the multiple answers offered were Dutch, Turkish, Kurdish, Chinese, Hong Kongese, and Asian. Based on the answers we defined five different groups: 1 Turkish, not Dutch, 2 Turkish and/or Dutch, 3 Chinese, not Dutch, 4 Chinese and/or Dutch, 5 native Dutch. For analytical purposes this information was dummy coded to indicate the migrants taken together, the Turks, the bicultural migrants and the bicultural Turks.

Preferred meat portion size

Earlier work suggests that preferred meat portions sizes can be measured in a relatively simple, direct way (Schösler et al., 2012). In this study, the participants were asked to indicate what portion size of a piece of meat they would be most inclined to choose. The alternatives were 50, 100, 150 or 200 grams.

Number of meat eating days (per week)

Because meat consumption in the Netherlands is largely associated with the main meal of the day, its frequency is usually measured by a single question (Schösler et al., 2012): “How many days per week do you eat meat with your main meal (including chicken)?” Taking into account that migrants may eat more than one warm meal per day, an additional item asked for the number of warm meals per day (answer categories: 0, 1, 2 and 3).

Familiarity with and use of meat replacers

Two items were used to obtain information about the degree to which one's household buys products that are specially made to replace meat on the plate, such as Tofu, Quorn®, Tivall® steak, and spinach rondos (a sample product that is popular on the Dutch market). The first item asked whether the participant was familiar with these meat replacers. The next item asked frequency of use; the answer categories were “never”, “tried once”, “rarely”, “sometimes” and “frequently”.

Familiarity with the meatless day and willingness to adopt it

Following earlier work (de Boer et al., 2014), the participants were asked “As an individual, you can make a big difference to nature and climate protection by refraining from meat one (or more) days a week. Did you know that?” The possible answers were “yes” and “no”. Next, they were asked whether they were willing to do that. In order to provide them with a variety of potential answers, the alternatives were “certainly”, “maybe”, “I am doing so already”, and “no, I don't want to do that”.

Reasons for frequently eating meat and for not frequently eating meat

The participants were asked to indicate a maximum of three reasons for frequently eating meat. Based on earlier work (Schösler et al., 2014), the 9 preformulated answers included taste (“Being a meat lover”), health (“It's healthier”), habit (“Being used to it”) and appropriateness (“It fits well with what I normally eat”). Similarly, they were asked to indicate a maximum of three reasons for not frequently eating meat. The 9 preformulated answers included taste (“Not liking meat that much”), health (“It's healthier”), habit

(“Being used to it”) and ethical issues (“Because I think animal welfare is important”, “Because it’s better for the environment”).

Descriptive variables

The data contained the following descriptive variables: gender, country of birth, age, level of education, living situation and involvement in food shopping and cooking. The participants were also asked to report their body weight (in kilograms) and height (in centimetres) in order to compute their BMIs. Although the accuracy of self-reported weight and height may be questioned, the analysis here focuses on the main BMI categories (underweight, normal weight, overweight and obese). An additional variable indicated those who were unable or unwilling to report their height and body weight.

Analysis

Descriptive statistics were presented in percentages and means. Differences between ethnic groups and genders were tested using Chi square. The statistical interactions between the effects of ethnic group and gender on the meat-related variables and BMI category were tested by linear regression analyses that included dummies for the interaction terms. As some of the dependent variables were dichotomous, we checked the results of the linear regression analyses by conducting logistic regression analyses. For reasons of parsimony, only the results of the linear regression analyses are presented. All analyses were conducted with SPSS 21 for Windows.

Results

Table 1 provides descriptive information about the three samples, distinguished by gender. The samples differed significantly in age and level of education ($p < .001$). Compared to the natives, the Turks were slightly older and had a lower level of education; the Chinese were slightly younger and had a higher education level. About 90% of the migrants were born in the Netherlands. The Turkish sample included a very small percentage of Kurds (3%) and the Chinese sample included a small percentage of Hong Kongese (12%). All the Turks (or Kurds) felt to be Turkish (or Kurdish) and about 30% of them also felt Dutch (i.e. bicultural). About 90% of the Chinese sample felt to be Chinese (Hong Kongese) and about 40% of them also felt Dutch. About 40 to 50% of the three samples lived with their parents and about 40 to 60% with a partner. Living situation was closely related with age (correlations not shown), which may explain why the Turks lived more often with a partner than the others ($p < .001$). None of the samples displayed significant ($p > .05$) differences between men and women in age, level of education, living situation or the percentage that felt Dutch. The participants' involvement in food shopping and cooking did not differ between the samples ($p > .05$), but it did differ between men and women. Turkish and Chinese men were less involved in food shopping than Turkish and Chinese women ($p < .01$). In each of the samples, men were less active in cooking than women ($p < .001$). Among the men, the Turks were significantly ($p < .001$) less active in cooking (5%) than the Chinese and the natives (about 25%).

TABLE 1

Table 2 presents the results of the regression analyses to assess possible interactions between the effects of ethnic group and gender on the meat-related variables and BMI category. In these analyses age and level of education were included as controls. The results show that interactions involving ethnic group and gender were significant for several of the dependent variables. Dependent variable in the first row of Table 2 is preferred meat portion size (overall average 133 g). The preferred meat size increased slightly with age ($B = 5.8$), was larger among men ($B = .21$), in particular among migrant men ($B = .17$); it was somewhat smaller among the bicultural migrants ($B = -18.9$) but higher among the bicultural Turks ($B = 60.0$). For ease of interpretation of the regression coefficients, Table 3 presents the average preferred meat portion size split out by ethnic group and gender; the first row of Table 3 shows that almost all the bicultural Turkish men chose the largest portion. In contrast, the smallest average was found among the bicultural Chinese women.

TABLE 2

TABLE 3

The number of meat eating days per week (overall average 4.6) is the second dependent variable (depicted in the second column of Table 2 and the second row of Table 3). The frequency of meat eating was higher among the migrants ($B = 1.48$) and among men ($B = .57$), but slightly lower among the bicultural Turks ($B = -.62$). It should be noted that

about 93% of the participants reported to have one warm meal per day, except for the Chinese, of whom 22% reported to have more than one. Among the migrants taken together having more than one warm meal per day was weakly correlated with a higher number of meat eating days per week (Spearman's $\rho = .19, p < .001$).

Familiarity with meat replacers is the third dependent variable in Tables 2 and 3. About 50% was familiar with meat replacers and this was slightly lower among Turkish men ($B = -.15$), slightly higher among the bicultural migrants ($B = .10$), especially the bicultural Turks ($B = .46$). The use of meat replacers is the fourth dependent variable in Tables 2 and 3. Use frequencies were lower among the migrants ($B = -.48$), in particular the Turks ($B = -1.04$), also lower among men ($B = -.52$), higher among the bicultural migrants ($B = .59$), except for the bicultural Turks ($B = -.65$). As Table 3 reveals, almost none of the Turks reported to use meat replacers, but relative frequent users of the replacers were the bicultural Chinese and native woman.

The fifth dependent variable in Tables 2 and 3 is familiarity with the impact of a meatless day. About 38% said to be familiar with this impact, which increased with level of education ($B = .15$), and was slightly lower among the migrants ($B = -.12$), but higher among the bicultural Turks ($B = .42$). This was the only meat-related variable in Table 2 that is not correlated with gender. Willingness to reduce (the sixth dependent variable) increased with level of education ($B = .22$), was lower among the migrants ($B = -.48$), and lowest among the Turkish men (all Turkish $B = .59$, Turkish men $B = -.92$). As shown by Table 3, about 10% of the mono-cultural and bicultural Turkish men said they would be

willing to reduce meat consumption—the highest percentage (79%) was found among bicultural Turkish women.

About 19% of the participants were unable or unwilling to report their height and their body weight. Table 3 reveals that this percentage was higher among the women, particularly the mono-cultural Turkish and Chinese. BMI category increased with age ($B = .13$), was lower among the migrants ($B = -.14$), but higher among the men ($B = .21$), in particular the Turkish men ($B = .35$). As shown by Table 3, the lowest percentage with overweight ($BMI > 25$) was found among the bicultural Turkish women and the highest among mono-cultural and bicultural Turkish men. The Turkish men had almost no missing data on this variable; in this group ($n = 170$), BMI category had a positive correlation with preferred meat portion size ($r = .24, p < .01$) but not with the number of meat eating days ($r = .09, p > .05$).

Each of the reasons for frequently and *not* eating meat (hereafter called promoting and limiting reasons) was used as a dependent variable in the regression analysis to test for interactions between gender and ethnic group. The results (not shown here) revealed 6 significant ($p < .01$) interactions in regressions of promoting reasons and 1 in regressions of limiting reasons on the dummy variables. Table 4 shows that most gender differences were found in the Turkish sample. For instance, Turkish men chose more often “being a meat lover” (68% versus 32% among women) and less often “it fits well with what I normally eat” (58% versus 73% among women). These and other gender differences were smaller among the Chinese and especially the natives. Overall, the participants

mentioned more promoting than limiting reasons. Both Turkish men and women often chose health as a limiting reason (54% and 55%); Chinese men and women often mentioned 'my finances' (41% and 34%). Table 4 also reveals that the natives chose more often than the migrants health as a promoting and a limiting reason, and that they referred more often to ethical limiting reasons (i.e. the environment or animal welfare), without much difference between the genders.

TABLE 4

Discussion

Our work has shown that meat-related gender differences varied across ethnic groups in a way that may improve our understanding of the context dependency of the meat-masculinity link and its potential implications for sustainability and health objectives.

Overall, the data supported Gilbert and Khokhar's (2008) observation that ethnicity is an important factor influencing people's food choices. All the regressions of meat-related variables reported in Table 2, except one, showed significant gender differences and there were significant statistical interactions between the effects of ethnic group and gender, in particular regarding preferred meat portion size, willingness to reduce one's meat consumption, and BMI category. Again in combination with ethnic group, men and women also mentioned different reasons for frequently eating meat. As anticipated, the Turkish group was the most traditional; it demonstrated the largest gender differences and the strongest meat-masculinity link (e.g. the men's preference for large meat portions and almost no willingness to reduce). In contrast, the native group displayed the smallest gender differences and the weakest meat-masculinity link. This confirms that the relationship between masculinity and meat is not invariant and that meat-related gender differences crucially depend on the cultural context.

From a sustainability perspective, these results suggest a particular line of development in the Netherlands (and other Western countries, see Sellaeg & Chapman, 2008) to adopt less traditional framings of masculinity in combination with more healthy preferences with respect to meat. Among the natives, the food-related practices, such as shopping for food and preparing it, were less bound to traditional gender roles than among the

migrants and there were smaller differences between men and women in the meat-related variables. This pattern was different from the results obtained among the Turks. The Turkish men and women were more bound to traditional gender roles, which is in line with other work (Van de Vijver, 2007). This agrees with the notion that in Middle Eastern cultures the cooking skills of women are highly valued (Nicolaou et al., 2009). The Turkish men demonstrated a much stronger preference for meat than the women, who were more oriented to whether meat fits into a meal. The Chinese took a position intermediate between the Turks and the Dutch. The difference between the Turks and the Chinese may be related to different immigration trajectories as well as to specific cultural differences, such as the Chinese ability to adapt flexibly to their cultural environment.

The results indicate that the migrants were not directly involved in the current discourse on various implications of meat consumption, such as implications for human and animal health, animal welfare and the environment (de Bakker & Dagevos, 2012; Schösler et al., 2012). To a certain extent, this discourse is related to the use of meat replacers and the adoption of meatless days. Substantial minorities of the natives were familiar with these topics or were regular users of meat replacers, without much difference between the genders. Among the migrants, however, this discourse and its related practices were less familiar and also less appreciated. The cultural distance towards these practices was the largest among the Turkish men, who were unwilling to reduce their meat consumption and to take the implications for animal welfare and the environment seriously. The fact that almost all Turkish participants reported not to use meat replacers may be explained by differences between the Turkish and the Dutch meal formats. The concept of meat

substitution is very specific to the Dutch meal format (i.e. a staple, a vegetable and a protein component, typically meat). The Turkish cuisine is much richer; it features many vegetarian dishes, such as chickpeas and lentils, and it does not frame meat as a component that could be functionally substituted by a meat replacer. The situation may be different for the Chinese, as the Dutch meat replacers include products such as tofu, seitan and tempeh, that have long been part of the Chinese cuisine. Overall, the cultural distance was much smaller for the bicultural Chinese, especially the women, who, for instance, relatively often referred to the environment or animal welfare as a reason for not frequently eating meat. These women and the natives were more frequent users of meat replacers.

What these results will mean for future dietary trends is partly dependent on levels and types of acculturation. The population of the Netherlands, currently 16.7 million people, is expected to grow slightly and then to decline to reach a similar level in 2050 (Garssen & Van Duin, 2009). By then, migrants will make up 29 % of the population (an increase from 3.3 million to 5 million) and non-Western migrants (currently 1.8 million out of 3.3 million) will be largely responsible for this growth. Hence, although acculturation is not our main research topic, it is important to comment on some observations that are relevant for the future. Our data underline the complexity of acculturation and identity development, which occur across multiple domains of an individual's life (Berry et al., 2006). Acculturation should not be conceived as a linear process and this means, for instance, that bicultural Turkish men were not simply more Dutch than their monocultural peers. For them, feeling both Turkish and Dutch may be a distinct type of

identity, which apparently could include the choice of the largest meat portions (rather unlike the preference of native men). Hence, the Turkish were focused on protecting their otherness and their own groups, as various scholars have noted (Pels & Nijsten, 2003). The Chinese were more ready to relate to both their culture of origin and that of the country in which they were living. However, as the Netherlands does not belong to the traditional immigration countries (e.g. unlike Canada), Bélanger and Verkuyten (2010) argue that the Chinese-Dutch will have to find a position between the ‘real’ Chinese and the ‘real’ Dutch. In view of this, it is noteworthy that the Chinese way of adapting flexibly is also illustrated by the changeability of Chinese food, depending on season, region and individual consumer (Nam et al., 2010).

Our data demonstrate that policy-makers in government and industry should pay more attention to the role of gender frames and ethnic diversity in policies to promote more sustainable and healthy food consumption. What may cause barriers for these policy objectives is in particular the impact of traditional masculinity in a typically Western context, where meat is abundantly available. In the literature, several other barriers have been mentioned also. For example, traditional masculinity may create barriers for men to become vegetarians (Nath, 2011), and to accept healthy eating recommendations, because these often resemble ‘feminine’ ways of eating with an emphasis on vegetables and fruits, smaller portion sizes and decreased consumption of masculine foods (Meier & Christen, 2012; Mróz, Chapman, Oliffe, & Botorff, 2011; O’Doherty Jensen & Holm, 1999). The barriers may decrease as a result of the rise of ‘nontraditional’ masculinity, but framings of particular food items may also have to change. For instance, it has been suggested in

the literature that some foods might be given a ‘masculine makeover’ by repositioning them as a means to foster masculine autonomy and self-control (Mróz et al., 2011).

As traditional masculinity is related to ethnic group, one option that policy-makers may consider is to pay more attention to those elements of the food cultures of ethnic groups that are advantageous from the perspective of sustainability and health. As mentioned above, the Chinese and Turkish cuisine already include foods that may be considered meat substitutes due to their protein content. Tofu, for example, is a popular food in Chinese cooking but nowadays it is used alongside meat and therefore it would not necessarily be considered a substitute. The same goes for all the various kinds of pulses that are a regular part of Turkish cooking, which is by tradition low on meat (Bilgic & Yen, 2014). What may be helpful to highlight the advantages of these food cultures is a substantial upgrading of the status of plant protein as a marker of a healthy diet (Camilleri et al., 2013).

In adapting interventions to the cultural context of migrants, another potential entry point is the use of halal foods among the Islamic population. A recent study shows that texturized vegetable proteins and a number of mycoprotein products are accepted as halal foods (Asgar, Fazilah, Huda, Bhat, & Karim, 2010). It may be valuable to underline the healthfulness of these products and to introduce them as a halal alternative when halal meat is not available. In addition, the value of ‘temperance’ may be an entry point. A recent study among Turkish Dutch groups discussed the importance of temperance within Islam and how it promotes caring for one’s health (Nicolaou et al., 2009). The study

participants agreed that this is an important teaching within their religion but mentioned that in contrast to the laws governing food choice (eating halal foods) this teaching is not experienced as compulsory. Probably for different reasons, however, the young women in our study appeared to be sensitive to the value of weight control, at least for themselves. Among elderly Turkish migrants in Germany, for instance, women were more often overweight and obese than men (Buchcik, Westenhöfer, Beyer, Schmoecker, & Deneke, 2013). In contrast, our data concur with other studies showing that among the current youths the prevalence of overweight and obesity is higher in men than in women (De Wilde et al., 2014; Neslisah & Emine, 2011; Song et al., 2013; Yang, 2007).

A potential limitation to the present study is the impact of cultural differences in response styles. Surveys in a multicultural context are sensitive to differences between ethnic groups in tendencies to use the middle category of a response scale or the extreme categories (Van Vaerenbergh & Thomas, 2013). These tendencies are related to communication styles and may have substantial cultural meaning (Smith, 2004). It has been argued, for example, that in Mediterranean cultures (such as in Turkey) extreme responses are considered more 'sincere', while in Asian cultures use of the midrange of the scale is a culturally acclaimed expression of 'modesty' (Hui & Triandis, 1989, p. 298). However, as response styles have more impact on rating scales than on other choices, it is important to note that most of our results were not based on rating scales and that they were consistent across items. Another limitation is that we did not pay attention to gender differences in the consumption of sources of animal protein other than meat (including chicken). From the perspective of sustainability and health, dairy also needs to

be taken into account, but the differences between men and women in the consumption of milk and cheese may be relatively small (MRI, 2008, p. 40-41). Hence, the gender difference in animal protein consumption can largely be attributed to meat.

In conclusion, these findings demonstrate that cultural factors related to gender and ethnic diversity can play harmful but also beneficial roles for achieving the objectives of sustainability, food security and public health in Western countries. It was found that traditional framings of masculinity, emphasizing that ‘real men’ eat meat, combined with a food environment where meat is abundantly available and cheap may seriously hamper a transition to a less meat-based diet. The very combination of these conditions is bound to contribute to the growth of the existing meat-related problems, ranging from global environmental degradation to obesity and overweight prevalence. However, there are also positive developments that can make a difference. Recent changes in framings of masculinity, which seem to link masculine identities with practices of self-control, may contribute to more healthy food preferences with respect to meat. This beneficial effect could even be reinforced if non-Western ethnic groups are able to preserve those elements of their food cultures that highlight the status of plant protein as a marker of a healthy and sustainable diet.

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1 Table 1

2 Characteristics of the men and women in each of the samples.

	Turks		Chinese		Natives	
	Men	Women	Men	Women	Men	Women
	(n = 171)	(n = 179)	(n = 164)	(n = 186)	(n = 172)	(n = 185)
<u>Age</u>						
18 – 24 year	36%	26%	42%	45%	44%	44%
25 – 29 year	25%	35%	35%	36%	27%	24%
30 – 35 year	39%	39%	23%	19%	29%	32%
	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)
<u>Education</u>						
Low	22%	22%	12%	12%	5%	6%
Middle	55%	58%	50%	47%	64%	62%
High	23%	20%	38%	41%	30%	32%
	(100%)	(100%)	(100%)	(100%)	(99%)	(100%)

Country of birth

% The Netherlands	91%	89%	90%	91%	100%	100%
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Ethnic identification

% Feels Turkish / Kurdish	100%	100%			1%	
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% Feels Chinese / Hong Kongese / Asian			92%	85%	1%	1%
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% Feels Dutch	29%	32%	41%	44%	99%	98%
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Living situation

% Lives with parents (or parents in law)	46%	40%	47%	50%	42%	42%
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% Lives with partner (spouse)	54%	61%	39%	38%	42%	45%
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Food activities

% Involved in food	37%	51%	34%	48%	36%	40%
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shopping

% Active in cooking	5%	59%	26%	47%	24%	51%
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(including joint

cooking)

3

4

5 Table 2

6 Regression of the meat-related variables and BMI category on age, education and the dummy variables that represent ethnic group and
 7 gender.

	Meat portion size	Meat eating days	Familiar with replacers	Use of replacers	Familiar with meatless day	Willing to reduce	BMI category
	B=	B=	B=	B=	B=	B=	B=
Constant	99.2 (8.3)	3.49 (.38)	.39 (.10)	2.37 (.30)	-.00 (.10)	2.32 (.30)	1.76 (.10)
Age divided by 10	5.8* (2.4)	.07 (.11)	.05 (.03)	.10 (.09)	.02 (.03)	-.16 (.09)	.13*** (.03)
Level of education (low - high)	-.5 (1.9)	-.08 (.09)	.01 (.02)	-.01 (.07)	.15*** (.02)	.22** (.08)	-.00 (.02)
Ethnic group (migrant = 1, else 0)	9.1 (4.6)	1.48*** (.21)	-.08 (.05)	-.48** (.18)	-.12* (.05)	-.48** (.18)	-.14* (.06)
Turkish (= 1, else 0)	-9.0 (4.9)	.05 (.23)	.04 (.06)	-1.04*** (.19)	.03 (.06)	.59** (.20)	.08 (.07)
Gender (man = 1, else 0)	21.0*** (4.3)	.57** (.19)	-.03 (.05)	-.52** (.16)	.01 (.05)	-.16 (.15)	.21*** (.05)

Migrant man (= 1, else 0)	17.3** (6.1)	-.13 (.28)	.03 (.07)	.23 (.23)	.06 (.07)	-.04 (.23)	.09 (.08)
Turkish man (= 1, else 0)	-3.3 (6.0)	-.05 (.28)	-.15* (.07)	.25 (.22)	-.06 (.07)	-.92*** (.22)	.35*** (.08)
Bicultural migrant (= 1, else 0)	-18.9*** (4.3)	-.09 (.20)	.10* (.05)	.59*** (.16)	.06 (.05)	.16 (.17)	-.04 (.06)
Bicultural Turk (= 1, else 0)	60.0*** (6.3)	-.62* (.29)	.46*** (.08)	-.65** (.23)	.42*** (.07)	-.25 (.23)	-.09 (.08)
R square	.246	.128	.112	.276	.126	.190	.265
N =	1001	1056	1056	570	1056	404	853

8

9 Note: Table entries are unstandardized regression coefficients and standard errors. All dependent variables were coded from low to

10 high. The dummy variable Bicultural refers to those who felt to be Turkish and/or Dutch or Chinese and/or Dutch.

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

12

% Uses meat replacers regularly (if familiar)	0%	2%	0%	0%	14%	15%	26%	33%	22%	29%
% Familiar with meatless day impact	24%	28%	86%	70%	36%	26%	39%	36%	40%	40%
% Potentially willing to reduce (including “yes maybe”)	11%	24%	8%	79%	53%	54%	37%	38%	42%	38%
<u>BMI</u>										
% Don't know / Don't want to say	1%	30%	0%	0%	29%	35%	24%	21%	12%	25%
% overweight (BMI > 25) of those with data available	63%	13%	74%	0%	26%	4%	24%	3%	28%	14%

15

16

17 Table 418 Gender differences in reasons for frequently and not frequently eating meat in each of the samples.

	Turks		Chinese		Natives	
	Men	Women	Men	Women	Men	Women
	(n = 171)	(n = 179)	(n = 164)	(n = 186)	(n = 172)	(n = 185)
<u>Frequently eating meat</u>						
Being a meat lover	68%	32% ^{***}	59%	37% ^{***}	58%	48% [*]
It fits well with what I normally eat	58%	73% ^{**}	30%	40%	33%	27%
Being used to it	44%	58% [*]	44%	36%	35%	35%
To get satiety	26%	5% ^{***}	24%	28%	30%	29%
It's healthier to eat meat frequently	9%	10%	13%	19%	40%	38%
Others in the household want to eat meat	11%	32% ^{***}	10%	18% [*]	16%	20% [*]
Not liking anything else	12%	2% ^{***}	9%	14%	17%	18%
The speciality of the occasion	10%	14%	2%	3%	4%	7%

It is a sign of being wealthy	2%	2%	2%	4%	6%	13%*
<u>Not frequently eating meat</u>						
It's healthier not frequently eating meat	54%	55%	18%	25%	29%	35%
I like to vary	27%	38%*	21%	20%	36%	36%
Not liking meat that much	36%	44%	10%	16%	25%	35%*
Because of my finances	16%	10%	41%	34%	34%	28%
Being used to it	32%	26%	16%	22%	17%	20%
It's better for the environment	2%	2%	29%	23%	37%	38%
Others in the household don't want to eat meat	23%	34%*	2%	7%	20%	18%
Because animal welfare is important	4%	3%	10%	22%**	17%	23%
Because of my religion	1%	1%	6%	4%	8%	11%

19

20 Note: Statistically significant gender differences in a sample are marked by asterisks.

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