Meat & Masculinity: The Game
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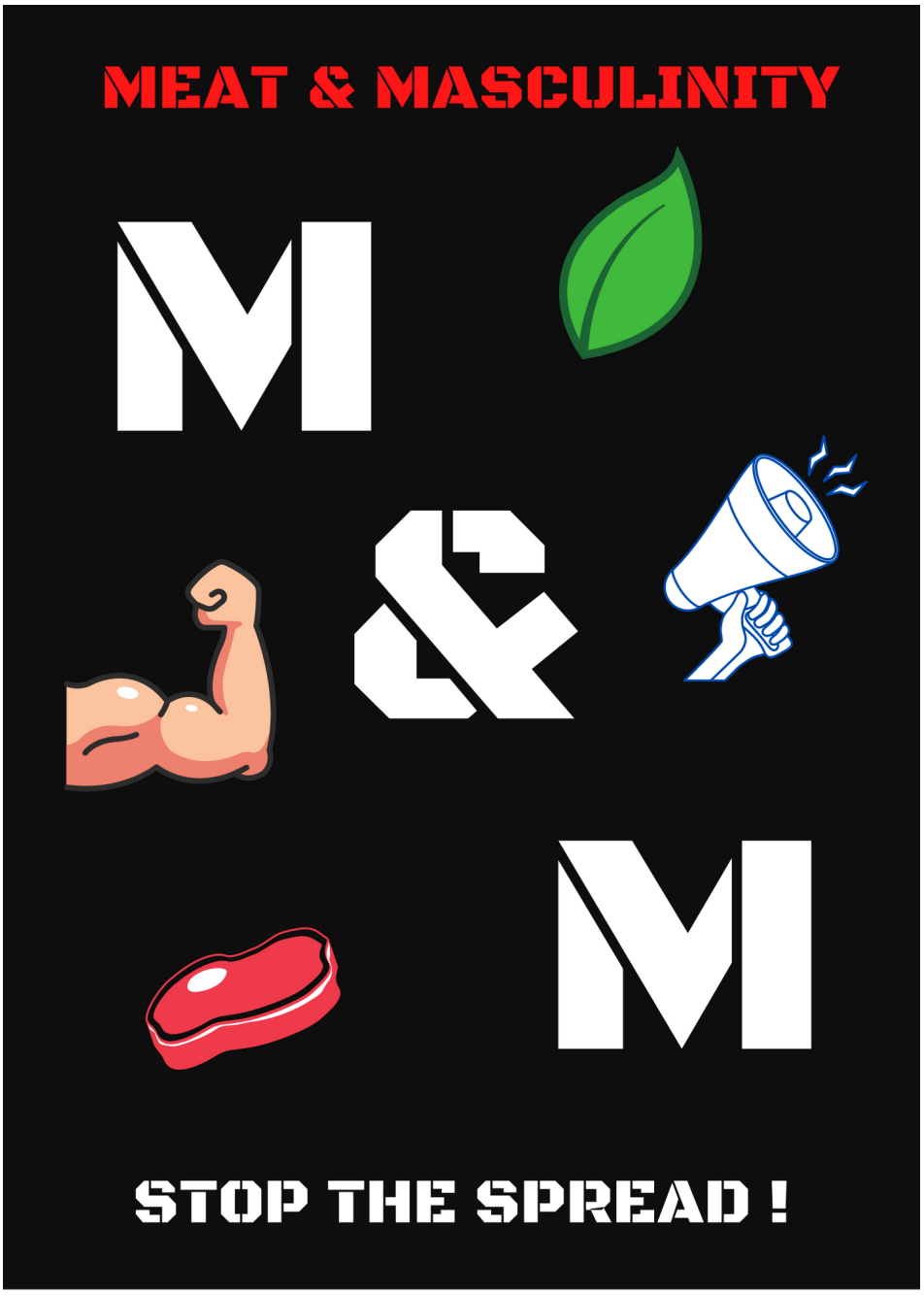

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Meat & Masculinity: The Game
Introduction

Beef, beer, bros. The meat and potatoes man. Protein loading after the gym. Big-game hunting. While not limited to men, meat has often been tied to masculinity due to its association as a viable source of protein. Protein, one of the four macromolecules, is essential for building muscle, strong bones, hair, hormones, and antibodies. Without an adequate supply of protein, the human body cannot grow or heal from a wound properly (University of Hawaii, 2020). While there are many forms of plant based protein, meat has long been considered the most efficient form, leading to high consumption of meat across the population, increasingly so in men. These ideals have been portrayed through a variety of social and cultural influences across the United States, which ultimately creates the notion that meat is the answer to strength, dominance, power, and even sexual virility for men. These associations of meat and masculinity further structure gendered politics of food into the current world. For example, in the book, *The Sexual Politics of Meat,* author Carol Adams writes "what, or more precisely who, we eat is determined by the patriarchal politics of our culture" (Adams, 1990). As a result, by associating meat with masculinity, the patriarchy drives meat consumption even higher. Currently, meat consumption in the United States is at an all-time high and projected to only increase despite significant negative health and environmental risks associated.

In our game, players will navigate the different hubs that influence notions about food consumption in the United States. These hubs include culture, mass media, food systems, government and biotechnology. The culture hub explores how food is tied into traditions, religion, war, family dynamics, and beyond. Mass media delves into the influences from social media, celebrities, famous athletes, magazines, and podcasts, while also analyzing

advertisements from various companies, fast food chains, the sport industry, and even from wartime. In the food systems hub, players learn about the meatpacking industry and environmental concerns with both meat and plant based choices. The government hub highlights key political figures, court cases, and government entities that shape regulations and food policy. Lastly, the biotechnology hub explores the processing, procedures, and nutrition of both meat and plant based foods. By highlighting each of these industries, players are equipped with more knowledge on how individual and societal food consumption patterns have been shaped by various institutions. These sectors will also inform players on why plant based diets and meat alternatives are not as popular as meat, which ultimately connects back to the associations of meat and masculinity.

Throughout the game, players will come across various Influence cards, which represents the way the meat industry has shaped perceptions about meat, and thus consumption. Players will also collect Player Cards, which will help players travel throughout the board and spread plant based influence. Each of these cards have information related to each sector, teaching players how these institutions shape notions of meat and masculinity, and how plant based diets can be better incorporated into society. Some cards will ask players to reflect on various pieces of information presented, encouraging them to take a moment to consider the information in relation to their life, preconceived notions they may have, and their own dietary behavior.

Lastly, we ask that players consider the next few questions throughout the play of Meat & Masculinity: The Game. With extensive knowledge on the negative connotations of meat along with a rise in popularity of plant based diets, why is meat still viewed as essential to each meal? Why are plant based diets looked down upon? Why are companies committed to creating plant

based alternatives that mimic the appearance and taste of meat? What is it about meat that makes it more appealing than plant based proteins such as beans or tofu? Overall, why meat?

Meat & Masculinity Game Manual

Object of the Game

Meat & Masculinity is a cooperative game. You and your fellow players are playing against the meat industry, a significant institution that spreads pro-meat attitudes across all hubs. However, as meat consumption increases, ideas of toxic masculinity are spreading, the environment is being degraded, and individual health is declining. Your team is tasked with the responsibility of preventing this spread and instead, working together to establish plant based influence and prevent outbreaks of toxic masculinity.

Each of you will assume a unique role within this plant based team, with special abilities that will improve your team's chances if applied wisely. The cubes on the board represent pro-meat attitudes and after each turn, the meat industry will continue to spread its pro-meat influence across different sectors. It is up to you and your team to work together and decide how best to utilize your given actions. Ultimately, you and your team must find a way to spread plant based influence and cure the disease that is toxic masculinity.

If you and your team are not able to prevent the spread of toxic masculinity and keep meat consumption contained before the meat industry dominates, planetary health, burden of disease, and gender equality are all at risk. Do you have what it takes to save humanity?

Game Components

- 1 board
- 6 pawns
- 6 innovation stations
- 7 tokens
    - Influence Rate token – Megaphone
    - Toxic Masculinity Rate token – Muscular Arm
    - 5 Plant Based Influence Tokens – 5 Leaves
- 104 cubes
    - 23 blue cubes
    - 20 yellow cubes
    - 23 green cubes
    - 20 purple cubes
    - 18 black cubes
- 46 Player Cards – Vertical
- 46 Influence Cards – Horizontal
- 4 Surge Cards
- 6 Expert Cards

Expert Cards

There are six *Expert Cards* which players can utilize, each with unique skills and abilities that can help to stop the spread of Meat + Masculinity while spreading the influence of Plant-based diets and non-hegemonic ideals. Players determine their role in the game by shuffling all *Expert*

Cards and drawing at random. Up to four (4) *Expert Cards* are allowed to be utilized per game, one for each player.

The Environmentalist
The Environmentalist's main priority is focusing on the detrimental effects the livestock industry has on the environment and looking at possible ways to reduce the carbon footprint by finding alternatives to meat-based products. The Environmentalist is able to *hold 8 cards in their hand.*

Food Scientist
The Food Scientist is concerned with finding alternatives to meat that are both better for the environment and healthier choices for people concerned with the risks that come with a meat-based diet. The Food Scientist is able to create plant based alternatives faster than any of the other players, making the transition to plant based diets easier. As such, the Food Scientist is able to *establish influence over any sector with only player four (4) cards,* as opposed to the five (5) cards needed by other players.

Vegan Celebrity
A Vegan Influencer or celebrity plays a crucial role in spreading ideals due to the high number of people that follow their daily routines and actions. An influencer, as it is in their title, has more social influence on citizens than other people in society due to their status and having a constant spotlight on them. A Vegan Influencer focuses on healthy alternatives to meat-based diets and likes to post images of their plant-based meals to Instagram which their followers try their best to imitate. Thus, the Vegan Influencer is able to more quickly convert meat based attitudes to plant based attitudes more quickly than any of the other players. The Vegan Influencer *only requires one action to remove all cubes in a sector* when they spread their influence.

Marketing Specialist
The Marketing Specialist is in charge of dealing with the legality and strategy that comes with labeling and branding of novel plant-based products to consumers. The Marketing Specialist determines what advertisements for either plant or meat are being shown and thus can decide to advertise one type of product over the other, where products go in a grocery store, and what gets marketed to the world. The ability of the Marketing Specialist is that they are able to *build an innovation center in their current sector for one action, without the need of a sector card.*

Philanthropist
The Philanthropist uses their large quantities of money to help promote and fund their strong interest in plant based diets. The Philanthropist has many connections and resources which can be useful if properly utilized. Due to their large amounts of money, the Philanthropist is able to send other people to places and spread the influence of the ideas they believe in. In this game, the Philanthropist has the ability to *move any player to a sector with one action (and their permission) or can travel to another's location.* With such ability, they can reach places quicker and spread their influence faster.

The Politician
The Politician is a very powerful person because of their role in policy, which affects all their constituents. The Politician has control over subsidies for alternative meat innovation,

government recommendations on food consumption, and sets regulations on the meat industry. The Politician calls the shots and is able to *give another player card from their hand for one (1) action per card. They do not need to be in the sector of the card given, however, they must be in the same sector in order to share knowledge.*

Game Setup

1. Place the Board in the center of the table within easy reach of all players.
2. Shuffle the Expert Role cards and deal 1 to each player. Each player takes their corresponding colored pawn and puts it in the COVID-19 sector. Put excess Expert cards and pawns back into the box.
3. Place 1 Innovation Station in the COVID-19 sector, and place the others near the outside of the board.
4. Put the Toxic Masculinity token on the “0” space of the Toxic Masculinity Rate, the Influence Rate token on the first space of the Influence Rate (marked "2"), and the 5 leaf tokens near the Plant-Based Influence Hubs area of the board.
5. Organize the cubes by color, and place them around the board.
    - Blue Cubes: Culture
    - Green Cubes: Food Systems
    - Yellow Cubes: Mass Media
    - Black Cubes: Biotechnology
    - Purple Cubes: Government
6. Pull the 4 Surge cards out of the Player card deck and set them aside for now.
7. Shuffle the remaining Player cards and deal them to the players face down:
    - 4 player game: 2 cards each
    - 3 player game: 3 cards each
    - 2 player game: 4 cards each
8. Shuffle the 4 Surge cards into the remaining Player cards. Place them face down onto the Player Deck portion of the board.
9. Shuffle the Influence cards and place them face down on the board to form the Influence Draw Pile.
10. Place the initial Influence cubes on the board:
    - Draw 3 cards from the Influence Draw Pile and place them face up into the Influence Discard Pile. For each card drawn, add 3 cubes (of the color of the card) to each pictured city.
    - Draw 3 more cards and do the same thing as above, but add 2 cubes to each pictured city.
    - Draw 3 final cards and do the same as above, but add 1 cube to each city
11. The player who ate meat most recently goes first. Good luck!

Game Play

Play proceeds clockwise with each player taking turns in order until the game ends.

Each turn, the current player must:

- Perform 4 actions

- Draw 2 Player cards to add to hand
- Take on the role of the Influencer

After taking the role of the Influencer, the player's turn is over and the player on the left begins their turn.

Actions

A player gets 4 actions to spend on their turn. A player may select from any of the available Basic and Special actions and spend 1 action to perform it. A given action may be performed more than once during a turn. Each player's Role will grant them special abilities that are unique to that player. Players may also pass if they have nothing else to do. Unused actions may not be saved from turn to turn.

Basic Actions

Drive

Move your pawn to an adjacent sector. Sectors are adjacent if they are connected by a line. Lines that go off the edge of the board "wrap around" to the opposite board edge and continue to the indicated sector. (For example, Popular Culture and EPA are considered to be adjacent).

Direct Flight

Play a card from your hand and move your pawn to the labeled sector. Discard the card to the Player Discard pile.

Shuttle Flight

If your pawn is in a sector with an Innovation Center, move it to any other sector with an Innovation Center. (See below for details on building Innovation Centers).

Pass

A player may also elect to pass (and do nothing) for an action.

Special Actions

Build an Innovation Center

- Building Innovation Centers helps your team move from place to place. Innovation Centers are also required for establishing influence over a hub.
- Play the card corresponding to the sector your pawn currently occupies, then place an Innovation Center in that sector. Discard the card to the Player Discard Pile. If there aren't any innovation Center left in the supply, select one of the innovation stations already in play and transfer it to the sector your pawn occupies.

Establish Influence

- Once your team has established influence in all five hubs, you win!

- If your pawn is in a sector with an Innovation Center, discard 5 cards from the same hub to establish plant-based influence. Take a leaf token and place it on the established influence area of the board to indicate which hubs have been influenced by your team (plant-based). Place the spent cards into the Player Discard Pile.

- Note: The Food Scientist only needs 4 sector cards from the same hub to establish influence in that particular hub.

Expanding Influence

- Over the course of the game, your team can remove meat attitudes to buy time needed to establish influence.
- Remove a meat-influence cube from the sector your pawn occupies. (Each removed cube costs one action). Place the removed cube back into the stock by the side of the board. If players have established influence in the hub, instead of one cube, remove all meat-influence cubes in your current sector for one action.

Share Knowledge

- Sometimes it's hard for one player to get the cards necessary to establish plant-based influence. The Share Knowledge action can be useful in these cases.
- Transfer a card from one player to another. Each card transferred costs 1 action. Both your pawn and your fellow player's pawn must be in the same sector, and you may only transfer the card of the sector that you are in together. (For example, if you are together in Health Trends, only the Health Trends card may be transferred from one player to the other).
- If either player holds more than 7 cards as the result of a transfer, the excess cards must be immediately discarded to the Player Discard Pile.

Drawing Cards

After performing actions, players must draw 2 cards from the Player Draw Pile to add to their hand. If the card is a Surge card, instead of taking the card in hand, refer to the rules for Surges below. After drawing the required cards, take on the role of the Influencer.

If there aren't enough cards in the Player Draw Pile to draw, the game immediately ends in defeat for all players!

Hand Limit

Players have a hand limit of 7 cards. If the number of cards in hand ever exceeds 7 as a result of drawing cards (or performing the Share Knowledge action), the player must immediately discard cards in excess to the Player Discard Pile.

Surges

Whenever a player draws a Surge card, discard the card into the Player Discard Pile and do the following:

1. Increase the Influence Rate: Move the Influence Rate Indicator up by one on the Influence Rate Track on the board
2. Influence: Take the bottom card from the Influence Draw Pile and add 3 cubes to the sector pictured on the card, then place the card into the Influence Discard Pile. Note: No sector can contain more than 3 cubes of any one color. If the Surge would cause the city to exceed that limit, any excess cubes are returned to the stock and an outbreak is triggered.
   Note: If there are not enough cubes to add to the board during a Surge, the game immediately ends in defeat for all players.
3. Increase the intensity of Influence: Take the Influence Discard Pile, thoroughly shuffle it, then place it on top of the remaining Influence Draw Pile.
   (Don't shuffle these cards into the Influence Draw Pile).

Playing The Influencer
Draw cards from the Influence Deck equal to the current Influence Rate and add one cube to the labeled sectors, using a cube of the same color as each card. Resolve the cards in the order you draw them. If a sector already has 3 cubes in it of the color being added, instead of adding a cube to the sector, an outbreak occurs.

Outbreak
An outbreak occurs if a player is required to add a cube to a sector that already has 3 cubes in it of that color. When this happens, instead of adding a 4th cube, add a cube of the outbreaking color to each adjacent sector.

- Ex: If an outbreak occurs in the Biology of Meat sector, add a cube to Nutrition, Sports Advertisements, Alternative Meats, and Livestock Industry.

Chain Reactions
If any of these new cubes would cause the total number of cubes of that color in an adjacent sector to exceed 3, additional outbreaks may occur, causing a chain reaction. Note that each sector may only outbreak once in each chain reaction.

- Each time a sector outbreaks, move the Toxic Masculinity token up one space on the Toxic Masculinity indicator. If the number of outbreaks ever reaches 8 (and consecutively the Toxic Masculinity indicator reaches the number “8”), the game immediately ends in defeat for all players.
- If there are not enough cubes to add to the board when Influencing, the game immediately ends in defeat for all players.

Turn End
After all of the Influence Cards are resolved, place them into the Influence Discard Pile. Your turn is over. Next player to the left now begins his turn.

End of the Game

Defeat
There are various ways in which players can lose. A loss in this game represents that the meat industry has persevered over plant-based diets and the hegemonic ideals of linking meat with

masculinity persist. The game ends immediately in defeat for all players if any of the following conditions occur:

- Players run out of game cubes of any color, indicating that pro-meat influence has been able to spread faster than plant-based ideas.
- The eighth outbreak occurs (the Toxic Masculinity rate reaches the maximum fill-ups (8) on the indicator), representing that dangerous notions of toxic masculinity prevail.
- There are not enough cards in the Player Draw Pile when a player must draw cards, indicating that players have run out of time to convert ideology surrounding meat and masculinity.

Victory

Players collectively win the game immediately when they spread plant-based influence in all five hubs: Culture, Food Systems, Mass Media, Government, and Biotechnology. Players do not need to remove pro-meat cubes in each sector in order to win, as even in real life, meat eaters will still exist. The game-victory is instant when any player is able to control the fifth and final hub.

MEAT & MASCULINITY: THE GAME

STOP THE SPREAD!

Influence Deck

Influence Discard Pile

INFLUENCE RATE

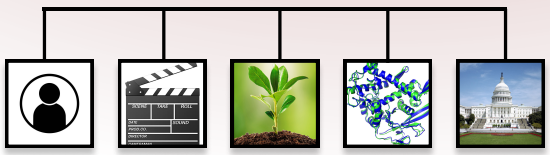
2 2 2 3 3 4 4

health trends
literature
family
religion
traditions
land use
war
to Sec. of Ag
to reports
CULTURE
gender
meatpacking workers
water use
antibiotic resistance
FDA
COVID-19
hunter gatherers
socioeconomic status
Secretary of Agriculture
to war
meat processing plants
animal welfare
greenhouse gases
food trends
general ads
FOOD SYSTEMS
lobbyists
to war
to EPA
popular culture
environment
reports
livestock industry
GOVERNMENT
influencers
famous athletes
fast food industry
climate change
USDA
biology of meat
plant based diets
MASS MEDIA
amino acids
court cases
wartime ads
BIOTECHNOLOGY
websites
alternative meats
to popular culture
film
sports ads
executive orders
magazines
food safety
EPA
nutrition
processing
podcasts

TOXIC MASCULINITY RATE

0 1 2 3 4 5 6 7 8

PLANT BASED INFLUENCE



Player Deck

Player Discard Pile

Play
1. Do 4 actions
2. Draw 2 Player Cards
   - Resolve Surges
   - Discard to 7 cards
3. Influence Cities

RELIGION

CULTURE

The Christian denomination, the Seventh-day Adventists live as much as a decade longer than the average population and often adhere to a vegetarian lifestyle (Macvean, 2015). The Church advocates for a vegetarian diet as a call from God to treat their bodies as temples. Specifically, at least half of Adventists are lacto-ovo vegetarian or eat meat less than once a week (Fraser, 2003). While studies cannot solely attribute the longevity to the vegetarianism lifestyle since Seventh Day Adventists also refrain from smoking, caffeine beverages, exercise often, and practice other healthy lifestyles, the link is still promising. It also highlights the effect of religion on diet and perceptions of meat; in Adventists, it is commonplace for both men and women to partake in similar plant-based lifestyles.

TRADITIONS

CULTURE

Since men have historically served as the primary hunters, men become the meat distributors, which results in an unequal division of power between men and women. On the other hand, societies with plant-based economies are more likely to be egalitarian, with men more dependent on women for their food sources (Adams, 1990). When women are in charge of food distribution, "women gain an essential economic and social role without abusing it," highlighting gender discrepancies in food distribution (Adams, 1990).

GENDER

CULTURE

Historically, when it became more socially acceptable for women to dine at restaurants alone, restaurants served women small salads, shaping conceptions today of salad as light, healthy, dainty, and ultimately, a "ladies' food" (Beck, 2016). Whether it is for health reasons, animal welfare, or environmental concerns, women are two times more likely than men to be vegan or vegetarian in Western societies, with vegetarianism being seen as more of a feminine trait (Love & Sulikowski, 2018).

LANGUAGE

CULTURE

In a study by Faunalytics, researchers found in order to appeal to men, avoid the terms "vegan" and "plant-based" (Anderson, 2019). Products targeting men, especially young men, avoid these standard terms. By contrast, the label "direct protein" showed more promise with men, which emphasizes that men associate meat with their desired strength and power, and avoid any products that may take away from this.

WAR

CULTURE

Starting in World War I in 1917, President Herbert Hoover implemented Meatless Tuesdays in order to ration meat for the soldiers overseas. Restaurants offered meatless specials, mass media and propaganda encouraged meatless days, and reduction in meat was seen as a patriotic duty. It was massively successful, compared to the current global campaign that encourages Meatless Mondays to reduce environmental effects (Johns Hopkins Center for a Livable Future, 2017). Consider the differing levels of success between Meatless Mondays and Meatless Tuesdays and the frameworks utilized. How does this relate to meat and masculinity?

LITERATURE

CULTURE

The number of scientific publications on PubMed as well as Google Trends show that searches, publications, and overall public interest for the terms "plant based," "vegan," and "vegetarian" have all increased based on data from 2000-2018 (Medawar et. al, 2019). These trends prove that people are increasingly interested in plant based research and more information is now available for individuals to learn about this lifestyle.

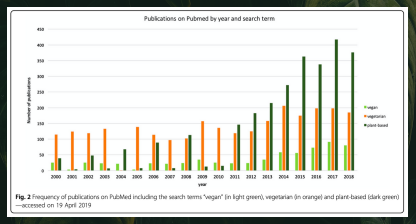


Fig. 2 Frequency of publications on PubMed including the search terms "vegan" (in light green), vegetarian (in orange) and plant-based (dark green) — accessed on 19 April 2019

HEALTH TRENDS

CULTURE

The International Agency for Research on Cancer estimates that 34,000 cancer deaths per year worldwide are attributable to diets high in processed meat (Godfray et al., 2018). Several studies have found significantly lower risk of coronary heart disease, stroke, type 2 diabetes, and all-cause mortality in diets that replace animal sources of protein with plant sources of protein, such as nuts, pulses, and whole grains (Godfray et al., 2018). The shift to plant-based diets have been shown to lower the risks of people developing a wide range of illnesses and diseases, encouraging many to ditch meat as a regular staple of their diets. Often, the toxic masculinity mentality makes people ignore the consequences that come with eating red meat and continue to eat meals high in meat because of the belief that that alternatives to meat are emasculating.

COVID-19

CULTURE

Slaughterhouses and meat processing plants are favorable environments for SARS-CoV-2 transmission due to their low temperatures and very high or very low relative humidity. Due to the high number of outbreaks in slaughterhouses, many processing plants have been shut down, with less meat available in grocery stores. This has led consumers to find alternatives, thereby reducing meat consumption (Middleton et al., 2020). Research highlights this, as in March with the height of the pandemic, grocery stores sold 231% more fresh plant-based foods than a year prior (Poinski, 2020). As fear of disease increases, people feel less inclined to incorporate meat into their diet and gear more towards a plant based diet.

HUNTER-GATHERERS

CULTURE

Historically, men were primarily hunters and women were primarily gatherers. In Carol Adams' (1990) book "The Sexual Politics of Meat," she writes that "the men... were better hunters than the women, but only because the women had found they could live quite well on foods other than meat." However, as the shift to processed meats occurred in post-industrial societies, the health risks associated with red meat have become a concern. An intrinsic desire for energy-dense and nutrient-rich food, such as meat, once promoted survival but today may predispose us to the diseases of overconsumption (Godfray et al., 2018). The belief that men must eat meat because that's how it was done in the past has predisposed many to the health effects that come with a meat-rich diet. The mentality that meat makes the man has become so ingrained that even knowing the side effects of red meat does not stop people from focusing on meat-based diets.

FAMILY

CULTURE

People are likely to adapt their eating behavior accordingly to the eating behavior of their peers and their family (Higgs, 2015). Hosts who serve their guests vegetarian meals are seen as more trend conscious, alternative, health conscious, and concerned about animal welfare than hosts serving a meat dish and might therefore act as role models (Michel et. al, 2020). Taking away peer pressure and fear of being judged from family and friends increases the reluctance to eat meat alternatives, while also straying from historical views that men are inclined to have meat in their diet.

SOCIOECONOMIC STATUS

CULTURE

While government subsidies have allowed manufacturers to decrease meat prices dramatically, meat remains more expensive compared to a vegetarian diet, specifically, a 2015 study found that a vegetarian diet is about $750 cheaper than a meat-based diet (Safran Foer, 2020). The lower price of a vegetarian diet can be an incentive for many people dealing with economic barriers who want healthier options to make a shift toward a plant-based diet.

FOOD TRENDS

CULTURE

Companies like Impossible Meat, Beyond Meat, and MorningStar Foods have made plant-based meat alternatives more accessible and mainstream through being sold at fast-food chains, and with more advertisements to further educate about and normalize them. According to a 2017 report from the market research company Mintel, 80% of millennials eat meat alternatives (Negowetti, 2020). Furthermore, US sales of plant-based meat alternatives have also reportedly increased, up by almost 200% in April 2020 compared to the same period in 2018, which highlights that consumers are interested in new forms of protein, especially when more normalized in society (Attwood, 2020).

POPULAR CULTURE

CULTURE

There has been a growing number of vegan characters in movies and TV shows, however, they are often negatively depicted and further represent the dominant ideologies of a meat-centered culture. Vegan characters are often shown as unattractive hippies, killjoys, weak and feminized, with vegan food presented as unappealing (Timmermann, 2016). For example, in *How I Met Your Mother*, an ex-girlfriend is described as "the girl who was a militant hippie vegan." This is also seen in HBO's *Bored to Death* in the line "I know a lot of radical vegans. She must be an unhappy person." Reflect on how these negative portrayals and feminine views of vegetarian eating in popular media tend to stray people away from adopting a plant-based diet.

MAGAZINES

MASS MEDIA

The magazine, Plant-Based, highlights enticing and delicious plant-based recipes that give a new twist to everyday foods, such as vegan pancakes, vegan jackfruit "pulled pork", and creamy vegan pasta (PlantBased, 2017). Magazines have made plant-based recipes more accessible and ultimately, make the transition to a plant-based diet easier for those who enjoy consuming animal products.

SPORTS ADVERTISEMENTS

MASS MEDIA

Sports ads appear to be especially culpable in perpetuating gender stereotypes in that virtually every known assessment of sport-related advertising shows that ad photos and visuals are gender-biased (Cuneen & Spencer, 2003). As people become more aware of the message being conveyed by these ads, it is possible for there to be counters to the idea of linking meat with masculinity, like the PETA ad that includes NFL Quarterback Cam Newton with the slogan "Built Like a Vegan" (Welch, 2020). He shares how his plant-based lifestyle has improved his athletic performance. This ad is a counter to other typical sports ads because it attempts to reclaim masculinity through a plant-based diet.

WARTIME ADVERTISEMENTS

MASS MEDIA

During World War I and II, President Herbert Hoover implemented Meatless Tuesdays. This ad portrays how a vegetarian diet was considered "patriotic" and as "the least thing we can do" for soldiers abroad, providing insight on how the government has effectively been able to transition individuals to eating less meat (Toole, 2019).

GENERAL ADVERTISEMENTS

MASS MEDIA

In PETA's explicit "Last Longer" advertisement, two scenes of couples having sexual intercourse are shown side by side. On one side, the man is a meat eater and the other man is a vegan. The meat-eater finishes relatively quickly and goes on with his day, all while the vegan continues having great sex. The meat-eater later steps outside where a refrigerator crushes him to death. The advertisement ends with the slogan "Vegans last longer" (PETA, 2016). PETA realizes the strong association between food consumption and masculinity and capitalizes on this through their portrayal of hyper-masculinity in relation to sexual conquest.

FILM INDUSTRY

MASS MEDIA

The Game Changers, a documentary about plant-based athletes features a variety of high-level athletes who perform in a wide range of sports such as weight lifting, track, cycling, running, tennis, and beyond. Some athletes include Arnold Schwarzenegger, James Wilks, Lewis Hamilton, Morgan Mitchell, Dotsie Bausch, Patrik Baboumian, Bryant Jennings, Derek Morgan, and more. Ultimately, this movie contradicts the presumption that athletes require high amounts of animal-based protein in order to have strength, muscle, and succeed in athletic competitions, thereby shifting perceptions of what a typical athlete must eat in order to excel.

INFLUENCERS

MASS MEDIA

Some examples of famous figures who have advocated for a plant-based lifestyle include Kim Kardashian, Benedict Cumberbatch, Zac Efron, Beyonce, Madonna, Bill Clinton, Ariana Grande, among others. Most recently, Kim Kardashian posted a photo saying "Plant-based does a body good." These celebrity endorsements often cause followers to mirror a similar plant-based lifestyle. Have you ever been influenced to try a new diet due to celebrity influence?

FAST FOOD

MASS MEDIA

Plant-based meat advertisements, such as Beyond and Impossible Meat, take the approach of environmentally friendly awareness. For example, an Impossible Burger commercial informs consumers about the carefully selected ingredients and thoughtful process that has led to the creation of this delicious meat alternative. Beyond Meat uses their advertisements to highlight the diversity of their consumers from families, athletes, farmers, workers, and restaurants, in order to show the variety of individuals that can love their meal as well as help the environment through a transition to Beyond Meat (Metrix, 2020). These advertisements cater to all people and focus on a larger cause, rather than only catering to men with the intent to make a profit for the company. It also stumps associations that animal-based products are the only viable source of protein by revealing that these alternatives also provide ample protein.

PODCASTS

MASS MEDIA

The number of plant-based podcasts has dramatically increased, making it more accessible for the public to learn about these types of lifestyles and diets. Plant-based podcasts reach across many sectors. Some delve into the relationship between chronic disease and plant-based diets, some discuss plant-based diets and fitness, and others are from medical professionals such as dietitians or cardiologists. Overall, there are a variety of topics for listeners to learn more about, which can be a positive influence for people to adopt a plant-based lifestyle.

LIVESTOCK INDUSTRY

FOOD SYSTEMS

The livestock industry has been attributed as one of the major causes of environmental pollution. A United Nations report characterized the livestock industry as one of the top sources of a broad range of environmental problems, including the loss of biodiversity, land degradation, water shortage, and pollution (Rothgerber, 2012). Alternatives to the livestock industry, such as organic farming have been shown to produce lower amounts of GHG emissions "when emissions are expressed by units of the area because of the exclusion of synthetic fertilizers that result in high N2O and CO2 emissions" (Lacour et al., 2018). As people become more aware of how much the livestock industry influences environmental pollution, they have made conscious decisions of switching to plant-based diets which are much better for the environment.

FAMOUS ATHLETES

MASS MEDIA

In the highly publicized UFC fight between Conor McGregor v. Nate Diaz, McGregor bragged that he "eat[s] streaks for breakfast, brunch, lunch" leading up the fight while Diaz maintained a plant-based diet. McGregor teased Diaz, claiming he's a "lion in there, you're a gazelle" (Psihoyos, 2019). McGregor associated his high consumption of steak with a "lion," a figure often associated with masculinity, in contrast to Diaz's weak gazelle due to his plant-based choices. While Diaz had the odds stacked against him, 4 to 1, Diaz came out of the fight triumphant. Other plant-based athletes are shifting perceptions about meat and strength including Patrik Baboumian, who holds the world record for the heaviest yoke (1,224 pounds) carried over 10 meters (Psihoyos, 2019). Upon one look at Baboumian, he is clearly muscular and proves the possibility that one can gain muscle without any animal products.

ANIMAL WELFARE

FOOD SYSTEMS

Animal welfare concerns have been the driving forces of the development of plant-based food, as neuroscience studies show that consciousness and pain exist in animals. An investigation in a slaughter plant demonstrated that only 51% of cattle become insensible after a single shot and 10% vocalize during the stunning process (Miranda-de la Lama et al., 2011). In general, factory farming systems hold livestock in extremely high densities and are denied natural behaviors, which causes elevated stress and an increased risk for disease. Free-range livestock can help alleviate these issues, however, it introduces new risks of predations from wild animals and reduced biosecurity. Furthermore, all livestock experience extreme stress associated with unloading, overcrowded holding cages, stunning (to herd livestock), and improper handling of slaughter devices due to a lack of employee training (Buller et al., 2018). These result in a high percentage of animals that are weak, bruised, lame, and have lesions, inducing more pain to the animal than necessary. In the grocery store, meat is presented in a way that removes it from all industrial practices, and it is unknown that 20% of 263 million tons of meat produced from these suffering animals are simply thrown away (Food and Agriculture Organization of the UN, 2015). When knowledge about unethical farm and slaughterhouse practices is publicized, plant-based attitudes increase.

ANTIBIOTIC USE

FOOD SYSTEMS

Antibiotics are used widely in meat production, both as veterinary medicines and as growth promoters. The Institute of Medicine (IOM) estimates that about 80 percent of the antibiotics administered to livestock in the United States are used for non-therapeutic reasons, i.e. for disease prophylaxis and growth promotion (Steinfeld et al., 2006). There is a serious concern that genes for antibiotic resistance may be selected in agricultural settings and then transferred to human pathogens (Godfray et al., 2018). People fear that continuous consumption of meat fed with antibiotics may lead to bacteria resistant to antibiotics which can create serious public health concerns. As a result, many people may choose to reduce or ditch meat products for alternatives not created with antibiotics, to limit the risk of developing resistant bacteria.

ENVIRONMENT

FOOD SYSTEMS

The United Nations characterized the livestock industry as the top source of environmental problems resulting in a loss of biodiversity, land degradation, water shortages, and pollution (Rothgerber, 2012). More specifically, the production of 1 kg of protein from beef needed 18 times more land, 10 times more water, 9 times more fuel, 12 times more fertilizer, and 10 times more pesticides than the same amount of proteins obtained from kidney beans" (González, 2020).

MEAT PROCESSING WORKERS

FOOD SYSTEMS

Farm, food processing, and meatpacking workers have been exposed to COVID-19 at a higher rate than the average population throughout the pandemic. Since April 2020, the Food and Environment Reporting Network has mapped COVID-19 outbreaks in the food system. As of February 26, 2021, 57,493 meatpacking workers have tested positive for COVID-19 and at least 284 meatpacking workers have died (Douglas, 2020). When comparing cases across food processing and farmworkers, meatpacking workers have significantly higher rates of exposure and deaths from COVID-19.

LAND USE

FOOD SYSTEMS

Livestock excreta contain a considerable amount of nutrients (nitrogen, phosphorus, potassium), drug residues, heavy metals, and pathogens. If these nutrients get into the water or accumulate in the soil, they can pose serious threats to the environment (Steinfeld et al., 2006). It was also reported that beef production requires 5,457 hectares of land per 1 billion kilograms of beef which breaks down to nearly 65 square feet per quarter pound of beef (Harvey, 2019).

GREENHOUSE GASES

FOOD SYSTEMS

- The livestock industry contributes between 12% to 18% of greenhouse gas emissions, with animals being a main driver of emissions. When analyzing CO_2 emissions across diets, a high-meat diet emits 7.19 CO_2 equivalents per day ($kgCO_2e$/day) compared to a vegetarian diet that emits 3.81 $kgCO_2e$/day (González, 2020)

- The average footprint of beef, with methane, is 100 kilograms of CO_2eq per kilogram which is 10 to 100 times the footprint of most plant-based foods (Ritchie, 2020). Overall, vegan diets can achieve a 25% to 55% reduction in GHG emissions (He et al., 2020)

WATER USE

FOOD SYSTEMS

A build-up of nutrients in the Mississippi River due to broad fertilizer use in the central US croplands (mainly used as animal feed) leads to over-stimulation of aquatic plant and algae growth leading to eutrophication, undesirable water flavor and odor, and excessive bacterial growth. A US geological survey also reported that antibiotics were present in 48 percent of the streams tested nationwide; and almost half of the streams tested were downstream from agricultural operations resulting in further contamination of our freshwater resource (Slaughter, 2009).

LAWS

GOVERNMENT

Fears for bacteria developing resistance to antibiotics have prompted various governments across the world to implement laws in order to reduce the use of antibiotics in the livestock industry. For example, in 1995, the Danish minister for agriculture and fishing banned avoparcin because it was seen to increase antibiotic resistance (Cully, 2014). The use of antibiotics for growth promotion was banned entirely in the European Union (EU) in 2000. (Cully, 2014). Even then, it is still possible that people may be skeptical about the meat they are consuming and ultimately decide it is best to switch to plant-based alternatives as these are not created with antibiotics. A switch to plant-based alternatives can make it less likely for antibiotic-resistant bacteria to develop.

LOBBYISTS

GOVERNMENT

Just as there are powerful lobbyists in favor of meat institutes, there are also those who are using their influence in favor of plant-based alternatives. Rising lobbying groups with interests in shaping plant-based food and nutrition policies include Plant-Based Food Associations and the California Plant-Based Association. These lobbying groups can help sway people in power to favor plant-based products which can result in the production and advertisement of more of these products (Keeve, 2020).

EXECUTIVE ORDERS

GOVERNMENT

Given the costs of illnesses and deaths, President Obama issued an executive order in 2014 calling for the implementation of measures to reduce the emergence and spread of antibiotic-resistant bacteria by creating an advisory council and task force for combating antibiotic-resistant bacteria (Centner, 2016). In the meantime, it is likely that many people have shifted their views on animal products in fear of falling ill, deciding to try plant-based diets.

REPORTS

GOVERNMENT

The USDA document, the Dietary Guidelines Advisory Committee Report, found that vegetarian patterns met all nutritional goals. Furthermore, they claimed that a "diet higher in plant-based foods... and lower in calories and animal-based foods is more health-promoting and is associated with less environmental impact than is the current U.S. diet" (United States Department of Agriculture, 2015). This document serves as one of the first government endorsements of a vegetarian diet, which may help convince others to adopt this lifestyle.

UNITED STATES DEPARTMENT OF AGRICULTURE (USDA)

GOVERNMENT

The USDA offers financial and technical assistance for animal mortality disposal, known as the Emergency Animal Mortality Management to support "depopulation efforts." It is meant to reduce the spread of pathogens associated with animal mortality, groundwater contamination, and odors, however, it exploits animals through the killing process. More specifically, animals are subjected to inhumane methods of slaughter such as ventilation shut down and water-based foam. These methods cause heat stress and/or suffocation, which sometimes takes hours to die. During the pandemic, the USDA has funneled millions into these "depopulation" methods to combat the backlogs of slaughter-bound animals on farms (ASPCA, 2020).

ENVIRONMENTAL PROTECTION AGENCY (EPA)

GOVERNMENT

The EPA regulates pesticide use in agriculture. Pesticides are beneficial in improving the productivity of growing crops by improving crop yield and quality while growing food on less land. However, pesticides can contaminate air, soil and non-target vegetation. The EPA evaluates pesticides before they are marketed to ensure that it does not pose unreasonable harm to human health and the environment. Furthermore, studies reveal that the positive benefits of eating fruits and vegetables outweigh the potential risks from eating low residues of pesticides contained in them. Increasing agricultural yield by reducing the risk of disease from pests, or loss of yield from pests eating crops benefits both the plant-based market and the meat industry in regards to grazing. However, agriculture alone posesses a significantly lower health and environmental effects than the costs associated with livestock.

FOOD AND DRUG ADMINISTRATION (FDA)

GOVERNMENT

The Food and Drug Administration's National Antimicrobial Resistance Monitoring System routinely finds that retail meat products are contaminated with bacteria resistant to antibiotics important in human medicine including the foodborne pathogens Campylobacter and Salmonella (Slaughter, 2009). In 2015, the FDA issued the veterinary feed directive (VFD) which altered the classification of selected over-the-counter antimicrobial drugs and prohibited animal production uses of VFD drugs (Centner, 2016). The process makes it more difficult for livestock workers to administer antibiotics to animals without first consulting a professional veterinarian.

PROCESSING

BIOTECHNOLOGY

Many supporters of plant-based alternatives hail these products for the limited number of ingredients found in these products, all of which originate from plants and naturally occurring ingredients. For example, the Beyond Burger is made of about 18 ingredients which include purified pea protein, coconut and canola oils, rice protein, and beet juice extract to give it that red-pink coloring found in beef meat (O'Connor, 2019). Similarly, the Impossible Burger uses soy and potato to enhance the product with protein and uses heme to give it the burger's meaty flavor (O'Connor, 2019). The list of ingredients for plant-based alternatives includes much fewer products than that of a beef meat ingredient list, generally signifying the healthier benefits of plant-based products. Creators of plant-based products have even included beet for coloring and heme for the flavor to create the closest replica of beef meat that consumers greatly desire, without all the chemicals that go into beef meat.

SECRETARY OF AGRICULTURE

GOVERNMENT

If an application for a drug that is a critical antimicrobial animal drug is submitted to the Secretary under section 505(b), the Secretary shall rescind each approval of a nontherapeutic use in a food-producing animal of the critical antimicrobial animal drug, or of a drug in the same chemical class as the critical antimicrobial animal drug (Slaughter, 2009). Laws like this one have been administered due to a fear that antibiotics in meat can lead to serious public health concerns. However, it does not completely eliminate the use of antibiotics in livestock which means that the risk, although reduced, could still be there.

ALTERNATIVE MEATS

BIOTECHNOLOGY

Food scientists are able to recreate meat's mushy and fatty texture, red color, and flavor. Soy, wheat, pea proteins, and coconut oil are some of the plant ingredients utilized in today's vegan meat cuisine. For example, Impossible Foods has created a product that delivers the same protein and iron as a burger made from animal meat, but its protein comes entirely from plants, and it's produced without the use of hormones or antibiotics, does not create a reservoir for dangerous pathogens, and contains no cholesterol or slaughterhouse contaminants (López, 2020). One other way that food scientists are able to reproduce the red color and metallic flavor of the meat is by altering a chemical found in soy called leghemoglobin to match heme, a chemical found in meat (Hirsh, 2019).

COURT

GOVERNMENT

In the court case, *Tofurky vs. Louisiana*, Tofurky sued Louisiana for the labelling law that makes it illegal for non-animal products to be labeled as meat (Poinski, 2020). This law, pushed on by the meat industry, claims that Tofurky cannot use the term "veggie burgers" or "plant based sausages" since it might confuse consumers about what they are eating. Overall, this court case highlights the ways in which the meat industry wants to prevent the competition of plant based alternatives in the market (Piper, 2020).

NUTRITION

BIOTECHNOLOGY

One concern regarding a plant-based diet is the deficiency of certain nutrients found strictly in animal products such as vitamin B12. In an EPIC-Oxford study, about 50% of the vegan dieters showed serum levels indicating vitamin B12 deficiency, a vitamin essential for the formation of red blood cells and maintaining the function of the nervous system (Medawar et. al, 2019). Other nutritional deficiencies commonly associated with a vegan diet include iron, zinc, and vitamin D. While these elements can be found in a variety of plant-based foods such as leafy greens, beans, and whole grains, vegetarians and vegans must ensure they seek out a balanced diet and potentially utilize supplements in order to reach adequate daily recommendations.

AMINO ACIDS

BIOTECHNOLOGY

Plant-based foods are deficient in at least one essential amino acid, making these types of foods considered an incomplete protein source (University of Hawaii, 2020). Since humans require all twenty amino acids to maintain bones, hormones, antibodies, and overall good health and normal functioning, vegetarians and vegans must find other sources to supplement their diet.

PLANT-BASED DIETS

BIOTECHNOLOGY

The health benefits of protective compounds in a plant-based diet have been linked to the prevention of cancer initiation and the retardation of cancer cell growth (Marsh et al., 2012). It is also now known that strict protein combining is not necessary to ensure sufficient essential amino acids, provided energy intake is adequate and a variety of plant foods are eaten each day, including legumes, whole grains, nuts and seeds, soy products, and vegetables (Marsh et al., 2012). There are many protective compounds in plant-based foods which provide the same nutrients commonly found in meat, without the same health risks. People who leave behind the belief that only meat can provide nutrients and switch to plant-based diets are not only breaking stereotypes but are making healthier choices in the process.

BIOLOGY OF MEAT

BIOTECHNOLOGY

Diets composed primarily of meat-based can have consequences on humans due to the different biological aspects of meat. Red and processed meats might increase [health] risks because they are usually rich in saturated fatty acids, which raise low-density lipoprotein cholesterol, and processed meat might also raise blood pressure because it is usually high in salt; other mechanisms could be involved, such as the generation of trimethylamine N-oxide from L-carnitine in meat (Godfray et al., 2018). Additionally, components in meat might be carcinogenic because they include heme iron, N-nitroso compounds in many processed meats, and heterocyclic aromatic amines and polycyclic aromatic hydrocarbons, which are formed when meat is cooked at high temperatures (Godfray et al., 2018) The many components of meat which can lead to diseases like heart disease and cancer has prompted many to lower or remove the consumption of meat and opt for healthier, plant-based diets. On the other hand, there are many who eat meat as a way to fuel their masculinity without being aware of how dangerous to their health a diet based primarily on meat can truly be.

MEAT & MASCULINITY

M

&

M

STOP THE SPREAD !

FOOD SAFETY

BIOTECHNOLOGY

Bacteria can develop on meat when not stored, cooked, or prepared properly, making meat-based products dangerous for human consumption. In 1997, the US had its largest-ever meat recall of 25 million pounds of ground beef due to an E. coli contamination in the Norfolk beef plant (Heinz & Lee, 1998). Outbreaks like this have prompted people to become more aware of the dangers of eating animal products and have influenced their switch to plant-based products.

RELIGION

CULTURE

In Leviticus 6 of The Woman's Bible, women are described as inferior to men in reference to meat. For example, Elizabeth Cady Stanton comments that "the meat so delicately cooked by the priests, with wood and coals in the altar, in clean linen, no woman was permitted to taste, only the males among the children of Aaron" (Adams, 1990). In addition, only males were able to present meat offerings to the Lord, and males who presented or ate the meat were considered holy. The inability for women to eat meat highlights the gender bias present in religious documents, which further perpetuates the association of meat as primarily a masculine domain.

WAR

CULTURE

Wartime rationing policies increased meat consumption for soldiers, individuals who are seen as the "epitome of a masculine man" (Adams, 1990). Soldiers in World War II were consuming meat at a rate of 2.5x the average civilian, due in part to the beliefs and propaganda that associated meat with building strong men for the war. Historically, the British attributed their military success to their high intake of meat while their opponents consumed vegetable-based diets. These attitudes associating meat, masculinity, and dominance have shaped how we revere meat even today (Adams, 1990).

GENDER

CULTURE

Meat is continually marketed as masculine, so much so that one nutritionist called it "the last symbol of machismo" (Adams, 1990). As a result, "the more men sit at their desks all day, the more they want to be reassured about their maleness in eating those large slabs of bleeding meat" (Adams, 1990).

LANGUAGE

CULTURE

Language has meaning, ultimately reflecting conceptions about how we view particular subjects. For example, the terms and foods that are "man-sized portions" or "hero" sandwiches are generally piled high with meat (Adams, 1990). Additionally, reflect on the difference in the terms "beef up" and "meaty question" compared to a "vegetative state" or describing someone in a coma as a "vegetable" (Adams, 1990). How do these descriptors differ? How do these subtle comments shape perceptions about meat?

TRADITIONS

CULTURE

Pregnant women were told they should eat meat at least six weeks before becoming pregnant if they want a boy. However, if they want a girl, they were told to avoid meat but eat milk, cheese, nuts, beans, and cereal (Adams, 1990). This conception was further seen in the December 2000 edition of the magazine *Men's Health*, where authors write that "one British study found that vegetarian women give birth to girls more often than meat-eating women" (Stibbe, 2004). While there remains little to no biological evidence to support this, the connotation between meat and masculinity remains.

HEALTH TRENDS

CULTURE

Some aspects of meat-based diets are believed to be beneficial for human development. One such example is that the consumption of meat has been key for human evolution as it has been linked to the brain growth and development within prehistoric Homo sapiens. (He et al, 2020) The continued belief that meat is the only way for humans to obtain necessary nutrients and build strong bodies is one reason why consumption of meat has persisted. These beliefs have also fueled the mentality that men can only gain nutrients that make them stronger and leaner from meat, as opposed to other foods.

HUNTER-GATHERERS

CULTURE

The distribution of women as gatherers and men as hunters shaped power and equality across gender roles. Historically, a more successful hunter gained greater status in the tribe by being seen as a larger provider, further contributing to notions of meat and masculinity (Love & Sulikowski, 2018). Additionally, "the more important meat is in their life, the greater relative dominance will the men command," with men in charge of meat distribution (Adams, 1990). This mentality has been seen way past the need for men needing to be hunters as this mentality that meat is necessary to be masculine has been extended to post-industrial societies.

COVID-19

CULTURE

Despite COVID-19 outbreaks in the meatpacking industry, sales of meat increased during the pandemic by 34.6% with the meat department selling an additional $7.9 billion and 1.4 billion pounds between March 15 and July 26 versus a year ago (Shelby Report, 2020). Nearly half of shoppers (48%) bought more meat to support the greater number of at-home meals during the pandemic, highlighting how central meat is in an average meal (Brown, 2020)

SOCIOECONOMIC STATUS

CULTURE

Historically, meat has been utilized as a way to demonstrate positions of power throughout societies. Meat has been viewed as a symbol of money and power because it was often only affordable by those with wealth and high-ranking positions (Adams, 1990). More recently, meat can be an important source of nutrients for people on low incomes with restricted diets due to its widespread availability (Godfray et al., 2012). Reflect on how the historical affiliation of meat and power continues to strive as the mentality that men can retain power and be viewed as more masculine by eating meat-based products.

FAMILY

CULTURE

The slogan "Beef...It's What's For Dinner" has been used in many advertising campaigns for the beef industry in order to "stress the central role meat, particularly red meat, should play in our daily meals and dietary habits" (Heinz & Lee, 1998). Even the simple association of beef and dinner has shaped current perceptions that a meal is not a "real meal" without animal protein, making it more difficult for consumers to adhere to a plant-based diet due to these influences.

FOOD TRENDS

CULTURE

Meat consumption across the globe is higher than ever. Across meats, beef, pork, and chicken products are the highest in demand, with the United States and Australia topping the charts for the highest annual meat consumption (He et al, 2020). In a review across multiple studies, authors suggest there has been a "204% rise in the supply of meat products from 1960-2010", which serves to show that meat remains to be seen as essential to meals and is not declining in popularity (González et al., 2020).

POPULAR CULTURE

CULTURE

Connections have been drawn between women and animals used for meat, often sexualizing meat to reflect a women's body to make it more appealing and sellable in industries. This is seen in restaurants like "Hooters," known for selling chicken breast and stating in their menu that their name is slang for the term, "breasts" (Grauerholz, 2007) Furthermore, the waitresses dress in raunchy outfits, originally catered to draw large groups of men to the restaurant. Connections have also been made that the sexualization of meat as "flesh" is synonymous with women's bodies and reflects men's domination over women (Adams, 1990). Sexualization of meat is also seen in the Carl's Jr. Superbowl commercial, where a hot model walks around a market in a bikini and eats a burger (Davis, 2015). All of these institutions connect typical masculine desires to meat in an effort to increase sales.

LITERATURE

CULTURE

In the book, *The Taste of War: World War II and the Battle for Food*, author Lizzie Collingham writes that "red meat, preferably beef, was highly valued as a prime source of energy, especially for the working man, and its presence on a plate helped to define the food as a proper meal" (Romm, 2014). What do you consider as essential components of your meal? Is it meat?

SPORTS ADVERTISEMENTS

MASS MEDIA

Fast food companies often utilize professional athletes in advertisements because of the admiration and attention these individuals can bring to a product they endorse. One example includes Burger King's collaboration with basketball legend Shaquille O'Neal and his exclusive "Shaq Pack" meal of a sourdough bacon cheeseburger with fries. After playing pickup basketball, Shaq exclaims "you gotta have the Shaq Pack baby" (Howes, 2018). Known for his large stature and muscular build, Shaq plays a pivotal role in constructing the idea that a fast-food meal that includes highly processed meat is part of a balanced diet for athletes.

GENERAL ADVERTISEMENTS

MASS MEDIA

In GM's Hummer H3 advertisement, "Tofu," a man appears embarrassed as he buys tofu and vegetables while the man behind him a considerable amount of steaks and racks of ribs. After feeling emasculated and in order to regain his masculinity, the tofu buyer arrives at the Hummer dealership and then is seen driving away in his Hummer with the slogan "Restore Your Manhood," only to be changed to "Restore the Balance" after backlash (Rogers, 2008). What does this ad say about the relationship between food, masculinity, and the environment?

MAGAZINES

MASS MEDIA

In the 2000 editions of the magazine Men's Health, beef is associated with positive images of masculinity, further persuading the relationship between the two. For example, some lines include:

"Meat has big advantages over all other foods: It packs muscle-building protein"

"Eat this meal and you'll grow your biceps... That's because the protein in the beef helps to build new muscle tissue"

"Make your meat beef and you'll also get testosterone-boosting amino acids" (Stibbe, 2004)

These headlines draw attention to the benefits of protein that beef provides, while also catering to men with connections to muscle building and testosterone. Ultimately, these headlines reflect how deeply rooted associations are between meat, strength, and muscle building.

WARTIME ADVERTISEMENTS

MASS MEDIA

The soldier portrayed signifies a brave, muscular man doing his part to save and protect his country. However, the rest of the country must "share the meat" because "our armed forces and our allies must get enough meat" in order to fight. By reserving meat for the most masculine figures in society, it signifies meat as a crucial element for masculinity.

FILM INDUSTRY

MASS MEDIA

In the movie, *Escape Plan*, which features ultra-masculine Arnold Schwarzenegger and Sylvester Stallone, Schwarzenegger's character claims "you hit like a vegetarian" when Stallone hits him (Psihoyos, 2019). While there remains to be no biological basis to prove less strength with a vegetarian diet, this comment portrayed in a film that features high-profile celebrities can further propel the assumption that vegetarians are weaker than a meat-based eater.

INFLUENCERS

MASS MEDIA

Mikhaila Peterson is the founder of an all-carnivore diet, "The Lion Diet" which eliminates all foods except for meat. Mikhaela advertises that this diet meets all nutritional needs, fixed her arthritis, and healed her depression. (Peterson, 2020). Celebrities, like Joe Rogan, tried this diet for his vitiligo and now are advocating for it. However, celebrities advocating for this diet can be dangerous, as there has been no research conducted to analyze the effects of eating animal products exclusively or linking it to any health benefits. The label of "lion" links the diet to strength, power, and dominance, which often caters to men, and makes the diet appealing to try. These influences and false notions can cause adverse health effects, as it results in high levels of fat, sodium, and cholesterol (Edwards, 2020).

PODCASTS

MASS MEDIA

In the podcast, *The Joe Rogan Experience*, Joe Rogan sits down to talk with the Whole Foods CEO John Mackey. Rogan, a previous UFC fighter and host, Fear Factor host, big game hunter, and an overall hyper-masculine male supports an all-meat diet compared to plant-based Mackey. When Mackey talks about the health benefits of a plant-based debate, Rogan attacks him and says "you're getting into this weird plant-based debate. Plant-based people get real edgy when you start talking about their diets" (Rogan, 2020). The podcast ultimately serves as a reflection of meat and toxic masculinity, especially when the notion of meat as a part of one's diet is questioned.

FAMOUS ATHLETES

MASS MEDIA

When Googling recommended protein intake, sources such as an "optimal protein intake guide," gym blogs, and "protein calculators" recommend eating 0.7 to 1.0 grams of protein per pound of lean mass in order to gain or maintain muscle. This notion results in higher consumption of protein foods primarily in the form of meat. Even in The Game Changers, Arnold Schwarzenegger shares that when he weighed 250 pounds, he used to eat 250g of protein per day (Psihoyos, 2019).

FAST FOOD

MASS MEDIA

Although fast food may now have vegetarian options, their commercials focus on meat products and emphasize masculinity. Del Taco's "Feeding the Beast" advertisement shows a man struggling while assembling furniture, a trait often associated with masculinity. A voiceover follows with the suggestion that the "the new shredded beef combo burrito" is "beefy enough to feed the beast." The man eats it and is now able to finish his physical labor successfully. This ad signifies the meat as a natural response to emasculation, which ultimately caters to the fantasy that masculinity can be satiated by meat. Additionally, Burger King's commercial, "Manthem" is a parody of Helen Reddy's feminist anthem "I Am Woman," where men of various races and classes gather to rise up and sing against feminine foods like quiche and small portions until they end up at Burger King for a meaty Whopper in order to regain their manhood that has been lost due to female influences (Rogers, 2008). Ultimately, these commercials prove that fast food companies capitalize on the associations of meat and masculinity in order to sell their product effectively and further perpetuate positive attitudes surrounding meat and its association to masculinity.

LIVESTOCK INDUSTRY

FOOD SYSTEMS

"In the United States, more than 9 billion livestock are maintained to supply the animal protein consumed each year. This livestock population on average outweighs the US human population by about 5 times" (Pimental, 2003). The livestock industry is a massive industry in the U.S., providing jobs to many as well as being the primary provider for meat-based diets. With the livestock industry as a very powerful industry and such a massive livestock population, it is very difficult for people not to be drawn to meat products.

ANIMAL WELFARE

FOOD SYSTEMS

Humans often consider themselves superior to all other living things, including animals. Specifically, eating meat is a "central symbol of human control over nature," due to the primal action of hunting and conquest over animals (Rogers, 2008). As a result, when vegetarianism is encouraged and pushed especially on males, many men feel a threat to their rights of domination over the natural world.

ANTIBIOTIC USE

FOOD SYSTEMS

Consumer demand for meat products has resulted in the meat industry having to develop ways to meet demand and provide consumers with more products over a limited amount of time. The introduction of drugs allowed the meat industry to meet these expectations when it was found that the use of antibiotics could help promote growth and feed efficiency when placed in animals' feed or water (Steinfeld et al., 2006). Antibiotics are used to ensure that animals use their feed more efficiently (Cherfas, 2017) which will allow them to make better use of their feed and grow larger than they are supposed to naturally.

MEAT PROCESSING WORKERS

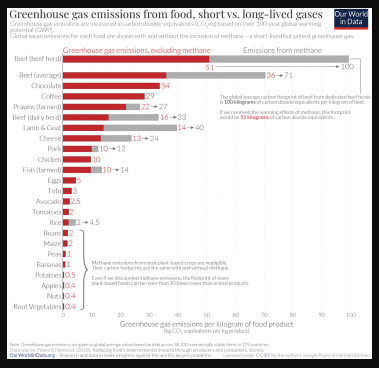
FOOD SYSTEMS

Workers in the meat processing industry are amongst the lowest paid, perform work in overcrowded plants, and carry out repetitive motions which result in high rates of injuries. Many are often undocumented immigrants, which companies take advantage of when workers advocate for better working conditions. Furthermore, in 2019, ICE had the largest raid of undocumented workers across six facilities. They arrested 680 workers, while the companies employing them were free of any charges (Farm Sanctuary, 2021).

GREENHOUSE GASES

FOOD SYSTEMS

Beef, in general, emits the most greenhouse gas pollution out all types of food production.



ENVIRONMENT

FOOD SYSTEMS

While plant-based foods have lower environmental impacts compared to meat, consumers must still be vigilant about where their food comes from. Particular fruits and vegetables that are not locally grown have a high carbon footprint due to the transportation of such large and perishable items. Furthermore, fruits and vegetables are grown out of season to utilize large amounts of water use, especially in water-stressed regions. Foods like a single avocado have been "estimated to take anything from 140 liters (30 gallons) to 272 liters (60 gallons) of water" (Gray, 2020). While environmental effects of meat are far worse than plants, many consumers argue a plant-based diet is just as environmentally degrading as meat, justifying reasoning to not limit their meat consumption.

LAND USE

FOOD SYSTEMS

Land conversion for food production is the single most important driver of biodiversity loss with agriculture occupying nearly 40% of global land. Furthermore. As a result, animal protein requires high land costs. for every 1 kg of high-quality animal protein produced, livestock are fed about 6 kg of plant protein (Pimentel, 2003)

WATER USE

FOOD SYSTEMS

Agriculture is the greatest user of freshwater for irrigation and accounts for 70% of all water used globally each year. However, increasing plant-based diets is not as detrimental as how many crops are grown only used for feedstock for cattle(Gomez-Zavaglia et. al, 2020)

MEAT PROCESSING PLANTS

FOOD SYSTEMS

When asked to reflect on the significant amount of greenhouse gas emissions from meat practices in the US, the prominent meat lobbying group, the National Cattlemen's Beef Association explained that "the beef production system in the US is always looking to make its practices more efficient by improving beef cattle genetics, nutrition, biotechnologies, and animal well-being." (National Cattlemen's Beef Association, 2019). However, these practices have yet to be implemented.

LAWS

GOVERNMENT

In 2015, the White House issued a National Action Plan for Combating Antibiotic-Resistant Bacteria. Non Therapeutic antibiotics administered to animals to increase rates of weight gain or improve feed efficiency were labeled "production uses" which should be eliminated to slacken the development of resistant bacteria (Centner, 2016). With laws like this one being put into place, it is possible for people to be less skeptical and more confident that the meat they are consuming will be safer to eat and no longer be filled with antibiotics, allowing them to resume their regular meat-based diets.

EXECUTIVE ORDERS

GOVERNMENT

On April 28, 2020, President Trump declared an executive order that deemed meat processing plants as "critical infrastructure" in order to "ensure a continued supply of protein for Americans" (Swanson & Yaffe-Bellany, 2020). This movie shows how crucial it is for Americans to have their meat, even in a pandemic with high rates of COVID-19 in meat processing plants. It also perpetuates the idea that protein can only be obtained from animal products. As such, this Executive Order allowed Americans to continue to consume animal products in their meat-based diets.

UNITED STATES DEPARTMENT OF AGRICULTURE (USDA)

GOVERNMENT

Since the 1977 Farm Bill, the USDA has assumed responsibility for a wide range of nutrition research and education activities, including dietary advice to the public. Since then, there has been a convoluted relationship between the USDA, lobbyists, and the dietary recommendations the public has access to. For example, the language of the USDA Dietary Goals Report was changed from "decrease consumption of meat" to "decrease consumption of animal fat, and choose meats… which will reduce saturated fat intake" (Nestle, 1993). Overall, instead of explicitly telling consumers to decrease meat, this document leaves consumers to figure out for themselves what meats will reduce saturated fat intake. While the USDA is a government entity meant to serve in the best interest of the public, food lobbyists often sway these decisions.

LOBBYISTS

GOVERNMENT

Over the last 50 years, the meat industry has formed powerful lobbying groups such as the American Meat Institute and the National Cattlemen's Association. They have played an active role in delaying progress in USDA's inspection timeline due to their influence on USDA. 23 One senator was quoted saying that "he did not want to disrupt the economic situation of the meat industry and engage in a battle… that we could not win," highlighting the powerful money behind the meat industry in shaping public dietary recommendations (Nestle, 1993).

REPORTS

GOVERNMENT

In the 2015 USDA Dietary Guidelines Advisory Committee Report, across the five food groups of protein, vegetables, fruits, dairy, and grains, the protein was the *only* food group that was not classified as a shortfall nutrient. Across all age groups, about 60% of individuals meet the protein intake recommendation whereas nearly 90% of the US population does *not* meet the daily recommended vegetable intake (United States Department of Agriculture, 2015). This figure demonstrates how protein has been emphasized over all other food groups.

ENVIRONMENTAL PROTECTION AGENCY (EPA)

GOVERNMENT

The EPA regulates pollutants of various industries, including the standards of water pollution from slaughterhouses. Based on the Clean Water Act, the EPA is required to review water pollution standards each year and decide if they want to update or implement new standards. However, in 2019, they failed to update standards for slaughterhouses despite an overwhelming amount of pollutants that enter waterways and affect drinking water and aquatic life (Lakhani, 2019). Furthermore, this inability to update standards makes it easier for the meat industry to continue unethical practices that harm local communities and the environment.

FOOD AND DRUG ADMINISTRATION (FDA)

GOVERNMENT

In 2018, Missouri became the first state to pass a law restricting the use of the term "meat" when a product not derived from livestock or poultry utilized the term "meat" in its labeling (Beaver, 2019). On a larger scale, the FDA regulates the production and labeling of plant-based foods with laws that only foods derived from food-producing animals may bear labels like "meat," "sausage," "jerky," "burger," or other "meaty" terms (Negowetti, 2020). It seems that with this, the meat industry gets a victory as plant-based alternatives to meat are not directly considered meat alternatives enough to be called that, as such the idea that meat is on a different scale than alternatives allows for the perpetuation of an idea of one being superior to the other.

SECRETARY OF AGRICULTURE

GOVERNMENT

The USDA Secretary John Block said he was "not so sure the government should get into telling people what they should or shouldn't do" and closed the USDA Human Nutrition Research Unit that linked study results to dietary guidance policy. It was discovered that food lobbies had swayed this decision (Nestle, 1993). The influence lobbyists have on decisions made by the USDA reveals the role of how the meat industry has been able to maintain power and block research that may shed light on the negative health effects of meat on humans. Without this research unit, consumers continue to eat meat in their diets based on biased research.

COURT

GOVERNMENT

In the 2001 court case, *Supreme Beef Processors INC v. United States Department of Agriculture* the court decided that the USDA cannot shut down meat-processing plants that continually fail salmonella contamination tests (Findlaw, 2001). Even though Supreme Beef Processors INC failed three salmonella tests within eight months in 1999, the court claimed that the presence of salmonella alone does not make the product "injurious to health." This case allowed the meat industry to continue producing and selling meat even with an unsafe amount of pathogens, leaving consumers vulnerable to a variety of food-borne illnesses.

PROCESSING

BIOTECHNOLOGY

The meat processing stage includes the use of various chemicals in the form of additives and preservatives to lengthen the time the meat can be stored and still be safe for consumption. Around 2,500 or more chemical substances are being directly added to different types of foods globally to fortify the nutritive value, impart flavor, stabilize color and texture, as well as to make them affordable (Surendran Nair et al., 2020). However, the chemicals used for the preservation of meats can also lead to potentially dangerous side effects in humans. Overuse of preservatives, use of forbidden additives and toxicants during the production process can all be attributed to the increased formation of carcinogens in red meat (Mologni et al., 2020).

ALTERNATIVE MEATS

BIOTECHNOLOGY

In research that looked at how plant based meats appeal to consumers, researchers found that in order to increase acceptance of these alternatives, "meat alternatives have the greatest chance of successfully replacing meat when they are made to mimic the taste and texture of meat and are attractively priced" (Michel et. al, 2021). These results highlight the obsession of meat and its associated qualities, even when it is made with plant based ingredients. However, in order to achieve this meat-like texture, alternative meats require a large amount of ingredients that many consumers may not be familiar with or comfortable eating.

NUTRITION

BIOTECHNOLOGY

If diets lack enough carbohydrates and fats to make more ATP for energy, amino acids from proteins will be utilized and will destroy muscle proteins. In contrast, consuming too much protein that is not utilized by the body will break it down and transform it into fat (University of Hawaii, 2020). This is significant to note as many people have misconceptions of how much protein is essential for a healthy diet and lead to excessively high protein consumption. Research reveals that the typical American diet exceeds the 0.8 g/kg/d reference daily intake for protein, with half of subjects in the study with the perception that protein was the primary source of energy for muscle (Fox et al., 2011). Excess protein intake is often caused by influential marketing companies and historical trends that connote protein with strength. Extensive athletic marketing depicting men with large muscles contributes to the perception that protein intake must be high to achieve a strong masculine look.

AMINO ACIDS

BIOTECHNOLOGY

When protein is consumed, the digestive system breaks it down into amino acids, which are essential in building DNA and RNA, making energy in the form of ATP, and used to build collagen, strong bones, muscles, tendons, and ligaments. They are used in the skin for healing and tissue regeneration, used as enzymes to assist chemical reactions in the body, are responsible for hormone synthesis, and help to maintain blood pH (University of Hawaii, 2020). These amino acids are essential, and humans require all 20 amino acids to carry out these tasks. However, humans can only synthesize 11 of them naturally and must get the other nine from food sources (University of Hawaii, 2020). Animal proteins contain the other nine amino acids needed and therefore are considered complete proteins.

BIOLOGY OF MEAT

BIOTECHNOLOGY

Meat products contain proteins and nutrients that are typically only found in animal products which are necessary for human health. Meat is a good source of energy and some essential nutrients—including protein and micronutrients such as iron, zinc, and vitamin B12 (Godfray et al., 2018) Vitamin B12 is found only in animal products, so a deficiency of this vitamin is a potential concern for anyone following a vegan or vegetarian diet or anyone who significantly restricts animal products. (Marsh et al., 2012) Consumers of meat use the idea that these nutrients can only be found in meat to continue to include animal products in their meals. Meat and masculinity have commonly been linked because of the belief that meat is the only source of these nutrients and that meat is the only way for men to build muscle and be masculine.

FOOD SAFETY

BIOTECHNOLOGY

Plant-based meat alternatives have a greater risk of microbial growth and reproduction as they provide high-moisture environments with a neutral pH. In a European research project ("LikeMeat"), microbes in plant-based meat alternatives were studied, and it was determined that after being exposed to high temperatures, 100 colony-forming microbial units were found (He et al., 2020). This type of information can make it much more difficult for someone to switch to a plant-based diet because they may fear alternatives may be contaminated by microbes and want to avoid getting sick from consuming it.

SURGE

1- INCREASE

Move the influence rate marker forward one space

2- INFLUENCE

Draw the bottom card from the Influence deck and put 3 cubes on that sector. Discard that card.

3- INTENSIFY

Shuffle the cards in the Influence discard pile and put them on top of the Influence Deck.

MEAT & MASCULINITY

M

&

M

STOP THE SPREAD !

SURGE

1- INCREASE

Move the influence rate marker forward one space

2- INFLUENCE

Draw the bottom card from the Influence deck and put 3 cubes on that sector. Discard that card.

3- INTENSIFY

Shuffle the cards in the Influence discard pile and put them on top of the Influence Deck.

MEAT & MASCULINITY

M & M

STOP THE SPREAD !

SURGE

1- INCREASE

Move the influence rate marker forward one space

2- INFLUENCE

Draw the bottom card from the Influence deck and put 3 cubes on that sector. Discard that card.

3- INTENSIFY

Shuffle the cards in the Influence discard pile and put them on top of the Influence Deck.

MEAT & MASCULINITY

M & M

STOP THE SPREAD !

SURGE

1- INCREASE

Move the influence rate marker forward one space

2- INFLUENCE

Draw the bottom card from the Influence deck and put 3 cubes on that sector. Discard that card.

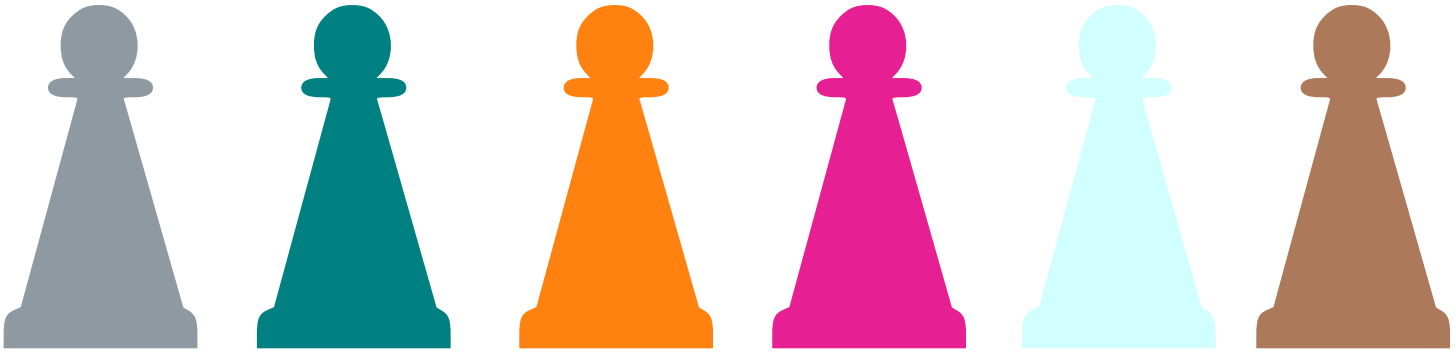
3- INTENSIFY

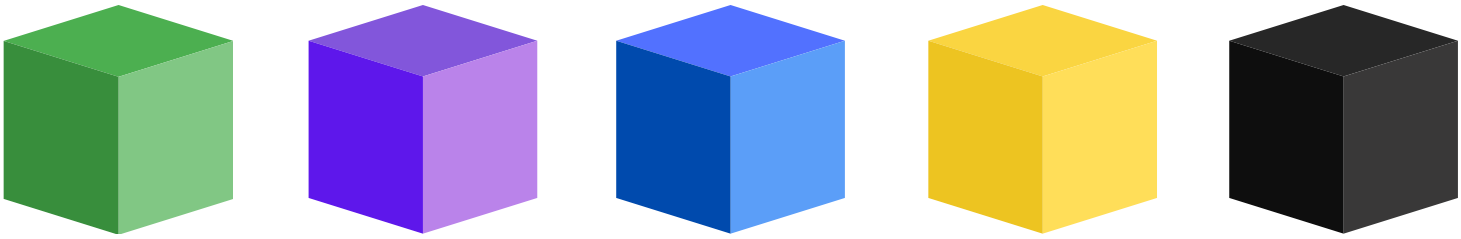
Shuffle the cards in the Influence discard pile and put them on top of the Influence Deck.

MEAT & MASCULINITY

M & M

STOP THE SPREAD !





Meat & Masculinity: The Game Takeaways

Meat & Masculinity: The Game is meant to draw attention to the often understated ties between meat and masculinity along with how various social institutions perpetuate the mentality that “only real men eat meat.” Our project highlights how dangerous this mentality can be from both an environmental and health perspective. However, the ties of meat and masculinity remain engrained across social institutions, which create hegemonic structures that enforce the idea that eating meat results in the ideal, strong, muscular man. In addition, social institutions have constructed an association of femininity with plant based diets, often preventing men from adopting a plant based diet. While these ideals are mere social constructions, our game provides an opportunity for players to confront the institutions that have shaped dietary behavior, often without a second guess.

Furthermore, our project aimed to provide a space for players to reflect on how meat consumption is tied to negative environmental effects, unethical treatment of workers, animal welfare concerns, as well as the spread of antibiotic resistance even through one meal. Even though the current food production system has allowed consumers to detach from where their food comes from, our project aims to address these issues. Ultimately, we believe that individuals should be aware of the influences that shape dietary behavior as well as consider the institutions they affect through their meal choices.

Overall, our project was not created nor intended to criticize people who consume meat as a part of their diet, but rather educate players about the toxic mentality that many have adopted to support a meat-based diet. We understand that it is impossible for everyone to suddenly drop their current mindset and switch to plant-based diets, and we are not trying to

convince them to do so. Rather, we wanted to build and present a project that demonstrated how a certain mentality does not simply affect things on the individual level but extends to many spheres such as the environment and meatpacking workers. We also acknowledge that it will be a difficult task to stray away from the hegemonic masculinity attached to meat because of how socially ingrained it is, however, our hope is that players continue to reflect on how various institutions shape our individual behavior and ultimately, health. Taking it one step further, we ask that players consider what companies and ideals they want to support and promote through their purchases at grocery stores, restaurants, and beyond. Ultimately, even small changes made in diet and purchases can help mitigate the association of meat as masculine, help protect the environment, and better an individual's health.

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