



Vegetarianism in the pandemic era: Using digital media to assess the cultural politics of meat avoidance during COVID-19

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ABSTRACT

Historically, individuals' rationales for vegetarianism have fallen into one or more of five categories: personal health; empathy towards animals; identity and group belonging through foodways; long-term environmental concerns regarding animal agriculture; and economic reasons related to the expense of meat. With the advent of COVID-19 and its associated social and economic changes across the globe, a sixth rationale for vegetarianism has emerged: lessening meat consumption out of a concern for the immediate health impacts on other *people*. We examine this emergent discourse in the digital realm through the comments in online newspapers from four countries at different levels of economic development and with variable historical engagements with vegetarianism: Argentina, France, India, and the USA. While the new argument for vegetarianism augments historical rationales of meat avoidance, discourses on vegetarianism related to the spread of COVID-19 in slaughterhouses and meat-packing plants are interwoven with pre-existing worldviews on migrants, health politics, capitalism, and market systems.

1. Introduction

The global impacts of the COVID-19 pandemic have been internalized by nearly every person on the planet, providing an opportunity to address the effects of sudden-onset social, economic and political changes at both the individual and collective level. The recommended physiological actions for the reducing the spread of the SARS-CoV-2 virus, such as hand-washing, masking, and quarantine, were situated within existing approaches to individual and public health that long predated the current pandemic (e.g., Miller, Yardley, & Little, 2012). Similarly, the social actions that have been undertaken during the pandemic have made use of existing concepts of long-distance communication (written letters, telephony) supplemented by the advent of digital technologies that enable one-to-many communications through individual social media accounts as well as through managed and curated platforms such as digital newspapers and vetted blogs. The rapid acceleration of use of a variety of forms and structures of digital engagement during the pandemic (Pirone, 2021) enabled individuals to broadcast their understanding of COVID-19's novel conditions relative to their pre-existing worldview, in which people queried and addressed everyday actions under new conditions of constraint such as lockdown and social distancing.

Even before the pandemic, food consumption and preparation ranked among the topics with the highest volume of online volunteered commentary, resulting in global engagement with "digital food geographies" (Kinsley, McLean, & Maalsen, 2020, p. 31; see also Cesiri, 2020; Kanjilal, 2021; Mangiapane, 2021; Price, 2021). Food consumption is an activity that occurs multiple times per day, with implications for economics, social interaction, nutritional intake, sociability, and perceptions of well-being (Appadurai, 1981; Smith, 2006a). In times of great change, one of the most-affected aspects of life is reflected in diet as sources of supply and conditions of access change the availability and preparation of food. The current COVID-19 pandemic is just such a catalyst, and there is already ample evidence (Branson-Potts, Vives, Serna, & Ormseth, 2020; Carter & Moseley, 2021; Gorman, 2020) that people are changing the way that they procure, prepare, consume, and discard food. Changes in foodways, intensely variable on both communal and global scales, are interwoven with long-standing systemic conditions of food choice ranging from perceptions of health and social identity along with differential availability of food that heightens individual and community identity but also exacerbates existing challenges such as food insecurity (Carney, 2020). Furthermore, the shut-downs, lockdowns, and shortages associated with the early stages of the COVID-19 pandemic saw material changes in the form and content of

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the discourses surrounding these issues, which moved increasingly into virtual fora.

Catalyst or crisis moments prompt a recognition of new opportunities and restrictions. Within the discourses of food and prior to the COVID-19 pandemic, there were already many motivations for people to choose to expand or limit their consumption of particular comestible items. Each household, community, and nation has a dietary profile that includes the sum total of these individualized, daily decisions about what is “good to eat.” These perspectives are a function of place, time, class, and culture (and subculture), and are generally prescriptive of the types of foods that are to be preferentially consumed. Of all the discussions and internalizations of the meaning of food, those concerning the consumption of meat are perhaps the most distinct and long-lived, with meat-eating the subject of philosophical, medical, and religious discourse for nearly as long as the written tradition. Compared to other food sources, meat is both celebrated as a culturally significant food (e.g., Cohen, 2022) and denigrated as a morally and environmentally compromised nutritional choice (e.g., Lappé, 2021 [1971]).

Humans have evolved as omnivores, yet there are many more things that can be consumed than are generally embraced by any given culture. One of the most significant ongoing dilemmas is related to the consumption of the flesh of another sentient being. Historically, motivations for the inception of meat avoidance can be divided into five principal categories: moral reasons; personal health; identity and group belonging through foodways; environmental concern; and economic reasons related to the expense of rearing or obtaining meat. One of the earliest recorded expressions of meat avoidance is couched in an empathy towards animals, as expressed in the notion of *ahimsa* (non-violence) found in many South Asian religions, initially seen in the practice of Buddhism and Jainism starting in the fifth century BCE and continuing in the present-day expression of Saivism and Vaishnavism (as encompassed in the umbrella term “Hindu”) in South Asia (Staples, 2020). In some religious traditions this empathy is species-specific, as in the prohibition against eating beef in Hinduism because of a reverence towards cattle, and the prohibition against pork in the Jewish tradition. In other religious traditions all forms of animal life are prohibited for consumption, including those religions that espouse the doctrine of the transmigration of souls through which people and animals are understood to have interchangeable lives.

Another reason for the avoidance of meat is an economic one, which has several manifestations: For some people, the cost of meat is prohibitive; others view the environmental impacts of meat production as unsustainable threats to long-term global economy. A desire for self-improvement leads others to remove meat from their diet for improved health (e.g., giving up red meat to reduce the risk of colon cancer; Clonan, Roberts, & Holdsworth, 2016). In some societies diet choice is either limited or such a strong part of group identity that people choose to accept the diet in order to fit in or to set themselves apart from members of outgroups. Often peoples' choice of diet is based upon a combination of these ethical and moral motivations. Kindness is a primary driver when people choose their diet because of empathy towards animals (kindness towards animals), a somewhat less obvious driver when environmental concerns are the main motivation (kindness towards future generations), and may be a consideration in group identity (kindness towards others within the group).

Across the globe today, the percentage of people who eschew the consumption of meat is increasing (Leahy, Lyons, & Tol, 2010), with implications for many aspects of culinary engagement including land use, agricultural practices, stocking of supermarkets, menus at restaurants, and home consumption. The COVID-19 pandemic has additionally brought about many changes throughout the world, including to the eating habits of large segments of the population. A historical perspective provides the background to ascertain the role of seeking social and economic justice as a form of kindness to people (principally those working in meatpacking facilities, but also those adversely affected by the expansion of pasture). In this article, we assess the historical

context for different forms of dietary restrictions on meat to determine the role that these five rationales, including the intentional kindness towards animals and towards other people, has played in the development of both established and emergent patterns of vegetarianism. We unravel why the particular application of kindness towards people as a focal point of new arguments in favor of vegetarianism is so controversial, and the extent to which the consideration of people has emerged as a new focal point in the globalized digital discussion of diet choice. Using our observations of these phenomena, we also evaluate the extent to which novel digital dialogues can bring about social change.

One arena for such digital discussion is online news media, particularly those which allow or even encourage below the line comments on the articles they publish. The conversations and interactions with the content of the news that occur in these fora transform the below the line comment sections from static virtual spaces into dynamic discursive places (cf. Ash, Kitchin, & Leszczynski, 2018; Batty, 1997). Examination of below the line comments sections of online news articles provides us with an insight into the current beliefs and discourses around the adoption of vegetarian diets using samples from four different countries representing different global regions at different levels of economic development: Argentina, France, India, and the United States. This methodology allowed us to rapidly collect representative viewpoints of a time period when online discourses were particularly salient due to the effects of reactions to COVID-19 and when attitudes towards the eating of meat were in rapid flux.

2. What is “meat”?

Wild animals are the original “meat” of the human diet; domestication of animals began only about 11,000 years ago and has resulted in the direct human control of only a handful of species compared to the very large number of wild species (Zeder, 2012). Humans domesticated animals by controlling reproduction and selecting for desired traits such as docility and the capacity to produce multiple outputs such as wool, milk, and labor power; a few animals, such as dogs, cats, house mice, and rats also self-selected for closer proximity to humans (Ammerman, in press). In the pre-refrigeration era, the size of domesticated animals also fulfilled particular parameters of cuisine: “family-sized” units such as chickens and piglets, and “community-sized” units such as sheep, goats, cattle, yak, llamas, and camels. Although domesticated animals became the primary source of meat, humans continued to use wild animals just as they continued to use wild plants (Smith, 2006b).

The definition of what constitutes “meat” is not standardized across the globe, but has developed differently based upon culture, religion, economy, and geography. Among domesticated animals the concept of appropriate animals for breeding and consumption mark cultural boundaries, with some animals viewed as “pets” in one culture (such as guinea pigs, rabbits, dogs, and horses) simultaneously regarded as appropriate for eating in other cultures (e.g., Belaunzaran et al., 2015). Consumers may generally view a particular species as being suitable for eating (beef, ducks) while electing not to engage in certain enhancements or categories of that same animal (such as eating veal or foie gras). Even statistics about meat illustrate a certain ambiguity about what constitutes “meat”: global assessments of national and international meat consumption such as USDA or OECD statistics tend to focus on certain domestic animals such as cows, chickens, sheep, and pigs, and leave out numerous sources of domesticated animal proteins (such as duck, goat, goose, guinea pig, llama, turkey, and yak), as well as semi-domesticates such as ostrich and emu, and all types of wild meat (including bushmeat). Interestingly, fish and shellfish are a particularly ambiguous category of animal protein; both “farmed” and “wild” versions exist, but they too are invisible in the global statistics of “meat” consumption, or are regarded as a completely separate category. As a dietary distinction, the separateness of fish is borne out in the dietary designation of “pescatarianism” as an intermediary status.

The procurement and consumption of meat encompasses a variety of

nutritional and social objectives, in which the actual consumption of meat is encompassed in factors such as culture, taste, cost, religion, gender, and socioeconomic status (Clonan et al., 2016). The status factor in meat consumption is one that long predates domestication; ancestral human hunters, unlike any other carnivore, selectively killed the most robust members of the herd for reasons of displaying their hunting prowess. Among domestic animals, meat-eating is globally recognized as an index of status, with categories of meat illustrating relative household wealth (with a sliding scale from filet mignon to hamburger to skirt steak, ribs, and offal; Clonan et al., 2016). OECD and USDA statistics on meat consumption illustrate that meat-consumption strongly tracks with economic growth in most countries (OECD/FAO, 2020).

3. Vegetarianism in global context

Just as “meat” is a defined commodity, there are a number of gradations of meat-eating ranging from a heavily carnivorous diet (e.g., the so-called “Paleo” diet) to extreme abstention not only of avoiding animal flesh in consumption but also declining to eat plants such as potatoes whose uprooting can cause harm to burrowing animals (e.g., the diet of Jain adherents; fruitarians). In between are a variety of diets that include seasonal or occasional abstention from meat (e.g., Lent in the Christian tradition, the Saga Dawa festival of the Tibetan Buddhist tradition); regular abstention from some species of animals (as in Kosher and Halal traditions); situational avoidance of meat in cuisine (e.g., Kosher traditions of avoiding mixing meat and milk at the same meal); and avoidance of meat that has not been killed in a particular manner (the Halal tradition). The generally accepted degree of meat avoidance varies widely culturally and regionally, and often has a long history. Ancient meat-eating can be detected through documentary sources as well as through the study of animal bones from archaeological sites (e.g. Clutton-Brock, 2014; Hartman, Bar-Oz, Bouchnick, & Reich, 2013). By contrast, vegetarianism is difficult to detect in the archaeological record, so our earliest information about vegetarian practices comes from texts. Two historically recorded traditions of vegetarianism have a strong impact on modern practices of meat reduction, both of which were first codified in writing in the mid-first millennium BCE: one is the Mediterranean philosophical tradition of vegetarianism, the other is the South Asian religious tradition of *ahimsa*, or non-violence.

The historical tradition of Mediterranean vegetarianism begins with the teachings of Pythagoras in the sixth century BCE. Pythagoras' reasons for promoting a meatless diet included both motivations of kindness towards animals and the avoidance of killing beings which he perceived to have a “soul,” but also for bodily and mental health, to avoid overindulgence, and to strive for virtue (Dombrowski, 2014). Pythagoras' ideas were influential to much of the later philosophy in the Mediterranean world, and his arguments in favor of vegetarianism were replicated by many later philosophers and thinkers, particularly in the Platonic tradition—for example, the historian Plutarch was a notable advocate of a vegetarian diet (Dombrowski, 2014). In the context of the Christianizing Roman Empire in the early centuries CE and into the Middle Ages in Europe, vegetarianism as a practice became more of a monastic expression of austerity than a lay practice (Gilhus, 2014, p. 363). Vegetarianism began to find its way back into mainstream thought in the 17th century, when authors like Thomas Tryon strongly suggested a vegetarian diet for ethical, health, and economic reasons, placing an emphasis on the idea of “temperance” (Robinson, 2020; Tryon, 1683). This conception of vegetarianism became influential to Enlightenment and later Transcendental thinkers, with notable supporters such as Benjamin Franklin and Henry David Thoreau.

In South Asia, the earliest suggestion of a vegetarian ethos comes from the Vedic texts, probably composed sometime in the second millennium BCE (although not written down until the first millennium BCE; Singh, 2014[2009]), with a few denunciations of violence towards animals appearing in the Rigveda (Griffith, 1896, for example Hymn 10.87.16), but there is little clear indication of how geographically

widespread or societally ubiquitous a practice of vegetarian diet was at this time. *Ahimsa* or non-violence became a more central practice in Buddhist and Jain religious traditions, appearing in the mid-first millennium BCE, both of which extol the virtues of kindness towards animals. Early Buddhist texts are ambivalent on the strict practice of dietary vegetarianism (Barstow, 2017, p. 25), but vegetarianism has certainly become a part of some Buddhist practice in South Asia and beyond in the centuries since. Practitioners of Hinduism adopted some Buddhist ideas in the late Early Historic and Early Medieval period, including an increased emphasis on *ahimsa*. As Buddhism was adopted in Central, East, and Southeast Asia, it became a basis for vegetarian movements there (although these did not always reflect a mainstream practice, even when Buddhism was the predominant religion). The spread of the Buddhist ideal of *ahimsa* and the associated avoidance of meat dovetailed neatly in China with pre-existing practices which advocated for a renunciation of meat under particular circumstances relating to personal austerity or the keeping of vows. This combination of motivations for meat avoidance continues to resonate with modern vegetarian movements in mainland China (Liu, Cai, & Zhu, 2015).

In other parts of the world, concerns for personal and planetary health predominate when people espouse a vegetarian lifestyle. Hopwood, Bleidorn, Schwaba, and Chen (2020) found that the preponderance of people who try a vegetarian diet in the US do so for perceived health benefits. However, these relative benefits and negatives remain debated by those seeking a healthy lifestyle. As noted by Clonan, Roberts, & Holdsworth (2016, p. 368), the nutritional positives (protein, iron) and health negatives (increased carcinogenic exposure) are major factors in consumers' perceptions of the relative nutritional benefits of consuming meat: “This complexity make it particular difficult for consumers to determine whether or not to include RPM [red and processed meat] in their diets, and if so, how much to include” (Clonan et al., 2016, p. 368). Indeed, the only other comestibles that are treated with as much medical equivocality, social discussion, and intense personal introspection about timing and quantity of consumption are alcohol and marijuana, both of which are legal but “controlled” substances with limited sanctioned accessibility. To these nutritional components of dietary dilemmas about meat are added numerous other social dilemmas stemming from moral, religious, and social perceptions. Among social perceptions, the recognition of the high environmental cost of meat can be ascertained through factors of water and nutrient inputs and greenhouse gas collateral outputs, all of which are considerable (Clonan et al., 2016). To this is added the high actual cost of meat relative to other foods, in which vegetarianism may be bolstered by an individual's or household's economic situation and how much and which types of meat they can afford.

Many of the social, economic, philosophical, and religious rationales for vegetarianism appear intertwined; Hopwood et al.'s (2020) study about health in the U.S., for example, showed that people who are committed vegetarians also are concerned about animal rights, and Liu et al. (2015) note that patrons of a vegetarian restaurant in Guangzhou reported varied and overlapping motivations of personal physical and spiritual wellbeing, community cohesion, and religious conviction as reasons for a vegetarian-leaning diet. Regardless of the variant rationales espoused by vegetarian practitioners, vegetarianism is a source of identity and cultural demarcation at the individual level in many communities and at the national level in India, where approximately 29% of Indians in the most recent census identified themselves as vegetarians (Census of India, 2014).

4. Vegetarian narratives and the coronavirus pandemic

To further evaluate the perspectives around vegetarianism as a gloss for personal and national identity and cultural demarcations, we engaged in an examination of responses to the novel coronavirus from the perspective of consumers responding to specific narratives of meat-eating at the time of virus origins and transmissions. The emergence of

the virus, its rapid spread, and the rapidity of the subsequent lockdown resulted in a “pinch-point” of supply and demand in which panic buying targeted certain types of foods but also the introspective recognition of the default patterns of consumption that had characterized everyday life. For example, Slotnik (2020) reveals a shopper's observation that “empty meat freezers [at grocery stores] turned out to be a boon because it ‘made me realize I was overeating meat.’” Statements such as this reveal the latent conflicted relationship to eating meat that is easily brought to the fore at times of significant change, in which consumers critically evaluate their food consumption patterns through the lenses of economic, social, environmental, and personal perceptions.

Our aim was to evaluate the extent to which the COVID-19 outbreak provided a new focal point of concern about the deleterious effects of meat-eating on people other than the consumer. The novel coronavirus is not the first time that there has been a suggestion of meat-eating being harmful to contemporary people, as discussed relative to the herder-agriculturalist conflicts of Nigeria (Uko, 2016); the dangers of inexpert slaughter during the Hajj (Ahmed, Arabi, & Memish, 2006, p. 1014); and the abusive worker conditions of meat-processing plants in the United States (Blanchette, 2015; Stuesse, 2018). But the immediacy of the presumed connection between the consumption of wild animals as a source of zoonotic outbreaks responsible for the COVID-19 global pandemic that can be traced practically in real-time, and the political and social attention to slaughterhouses and meat-packing plants as places of crowded human working conditions where viral transmission was rampant, provided a new focal point for the emergence of additional discourses about vegetarianism. The physical restrictions brought about by social distancing and other measures introduced to combat the spread of COVID-19 necessarily placed these discourses squarely in the digital arena, with public opinion both shaping and shaped by conversations taking place on news platforms and social media, particularly in countries with existing infrastructures of digital communication (cf. Ash et al., 2018; Batty, 1997). In these digital spaces, which are neither fully private nor fully public, personal political convictions become connected to more externally oriented performance of speech as activism (McLean & Maalsen, 2013), resulting in a blurring and breaking down of boundaries between the household sphere and the public sphere which was accelerated during the physical isolation of lockdowns and social distancing (Pirone, 2021).

5. Methods: research in the time of coronavirus

With the lockdowns, shutdowns, and self-isolation associated with the first months of the COVID-19 pandemic, many people's primary outlets for expressing their opinions moved to digital platforms. Our research takes advantage of this shift by using a novel approach to the eliciting of qualitative information through the use of publicly available information nested within newspapers' online editions in a manner that combines elements of the traditional social science methodologies of ethnography, oral history, and archival research. Yeager and Steiger (2013) highlight the importance of qualitative approaches to digital geography, suggesting that they can make clear the relationships between particular digital places and the people actively participating in them. We elected to investigate major international newspapers that provided interactive “comments” section for their articles. This approach is similar to the methods employed by Price (2021), who identifies below the line comments as places of activism and discourse as well as places where topics which may not receive continuous mainstream attention can remain at the center of conversations. In this blog-like interface, individuals identify themselves by their preferred screen name and provide a comment in response to the online news story. “Comments” are a type of reader-contributed input that is, in terms of editorial vetting and time-investment, considerably less formal than Op-Ed pieces or a “letter to the Editor” which are the other modalities by which people who are not employed by a newspaper can offer a published comment. The realm of below the line newspaper comments is

part of an authorial tradition of single-interlocutor perspectives seen in poetry (e.g., Campbell, 2019), autobiography (e.g., Albright, 2003), and graffiti (Valle & Weiss, 2010). Like archival historians, our method was not to pose direct questions to individuals, but to evaluate the record that they make for themselves in the context of a particular subject, similar to the way in which physical archival materials are grouped into folders and folios by archivists long in advance of any specific research project. Finally, our research parallels the concepts of oral history, in that individuals are speaking for themselves, and choosing how they wish to be portrayed just as an interviewee for an oral history project chooses how to dress, what to say, and how to respond to other interlocutors (e.g., Portelli, 2018; Shostak, 1981).

Although comments on online news stories are volunteered by individual participants, there are monitors present in the creation and curation of a newspaper's “comments” section. Moderators are analogous to archivists who determine which materials to accept into the archive and who function as the organizational distributors and gatekeepers of the information that is available to those who subsequently wish to read comments, make new comments, or reply to prior comments associated with a specific article (a process paralleled by other web-based fora such as Wikipedia, for example). This type of moderation is frequently aimed at keeping discourse in online comment sections “civil” (Santana, 2016), but also serves to somewhat skew the types of comments which become publicly visible, in some cases altogether preventing comments on articles deemed likely to be controversial. Although the online comment section that accompanies a newspaper article is visible to all (or most) readers, the contribution of comments is often more limited as some newspapers restrict comments only to subscribers. The “archival” and gatekeeping functions of online newspapers also extend to the number of days in which comments are allowed, as many sites become “closed” for comments after a specified period of time.

We acknowledge that there are challenges in the use of volunteered newspaper commentary. Below the line comments may not be representative of the perspectives of entire populations, given the problems of social inequality and differential access to digital technology that affect the ability to engage in these discourses (Price, 2021). On the technical side, there is also the reality that some individuals may post frequently under different names, or in different newspapers in ways that overcounts the number of responses (a common challenge in citizen-science inputs such as Volunteered Geographic Information; see, e.g., Goodchild & Li, 2012). Newspaper commentary is also sometimes monitored before posting, to avoid the unfiltered newspaper commentaries that had been lauded as a noble experiment in community engagement but often quickly degraded into vitriol and name-calling (Rieder, 2016). Many newspapers have addressed this problem by requiring those who post to be subscribers or to register with a verifiable email address; others have replaced the “comments” function with the opportunity to share or link the article into social media profiles for comments and sharing, thus outsourcing the monitoring of comments to entities such as Facebook; still other newspapers have ceased the public comment function altogether. It may be that our use of newspaper commentaries captures a fleeting moment of public participation at the nexus of journalism and readership that will eventually be eclipsed.

6. Data set

We examined digital newspapers from four countries for the period January 1 to August 31, 2020 (a time period selected to capture the quickly shifting attitudes in the early part of the COVID-19 pandemic), using the paired search terms “meat” and “virus” (or their linguistic equivalents) to identify articles with posted online reader comments, and coded those comments for their reference to meat avoidance (vegetarianism or veganism) as a solution to the problems specifically generated by meat production during the pandemic. Our choice of the countries of Argentina, France, India, and the United States covered four

continents, three languages, different national levels of economic development, different national cuisines, and different levels of vegetarianism that preceded the pandemic. We also selected these four countries on the basis of the authors' cultural competences that enabled us to evaluate the subtleties of discourses encoded in commentaries, having grown up in the U.S. in bilingual households (South American Spanish for Ammerman; European French for Smith; for the importance of reflexivity and positionality in research, see [Narayan, 1993](#); [Franklin & Lee, 2020](#)). Finally, we selected newspapers that were representative not only of major metropolises in those countries but also regional newspapers that had online commentary sections. The newspapers selected for this study were: *La Nacion*, *El Diario de la Republica*, *Pagina 12*, *Perfil*, and *Clarín* from Argentina; *Le Figaro*, *Le Monde*, *Sud Ouest*, and *Nice Matin* from France; *Deccan Herald*, *The Hindu*, *The Indian Express*, and *The Times of India* from India; and *The Arkansas Democrat-Gazette*, *The New York Times*, *The San Francisco Chronicle*, and *The Star Tribune* [Minneapolis] from the United States.

While there has been a tremendous amount of media coverage of the virus, the specific equation of meat production, distribution, and consumption practices constitutes a smaller subset of that coverage. Our paired search terms “meat” and “virus” netted 65 newspaper articles with comments from 17 newspapers, with a minimum of four different newspapers per country that included both national and regional dailies. The number of comments per article varied from one to 436 comments, with one outlier (an article entitled “The End of Meat,” in the *New York Times*) generating 3409 comments. In total across these articles, 7641 comments were assessed. Each of the comments was evaluated by one of the authors as to whether the commentator espoused or advocated the cessation of meat consumption, or vegetarianism, as a solution to the article's observations about the close link of meat-eating with the appearance and dissemination of COVID-19. In reporting online comments, we have anonymized usernames that appear to be identifiable full names in keeping with standard anthropological practices of the protection of research subjects.

The four countries spanned a continuum of meat consumption: the percentage of people who self-identify as vegetarian in each country ranges from 29% in India ([Census of India, 2014](#)) to 7% in Argentina ([Rey, 2019](#)), 5% in the U.S. ([Hrynowski, 2019](#)), and 3% in France ([BFM TV, 2016](#)). These statistics are bolstered by OECD statistics on meat consumption ([OECD/FAO, 2020](#)). (It is important to note that both self-reported data on vegetarian diet and national-level data on meat consumption are potentially skewed by a variety of data acquisition issues, but these statistics are still demonstrative of the approximate degree to which diets with reduced meat consumption have been embraced in each country). Yet each nation's newspapers carried a variety of articles about the relationship of the coronavirus to meat consumption, in which readers responded to articles about the relationship of meat consumption to the emergence and spread of the virus. We found that the frequency of articles about meat and coronavirus peaked at two points of the time bracket of our study: in the first instance, peaking in March and April of 2020, the discussion of meat and coronavirus focused on the *origins* of the novel coronavirus as linked to the Wuhan wet-market theory (e.g. [Ayithey, Dzuvoor, Ayithey, Chiwero and Habib, 2020](#)). These articles focused on the role of wild game, domestic animals, zoonoses, and the conditions of animal slaughter in China and elsewhere. Comments to these articles tended to focus on the immorality of meat-eating in general and focused on the health of the planet, including care for regions far from the area where the newspaper was based, and environmental awareness that were encompassed in vegetarianism. The global awareness and engagement of these comments is likely an artifact of the digital mediums on which the comments are housed, given the overall compression of space and time associated with the increase in instantaneous digital communication ([Ash et al., 2018](#)).

Comments in the second peak of newspaper coverage (June 2020) focused on the welfare of people and animals in commercial slaughterhouses and meat-packing plants. This period of time coincided with a

greater understanding of the ways in which coronavirus was transmitted from person to person, in which large gatherings and closely-spaced workplaces were identified as places that were more likely to create conditions for “super-spreader” events. Over the summer of 2020 in which journalistic coverage increasingly focused on the *effects* of the coronavirus rather than its causes, the subject of meat and vegetarianism gradually faded away from the news and its commentaries. Additional reasons for the subsequent decline in meat-coronavirus news investigations might be linked to the news cycles which were accelerated and diversified on the subject of the coronavirus over time, but also may have been prompted by the fact that meat shortages that had been experienced at the beginning of the pandemic were ameliorated, store shelves were once again well-stocked, and some of the initial concerns about meat such as whether the virus could be transmitted through raw meat were ameliorated by studies that showed that cooking killed the virus.

The speed of the news cycle also affected the periodicity of comments. We noted that the majority of comments appeared within two days of the original posting of the article even when comments sections remained open to subsequent additions, which enabled us to more closely capture the news cycle as an iterative process of journalistic presentation and reader reaction. The tight correspondence between news articles and commentaries provided a snapshot of reactions to developing events in ways that could be tracked across the four countries' newspapers.

7. Outcomes: vegetarianism in a broader discourse

Our evaluation of newspaper articles from Argentina, France, India and the United States encompassed 7641 comments, of which 356 explicitly referred to vegetarianism and/or the avoidance of all meat products as a remedy for the specific ills of the coronavirus identified in the articles, i.e., the start of the epidemic as a zoonosis and the transmission of the virus in slaughterhouses and meat-packing plants due to the damp and close quarters for human laborers. These comments presented the zoonotic origins of COVID-19 as a call to action for reducing meat consumption:

Honestly, the best thing to do, for public health, is shut all these plants down and have society go completely vegetarian. I'm not joking, and the planet's health will be better as well. (Dana in *New York Times*, 15 June 2020)

[L]es végétariens ont raison: cette pandémie est partie de la viande, si cela n'avait pas été, tout à fait par hasard, un animal sauvage, le pangolin, cela aurait été (les innombrables épidémies touchant les volailles, porcs, mouton, bœuf, hein, la vache folle!) un animal domestique... la consommation de viande est malsaine (“The vegetarians are right: this pandemic resulted from meat. If it hadn't started with some wild animal like the pangolin, it would have been some domestic animal, given the many epidemics that have emanated from poultry, pork, mutton, and beef (remember mad cow?). Eating meat is unhealthy.” (Oui Oui 1 in *Le Figaro*, 5 May 2020, trans. Smith)

Muy bien! ahora mas que nunca!! El Covid19 se origino de los animales muertos y vivos que venden para comer en el mercado de China. Si China hubiera sido vegana este desastre viral nunca hubiera pasado. Vieron? (“Very good! Now more than ever!! Covid 19 originated from dead and living animals that are sold as food on the market in China. If China had been vegan this viral disaster never would have happened. Did you see?” Anonymous in *El Diario de la República*, 22 March 2020, trans. Ammerman)

How is it possible that people are not talking about animal consumption being the source of most of these worldwide diseases? This is what you get for eating murdered things. Bad Karma. Time to go

plant-based, save our planet, and ourselves!...” (Anonymous in *Times of India*, 24 May 2020)

In spite of the widespread acknowledgement about the direct link of meat and the coronavirus, comments directly espousing vegetarianism were in the minority. The fact that less than 5% of the comments were in any way related to the recommendation or endorsement of a vegetarian lifestyle came as something of a surprise, given that the perceived link between meat consumption and the promulgation and spread of the coronavirus seemed straightforward. To date, the Wuhan wet-market hypothesis continues to be the prevailing explanation of the moment at which the novel coronavirus that causes COVID-19 made the jump from animals to humans (Ayithey et al., 2020; Hughes et al., 2022). The conditions in slaughterhouses and meat-packing plants have continued to be a primary locus of virus transmission, both in the United States and abroad (Middleton, Reintjes, & Lopes, 2020). Nonetheless, relatively few comments in response to articles about the initial transmission and subsequent spread of the virus via the practices of meat-production and consumption made the case that both the conditions of initial transmission and one of the major loci of subsequent transmission could have been avoided if people did not eat meat. This was the case despite explicit article titles such as “The End of Meat is Here” (*New York Times*, 21 May 2020); “Coronavirus dans les abattoirs: est-il risqué de manger de la viande?” (“Coronavirus in slaughterhouses: is meat-eating risky?” *Le Figaro* 19 May 2020), and “Can Cutting Down on Meat Prevent Future Pandemics?” (*Times of India* 24 May 2020). Indeed, the “End of Meat” article from the *New York Times* produced the highest number of comments ($n = 3409$) of any of the articles in our study, but had a lower percentage of comments (100 comments, or 2.93%) directly espousing or identifying vegetarianism as a solution for the problems of meat-eating identified in the article.

Instead of engaging with the elimination of the consumption of meat as an agentic solution to the association of the novel coronavirus with meat, writers of comments engaged in myriad other economic, social, and political concerns related to meat-eating. Regarding the beginnings of the virus, commentators engaged in finger-pointing to the origins of the virus in China as the result of indiscriminate consumption of wild animals and the poor conditions of open-air markets. Regarding the transmission of the virus in meat-packing plants, readers often commented about conditions of work that resulted from globalist and capitalist exploitation, or, more darkly, blamed workers who were often at the social margins, undereducated, or residing in the country illegally and whose conditions of work were exacerbated by close quarters of residence and dubious standards of home hygiene. Readers in the U.S. pointed to the loss of labor unions' power and the diminution of OSHA and other governmental bodies of oversight over working conditions.

Many commentators, especially in France, emphasized that the problem was not meat-eating per se but the type of meat that was available; they lamented the loss of family farms and locally sourced meats that were increasingly replaced with industrial-scale production, distribution, and marketing. They had especially harsh words for mega-grocery stores (“les grandes surfaces”) and “hard discounters” whose contracts with meat-packing plants shaved down profit margins and provided large quantities of cheap meat to consumers at the expense of animal and worker health. Economic arguments also prevailed in the U.S., where vegetarianism was sometimes painted as a left-of-center, elitist perspective and where the purchase of poultry was defended as “the only meat we can afford these days” (Annie, *New York Times*, 15 June 2020). Throughout the Argentine, French, and U.S. cases, meat was often characterized in comments as a natural, essential food for human well-being.

Nationalistic comments about the virus went far beyond the defense of eating meat, using the occasion of the virus to engage in ethnocentric and nationalistic tropes, ranging from the relatively benign to the overtly racist. Comments such as these follow patterns of racialization and reification of perceived ingroup-outgroup boundaries that are all

too common in discourses occurring in digital spaces (cf. Bonhomme & Alfaro, 2022; Ozduzen, Korkut, & Ozduzen, 2021). In this context, digital discourses can be seen as amplifying and exacerbating underlying divisions drawn along lines of foodways. Vegetarian and vegan discourse on ethical consumption, in particular, have been noted as frequently falling into colonializing and racializing tropes (cf. Bailey, 2007; Polish, 2016).

Faut peut-être que les Chinois arrêtent de bouffer n'importe quoi et de détruire la biodiversité à tout va... (“Maybe the Chinese should stop eating anything and everything, and stop ruining biodiversity,” PJD in *Le Figaro*, 16 May 2020, trans. Smith)

Acheter Français, manger Français et surtout pas de produits étrangers. Nous avons les meilleurs produits au monde 🇫🇷 chez nous. (“Buy and eat French products, and avoid foreign ingredients. We have the world's best food right here at home,” Marquises in *Nice Matin* August 2020, trans. Smith)

This is God's way of asking not to slaughter animals for relishing their meat. India has suffered less because it is largely vegetarian and care for Lives (sic) of innocent animals. (sochee in *The Indian Express*, 13 June 2020)

Yo digo—tuvo que pasar lo del coronavirus para que no comieran mas inmundicias los chinos. Tanto hambre tienen? Cucarachas, murcielago, perros gatos. Dejense de jorobar. Coman arroz!! Y el famoso pez globo con toxinas, el sushi, estan todos locos. (“I say—this thing with coronavirus had to happen for the Chinese to stop eating filth. Are they that hungry? Cockroaches, bats, dogs and cats. Stop this nonsense. Eat rice!! And the famous puffer fish with toxins, sushi, they're all crazy,” Anonymous in *Perfil*, 24 February 2020, trans. Ammerman)

As a Christian nation we should care for these people too and hold these large companies accountable! Perhaps we should stop buying from companies even if it means eating less meat.... (iammee in *Star Tribune*, 10 July 2020)

Beyond the evident element of digital racism in many of these comments, these observations illustrate that the concept of vegetarianism as a point of avoiding negative impacts on both animals and people is complexified by individual perceptions, nationalistic and racialized tensions, and international economics, all of which are contingent upon geographical particulars and which are only amplified within the context of digital discourse (cf. Ash et al., 2018; Bonhomme & Alfaro, 2022; Ozduzen et al., 2021; Price, 2021). Within national boundaries, the appeal and sentiment of meat-eating can be a flashpoint for communal tensions that extend from religious and social differences that often are translated into socioeconomic inequalities. It is interesting to note that the percentage of comments that advocate vegetarianism, in our survey hovering in the 3–8% range, closely matches the global percentage of people who self-identify as vegetarians in national polls and surveys. Hence, it appears that the advocacy for vegetarianism is lodged within existing communities of practice, rather than emerging as a potential form of redress by new audiences.

The social tensions surrounding animal slaughter and meat-eating are especially prevalent in India, where political and social groups have increased the harassment of those who sell and eat meat (Staples, 2020). In contrast to France and the U.S. in particular, meat in India is not usually sold in supermarkets but out on the street, such that the procurement of meat is a highly visible public act in which people are seen butchering animals and purchasing meat from butchers and shops. The act of cooking meat results in distinctly identifiable culinary scents that emanate from households, and the discard of bones and other byproducts of meat preparation are difficult to conceal in public middens and trash bins (even if individuals take great care to conceal their trash, the acts of local scavengers such as rats and dogs will reveal households that eat meat). Interestingly the anti-meat trope in India,

which has long been addressed to Muslims, Christians, lower-caste groups, and tribal communities' consumption of beef in particular, has now been broadened to include a particular abhorrence for the consumption of wild animals and a nationalist sentiment against the Chinese consumers of wild animals as the culprits blamed for the initial outbreak of the coronavirus, at least in the globally engaged context of digital comments. Comments about cuisine are thus intertwined with the general international tensions between India and China that are also manifested in ongoing border disputes that have resulted in economic sanctions and loss of life (e.g., [Fravel, 2020](#)).

Calls for vegetarianism are mitigated through international mechanisms in another way as well, through the displacement of animals as commodities from one country to another. Meat is a globally sourced commodity with implications for the physical and cultural environments of net-producer nations. The environmental impact of deforestation for cattle ranching in Central America for consumption in the global North has been recognized since the 1970s (e.g., [Nicholson, Blake, & Lee, 1995](#)). Global commodity flows mean that actions undertaken in one country to avoid meat may have few local repercussions if other countries demand those products. Just as farmers in developing nations such as Afghanistan and Colombia respond to the global illicit drug market through an economic calculation that entangles them with a hierarchy of exploitative middlemen, animal producers in developed countries direct their commodities towards the international buyer. American pork producers revamped their queues and sales to the Chinese market, which reached out to global producers after losses due to African Swine Fever in 2020 ([Reus, 2020](#)); Australian beef producers export cattle to countries such as Indonesia where beef consumption outpaces the local supply ([Mahbubi, Uchiyama, & Hatanaka, 2019](#)).

International commodity flows triumph over in-country motivations and capacities, leading us to ask, "What are the international boundaries of morality?" This question is particularly relevant in the digital context, where boundaries are blurred and spaces compressed. These moralities are not limited to questions of vegetarianism, but also relate to other practices of consumption that are scrutinized for their sustainability and the disbalanced entanglements between producer nations, consumer nations, and the nations that absorb waste: disposable plastic, carbon emissions, and fossil fuels, to name a few. Specific actions and avowals such as vegetarianism provide the promise of linking each individual's actions to a broader desired condition, including the well-being of other humans. However, it remains to be seen whether vegetarianism and the associated awareness of factory farms and meat-eating as a specific outcome of the COVID-19 pandemic results in a significant skew towards vegetarianism as a result. Outbreaks of the virus have also been traced to industrial plants that are processing foods other than meat ([Douglas, 2020](#)). Despite the increasing popularity of meat substitutes in some industrial nations, international demands for meat as a marker of social status and the return of global economic health will be mirrored in a rebound of meat consumption. The likely outcome is not the creation of a more humane set of conditions for animals and the people who slaughter and prepare them, but a move towards increased automation in processing plants ([Seaton, 2022](#)). An avoidance of meat as a matter of "kindness" towards workers should be balanced with a realization that diminished jobs will result in greater precarity for this category of worker.

Another consideration of vegetarianism as a source of national tension is the connection of foodways to the perception and embodiment of socioeconomic status. [Clonan, Roberts, & Holdsworth \(2016, p. 370\)](#) note that vegetarianism is often linked with feminism as an ethical stance promoting "cruelty-free" use of foods, cosmetics, and other products; they similarly note that higher socioeconomic levels and higher levels of education are associated with diminished meat consumption. One can imagine that in these particularly polarized political times, any calls for the reduction of meat consumption, or outright vegetarianism, will be viewed negatively by some as an elitist prerogative, a theme particularly pronounced in the French and American

commentaries and echoed in political discourse (e.g., [Cohen, 2022](#); [Sievert, Lawrence, Parker, & Baker, 2022](#)).

8. Conclusion

The emergence of a "novel" pandemic such as COVID-19 has resulted in social discourses that are anything but novel as individuals incorporate new information into their existing world-views. This observation through the phenomenon of observing comments about meat-eating is instructive relative to other ways in which there are predictions of post-pandemic change in white-collar work, urban living, and education which may not actually come to fruition once the pandemic has abated. It is likely that the long-term changes that come about as a reaction to the COVID-19 pandemic will vary due to the varying geographic, cultural, economic, social, and political differences that exist globally. If, during the pandemic, there was indeed a shift towards more vegetarian diets, will that change persist as COVID-19 plays less and less of a role in the public consciousness? Will the long-term reaction be the same in Argentina, France, India, the United States, and beyond?

The recognition of the politics of vegetarianism highlights current digital discourses of culpability and responsibility in human-environmental dialogues and in human-human coexistence. The impact of the discourse of meat-eating as a specific source of harm not only to animals and to the environment, but to other people, is likely to continue as the toll of meat-eating increases with human population growth. The recognition, mitigation, and treatment of the current COVID-19 pandemic is a precursor to other emergent diseases that are likely to come through a zoonotic pathway ([BBC News, 2020](#)). The COVID-19 pandemic, and the watershed moments revealed through the close reading of citizen-narratives of morality, economics, and health that it has provoked, provide important insights about the rapidity with which people integrate new rationales into their prior belief systems. [Herzberg \(2020, p. 296\)](#) discusses the ways in which the response to COVID-19 enables researchers not only to address the needs of the moment but also "to identify potentially unforeseen vulnerabilities" the identification of which will be essential to addressing the next pandemic. Our research illustrates that these vulnerabilities are not measured merely by material and financial capacities, but also by socioeconomic and cultural points of stress that become exacerbated in the course of rapidly emergent diseases. The discourse of vegetarianism and veganism will play an increasingly larger role in identity-formation and the broadcasting of moral and religious convictions about the role of foodways as a component of public health. Yet the avoidance of meat-eating can be cloaked in nationalist and dominant-majority sentiments, in which choices in foodways are both opportunistic in envisioning moral futures and punitive in denying moral and culinary citizenship.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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