

Journal for Critical Animal Studies

ISSN: 1948-352X


INSTITUTE FOR
CRITICAL ANIMAL
STUDIES



Volume 15, Issue 5, 2018

Journal for Critical Animal Studies

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Journal for Critical Animal Studies



**Volume 15, Issue 5
October 2018**

Issue Introduction: In-Vitro Meat (IVM) and the Lingering Questions for Nonhuman Animals and Earth

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As our world population is projected to reach nine-billion by 2050, we know that our way of procuring and consuming food sources, including meat, is unsustainable. Food shortages, global warming, energy consumption, animal cruelty, and pollution are some of the pressing issues that must be addressed within the food industry. Some have suggested that turning to in-vitro meat versus traditional meat could solve some of the inherent problems and be beneficial for nonhuman animals, humans, and earth. In-vitro meat or IVM is the production of meat-based products using tissue-engineering technology. IVM advocates suggest this technology can produce animal meat products without using a nonhuman animal. Theoretically, IVM is touted as a painless process that would be efficient enough to supply the world with its global demand for meat. In recent years, this theory has become a reality with companies such as Memphis Meats creating cruelty-free ground beef in 2016 and lab-grown duck and chicken in 2017.

As CAS scholars and activists, perhaps the most reassuring promise of in-vitro meat is that it will be good for nonhuman animals and earth. Even PETA joined the cause by hosting an “In-Vitro Chicken Contest” in 2008 which would award one million dollars to the first people to engineer viable in-vitro chicken by 2012. PETA (2016) suggests this technology will “save billions of animals per year” and “improve the environment.” While this seems promising, the fact remains that IVM does not completely remove animals from the process of creating meat products. Warehousing nonhuman animals in captivity is still necessary for IVM. Without access to captive animals, how do IVM scientists procure starter stem cells? Without a steady supply of captive animals, IVM is not possible.

In this edition, Nathan Poirier problematizes other issues inherent to IVM technology. He grapples with how IVM philosophically relates to vegetarianism, exploring the moral equivalents often used to claim that IVM is an ethical alternative to industrial meat. Furthermore, Poirier takes issue with arguments that suggest IVM is the only alternative to industrial meat and the only means of addressing the serious environmental and animal issues related to the animal food industry. And finally, Poirier offers us insights into how vegetarianism could bolster IVM perspectives should vegetarianism be given more emphasis and attention during these discussions.

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**Volume 15, Issue 5
October 2018**

The Continued Devaluation of Vegetarianism in Light of In Vitro Meat

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Abstract

Animal agriculture has been gaining negative popularity in recent decades due to many studies and reports of its damaging side effects. In vitro meat is an emerging technology that uses stem cells and tissue engineering techniques in an attempt to nearly remove animals from the meat-making process. Consequently, it promises consumers an ethical and sustainable alternative way to consume meat. As such, IVM is a topic fraught with possibilities and ambiguity. In asserting the utility of in vitro meat, proponents concomitantly, and both directly and indirectly, dismiss vegetarianism as an additional way for consumers to stave off environmental damage and reduce animal suffering in a practical manner. This paper surveys comparisons between in vitro meat and vegetarianism, and problematizes the resulting devaluation of vegetarianism in light of such comparisons made by IVM stakeholders. In vitro meat proponents claim that this technological fix can address all the same problems of animal farming as vegetarianism but will be more effective due to the impracticality of people voluntarily adopting vegetarian diets. This paper argues that this sentiment is likely more due to socio-cultural norms and value judgements than to pragmatics.

keywords: vegetarianism, veganism, in vitro meat, technology studies, meat, environmentalism

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The Continued Devaluation of Vegetarianism in Light of In Vitro Meat

In recent years, meat has been targeted as perhaps the greatest threat to the environment. In 2006, the U.S. Food and Agriculture Organization tied many environmental issues to livestock production to a staggering degree (Steinfeld et al., 2006). The FAO declared that animals raised for meat and dairy products contribute 18% of global greenhouse gasses, which implicates animal agriculture as the leading contributor to anthropogenic global warming (Steinfeld et al. 2006). Further, meat eating is the leading contributor to land degradation, pollution, deforestation and invasive species colonization (Henning, 2016). Eating animals has also reached deep into our water systems. Under current fishing patterns, scientists predict “the global collapse of all taxa currently fished” by 2050 (Worm et al., 2006), with two-thirds of ‘managed’ fish stocks in the oceans already either overexploited or depleted (Cullis-Suzuki & Pauly, 2010). Most of these effects are from industrial operations. However, Stanescu (2016) has shown that nonindustrial animal agriculture also possesses many of the drawbacks of industrial farming, albeit on a smaller scale. If nonindustrial animal agriculture were scaled to meet the world’s rising demand for meat, its lesser (but still significant) impacts would become severe, and is simply an impossible feat on many fronts (Stanescu, 2016). Together, these circumstances single out meat as the most significant impact factor to biodiversity loss, in which species are becoming extinct around 1000 times the background rate (De Vos, Joppa, Gittleman, Stephens, & Pimm, 2015). In addition, there are over 60 billion individual farmed animals, and close to 3 trillion water-based animals killed for their flesh each year (Potts, 2016, pp. 3-5), with meat production continuing to increase globally.

In sum, “livestock production has become problematic in nearly every aspect” (Neo & Emel, 2017, p. 41). When compared to nutritionally equivalent plant-based foods, animal

agriculture is “inherently inefficient” regarding resource use and is comparatively more taxing on the environment (Sabaté & Soret, 2014, p. 478). Yet, vegetarianism is consistently devalued as a dietary option. Despite the growing stigma of meat consumption and the growing prevalence of meat-free diets in Western societies, vegetarians and vegans are still stereotyped, derided, marginalized, and even constructed as terrorists (Griffin, 2017; Sorenson, 2016; Cole & Stewart, 2011). This pattern has continued with the advent of in vitro meat (IVM) by way of its comparisons to vegetarianism, which continue to devalue the latter.

Advances in tissue engineering have given rise to IVM as a means to address the environmental, animal and human health issues associated with meat consumption by nearly removing animals from the meat making process and growing meat in a laboratory. IVM does not completely remove animals, however. Captivity may be a necessary component of IVM, such as maintaining stock animals for obtaining stem cells, should IVM become commercially viable. While this is an important concern for many vegetarians, I plan to develop (and problematize) animal captivity within IVM with a separate paper. For the present, the focus is on the comparisons IVM technology has drawn to vegetarianism. Both approaches to meat consumption are considered alternatives to traditional meat eating and proponents of each address both major and minor negative consequences of consuming meat, albeit in significantly different ideological ways. This paper will outline and assess comparisons made between IVM and vegetarianism. Such comparisons usually assert that both are morally equivalent means to achieving the same ends, but then go on to assert IVM as the only practical alternative to industrial meat. I critique this discouragement of vegetarianism by problematizing the way it is made to seem unreasonable compared to IVM. I also contend that arguments which posit IVM as the only alternative to industrial meat are oversimplifications, and that IVM and vegetarianism are not morally equivalent

means in which to address some of our planet's most pressing environmental and ethical issues surrounding animal consumption. Lastly, I briefly comment on how vegetarianism could accompany IVM discussions but is instead largely silenced and discredited as an option.

Comparisons between IVM and vegetarianism are scattered throughout both academic and popular literature. As yet, no one has collected these comparisons and systematically analyzed them together, along with their implications. I have come across no article authored by an IVM stakeholder in which vegetarianism was made to appear at least as legitimate as IVM. Vegetarianism is constantly overlooked, devalued, or given fleeting attention relative to its well-established benefits. Therefore, this paper seeks to fill the gap of analyzing the comparisons, as well as addresses the imbalance of these comparisons on the whole. I focus on academic literature, using popular sources sparingly when they function as extensions of points made in the academic literature. Information is drawn from a sample of forty-five peer-reviewed articles focused on IVM from both proponents and opponents. Papers were obtained by searching the terms “in vitro meat” and “cultured meat” in ProQuest. The main questions asked are (1) if IVM and vegetarianism are admittedly so similar, why do IVM advocates spend so much effort trying to normalize the radical idea of eating lab-grown meat instead of helping to normalize plant-based eating, and (2) within comparisons, why is IVM given disproportionate emphasis as more practical than vegetarianism?

Definition of terms and status of IVM

In this article, I examine a variety of dietary approaches to eating meat. Accordingly, for both convenience and clarity in analysis, various terms are used to separate certain distinctions. I use the term “traditional meat” (or simply, meat) to denote flesh cut from a once-living animal and is to be considered distinct from IVM. In vitro meat is also taken to be animal flesh but is differentiated from traditional meat in that it did not come from the body of an animal but was

grown in a lab, synthesized out of animal-derived cells (the process is outlined below). Except when called out specifically, vegetarianism is also meant to encapsulate veganism. Vegetarianism refers to a diet consisting of no animal flesh but may contain animal products such as milk and eggs; veganism is a diet where all animal products are avoided. ‘Plant-based meat’ refers to meat replacements that are fashioned out of plant materials in order to resemble traditional meat in one or more ways, e.g., in look, taste, texture. Plant-based meats can be of various compositions. Some consist of mostly a single plant material such as tofu, seitan or tempeh. Alternate forms can be pieced together from various macromolecules (lipids, carbohydrates, proteins, etc.). A final version of plant-based meats may contain some animal products such as eggs or milk in addition to plant material. I also use “mock meat” to contrast this from traditional or in vitro meat. It is also useful to provide two collective distinctions. IVM and traditional meat are taken to be animal-based, and as such are grouped as “meat options,” whereas all plant-based diets, being devoid of flesh in their production process, are together referred to as “meatless options.”

Meatless options are related to each other, yet there are also distinctions. They are related in that they all involve a conscious effort to refrain from eating animals, albeit for a variety of reasons. Plant-based meat alternatives are also already vegetarian. But these options can be distinguished from each other because among vegetarians there is great diversity regarding motivating factors. In addition to the killing and cruel treatment of animals, some ethics-based vegetarians also disavow the symbolism of meat, whereas health-based vegetarians may freely consume plant-based meat substitutes precisely because of how they retain certain traits of traditional meat. A further degree of separation between mock meats and vegetarianism might be that mock meat could constitute its own industry in need of development (flavor, texture, new products, etc.), whereas vegetarianism would only be in need of expansion of current systems with

negligible if any development needed.

While two categories ('meat' vs. 'meatless') are presented in opposition to simplify matters, the options contained within these categories might be thought of more accurately as points along a continuum reflecting the intensity of one's meat eating. Vegetarianism would be located on the far end of non-animal consumption (with veganism being a further offshoot), followed by plant-based meats due to their association with traditional meat. IVM goes a step further in claiming to be actual animal flesh derived from actual animal products but without (killing) an animal. Lastly, traditional meat sits at the other end of the spectrum. Within traditional meat, there would also be two subcategories. Just like veganism is a more intense vegetarianism, the procurement of meat could be from either non-industrial ('humane' farms, hunting, etc.) or industrial sources, with the latter being a more intense version of the former. People may choose to consume meat anywhere along this spectrum and in varying amounts. Assuming IVM becomes viable, individuals may partake from all categories, or shift from one category to another, which could be used as a mechanism to transition toward veganism. Figure 1 illustrates this model.

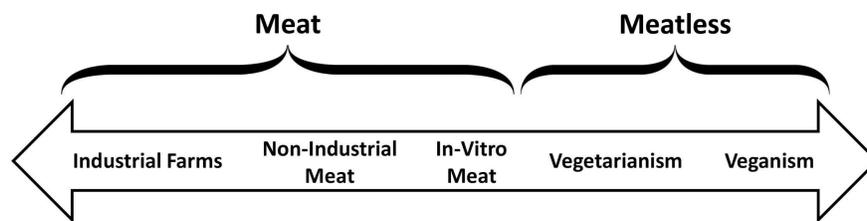


Fig. 1: Visualization of meat continuum. Image courtesy of Chris Polakowski

As IVM is still an emerging technology, a brief overview of the IVM production process is helpful. Currently, the most common approach begins by obtaining animal stem cells via biopsy of a live farmed animal. For culturing meat, the ideal cell type would be muscle cells, which are then isolated from a sample and grown within fetal calf serum (a derivative of calf's blood) culture. The culture may be able to have its nutritional content manipulated to the extent that the

nutritionally negative qualities of traditional meat are removed and replaced with vitamins. The serum acts as a source of food for the cells. Cells adhere to a scaffolding mechanism which is used as a growth platform. Finally, induced structural changes create a form that is the basis of IVM products (Bhat, Kumar, & Fayaz, 2015; Pandurangan & Kim, 2015; Datar & Betti, 2010).

Currently, IVM only exists in negligible quantities. It is still more of an idea than a reality. However, with enough research and development, “a single muscle cell extracted from a living cow, for example, could in principle produce enough meat to satisfy the annual world demand for beef” (Pluhar, 2010, p. 463). On the other hand, ‘alternative proteins’—proteins derived from sources other than traditionally farmed animals, including predominantly vegetarian alternatives—are already growing exponentially (Lux Research, 2015). The difference here is that vegetarian food exists in abundance, whereas the IVM scenario is almost entirely theoretical.

The major argument that proponents of IVM use is to position it as an alternative to traditional meat. Indeed, disproportionately, IVM is positioned as *the* alternative to meat. For example, food scientists Pandurangan and Kim (2015) provide a brief survey of the harms of industrial animal agriculture which leads them to conclude “Therefore, these factors may force conventional meat producers to search [for] better alternate sources” (Pandurangan & Kim, 2015, p. 5392). The plural “sources” is used here, hinting at multiple possibilities. However, in the very next sentence, which begins their formal introduction to IVM, the authors present IVM as the only alternative: “Culturing meat in the laboratory is *the* possible alternative for conventional meat” (Pandurangan & Kim, 2015, p. 5392, emphasis added).

The “only choice” argument presented above is pervasive. Jonsson (2016) describes this rhetorical approach as two-pronged: “On the one hand, conventional meat is repeatedly framed as unsustainable... The other pillar, thereafter, asserts the necessity of *some* meat. Meat, IVM

proponents argue, is inescapably desirable” (p. 734). Thus, the literature presents an oversimplified choice between *meat* with animals, or *meat* without animals. Dilworth and McGregor (2015) remind those who argue IVM is the only alternative to traditional meat that “adopting the consumptive path down which IVM lies is still a choice we must make, not a foregone conclusion” (p. 104).

A final term to define is ‘speciesism,’ or the prioritization of human interests over those of other species by virtue of some supposed human uniqueness, and privilege due to that uniqueness.

Comparisons between meat and meatless options

Many comparisons between IVM and vegetarianism have been made by both IVM proponents and opponents. Schaefer and Savulescu (2014) draw one of the most explicit and intriguing parallels. By way of a consequentialist ethic, they propose an equation of two moral courses of action that would achieve essentially the same ends: “If the standard factory farm were replaced by IVM laboratories, this would have more or less the same effect of reducing animal suffering and/or slaughter as converting everyone to vegetarianism” (Schaefer & Savulescu, 2014, p. 189). In a practical ethical stance, the authors equate the development and widespread adoption of IVM with vegetarianism by focusing on the relative amounts of harm to animals that could be alleviated or eliminated. In another case, under a brief section entitled “Vegan meat,” Bhat and Bhat (2011) also equate the ethical endpoint of IVM and vegetarianism by stating that “In vitro meat being free from all the vicissitudes of animals may be suitable for people who are vegetarians due to the ethical reasons” (p. 244). Apparently, the authors assume that since IVM is *essentially* (but not completely) free of animal use, that it would be considered acceptable by a vegan or vegetarian. However, animal flesh is still being consumed and current methods use calf’s blood in the growth serum, facts many vegetarians and vegans would find off-putting.

In a similarly striking connection that draws meat and meatless options closer together, Dreissen and Korthals (2012) claim that IVM has been motivated by something akin to vegan (as opposed to merely vegetarian) concerns: “microbiologists involved in researching and developing in vitro meat attempted to create meat without causing any animal suffering, and claimed to worry about even the least infringement of animal bodily integrity” (p. 810). Even if IVM producers do not match the profile of what most people consider ‘typical’ vegans, “In vitro meat is thus arguably the first instance of an in vitro tissue culture application in which ethical considerations for animal rights are an integral basis for the development of the field” (Alexander, 2011, p. 46). By offering a revolutionary landscape in which animals are replaced in the manufacture of meat, Cole and Morgan (2013), writing from a critical animal studies perspective, note in their article that is otherwise decidedly skeptical of IVM that “IVM aligns itself most closely with the holistic claims of advocates for veganism” (p. 209). The goals of IVM researchers and their methods are at least largely vegan even if the term is not explicitly used or if researchers do not personally claim vegan aspirations. This comparison is at least partially confirmed in terms of motivation through interviews with IVM researchers. One senior team leader explicitly declared: “[Animal liberation] is a very high motivating factor for me,” while another researcher admits, “I think we should be eating plant-based proteins (Stephens, 2013, pp. 172, 174). Furthermore, by pursuing animal-free culture mediums (Jones, 2010), except for the initial harvesting of animal cells, IVM production methods aim to be nearly absolute in vegan aspirations.

It is worth noting that pro-IVM arguments rely heavily on ethical and moral articulations, just as do many vegetarians. A theme emerging from pro-IVM literature is that given its revolutionary potential to relieve immense and daunting global issues like environmental degradation and animal suffering, it may be ethically consistent with most people’s concerns about

these issues and therefore a moral imperative to accept and support IVM production. Van der Weele and Driessen (2013) summarize the emergence of IVM as more of a moral push than a technological one, while Van der Weele and Tramper (2014, p. 296) state that “cultured meat has great moral promise.” Hopkins and Dacey (2008) rely heavily on the moral aspect of IVM throughout their paper “Vegetarian Meat: Could Technology Save Animals and Satisfy Meat Eaters?” as an option that even vegetarians should support if suffering and death are elided. Hopkins and Dacey (2008) stress that vegetarians actually have the most to gain from eating cultured meat by claiming that moral vegetarians “have a greater opportunity ... to reduce [farmed animal] suffering” (p. 595). But this reasoning is problematic; vegetarians already reduce animal suffering by not eating meat. It is not clear how ‘adding in’ IVM would help.

In general, the moral argument is brought forward largely by focusing on the benefits IVM could provide for the environment and farmed animals. Health considerations do not play as significant a role in comparisons. In particular, people who do not eat meat are appealed to by focusing more on the treatment of animals raised for/as food. As Josh Milburn (2016) explains, if we accept that the unnecessary killing and induced suffering of nonhuman animals for food presents an ethical problem, as is the basis for many who abstain from meat consumption, “we should, first and foremost, be concerned with eliminating the death and suffering inherent in the production of [nonhuman animal] derived foodstuffs. This would be possible through universal veganism, but the adoption of [lab-grown flesh] technologies represents another possible path to this goal” (p. 11). Peter Singer (2013), the famed animal and food ethicist, takes the same position: “There are important ethical reasons why we should replace animal meat with in vitro meat ... The first is to reduce animal suffering.” Pluhar (2010) reaches this conclusion reasoning that ethically, in terms of harm done by animal agriculture, vegetarianism is the best alternative to industrial

sources, and “potentially” IVM as a secondary option (p. 466). Similar to those who support non-industrial sources of meat out of an abhorrence of the violence of industrial facilities, those who also realize the problems associated with non-industrial meat sources commonly advocate IVM as a moral alternative to meat from animals. This is a consequence of “eating meat... losing moral credibility in many affluent societies” (Van der Weele & Driessen, 2013).

Just as Milburn acknowledges veganism as another suitable moral alternative to traditional meat, several authors who advocate IVM for moral reasons follow suit and at least mention vegetarianism as another means to a common end. This comparison is not necessarily a problem in itself, per se. A logical problem arises, however, when in vitro proponents acknowledge similarities but go on to posit IVM as the only reasonable choice between IVM and vegetarianism. Other options exist as well. Instead of favoring IVM, IVM and vegetarianism could be considered equals in fulfilling the same purpose of counteracting the harms of traditional meat. Or, advocating for vegetarianism over IVM could just as easily be the favored position instead.

As a final point, Bhat et al. (2015) state that “a radically new way of obtaining meat, namely animal-free meat, is probably feasible with the newly proposed *in vitro* meat production” (p. 241). However, as companies like Beyond Meat argue (and show with their products), animal-free meat could easily—if not more easily—be entirely plant-based. If authors like Bhat et al. are willing to speak in the language of the “radical,” then it is reasonable to ask why is vegetarianism not also entertained, when it too has been viewed as radical? Not doing so likely discloses a concern with profit and reputation of those with a stake in producing a novel product. That IVM advocates declare meat necessary, suggests specific values regarding human dominance over nonhuman others.

The downplaying of existing meatless options

To be sure, IVM proponents who insist IVM is the only alternative to traditional meat do frequently recognize vegetarianism as a legitimate personal choice, but only insofar as vegetarians exist and their diet is medically supported. By and large, IVM proponents downplay the practicality of vegetarianism as a *feasible* option for addressing the environmental problems of meat consumption, precisely because of the speciesist notion that vegetarianism does not include meat. This reflects Melanie Joy's finding that meat is often portrayed as natural, normal, and necessary (Joy, 2010). Carrie Freeman, in discussing the role of compromise in animal advocacy, maintains that "[s]peciesist social norms allow for nonhuman animals' lives and freedoms to be routinely compromised in resolving any conflicts; thus, defending animal rights (such as veganism) is perceived as 'unreasonably' absolutist and inflexible... implying that it is the animal rights movement which needs to compromise its principles" and not the meat-eating majority (Freeman, 2017). Stephens (2013) encounters this mentality in multiple forms through interviews with IVM proponents from within both the IVM industry and animal protection. He summarizes the "IVM only" position as "a trade-off between the ideal and the practical, based on a problematization of veganism" (p. 175). It is important to note here that the position of IVM proponents regarding farmed animals is one of *welfare*, not rights. IVM researchers do not speak of farmed animals having a right to exist apart from being a source of meat. This stance reflects speciesist values behind IVM discourse that slights vegetarianism.

One way vegetarianism is downplayed is by leaving vegetarianism out of the discussion entirely. A large majority of papers on IVM research offer only IVM in opposition to traditional meat creating the above-mentioned dichotomy of *meat* with animals or *meat* without animals. Vegetarianism is made to appear impractical by asserting that it would be too difficult to convince people to give up eating meat, leading IVM stakeholders to dismiss the idea. Any vegan activist

will no doubt agree as to the difficulty of changing others' diets. Yet vegans, whether activist or not, will likely also be privy to the fact that eating vegan is becoming exponentially easier and tastier than ever. And vegetables already exist. Cole and Morgan (2013, p. 215) put it simply: "plant-based diets are cheaply and widely accessible to consumers now—not decades into the future."

So why is there so little focus on promoting meat-free diets within the IVM literature? The primary response is that it is not feasible to expect such a shift in diet, at least not without massive and concerted education efforts (Hopkins & Dacey, 2008; Pluhar, 2010). This does ring of some truth given the sense of identity that often accompanies certain foods. In their overview of the sociology of food, Guptill et al. (2013) explain that even with a milder shift than to vegetarianism (such as to an organic diet), "moving from conventional to alternative diets entails a challenging shift in identity" (p. 113). For instance, with black communities, Christopher Carter (2016) discusses maintaining *soul*, a word used by blacks to denote the strength of their ability to persevere and adapt to hostile social environments. Part of the meaning of this identity is construed through certain food and music types deemed "soul music" and "soul food," the latter of which often centers around meat. Carter (2016) asserts that black identity embodied by 'soul' would need to be preserved when attempting to shift the diets of African Americans to a more plant-based one.

While maintaining or altering identities may be difficult, many IVM stakeholders appear to not want to attempt even a gradual shift, offering IVM as the only and final word on traditional meat alternatives. Hopkins and Dacey argue this point plainly: "veganism is not a live option for actual human societies as they now stand and the real choice is therefore between cultured meat and slaughtered meat" (2008, p. 593). Hocquette (2016) offers four alternatives to IVM, including vegetarianism (with mentions of veganism). However, the meatless route is overshadowed in that

the other three options consist of animal-derived meat. Hocquette (2016) further plays down the feasibility of meatless diets by citing problems with acceptance and potential health issues. He ends his paragraph on vegetarianism by citing medical evidence that diets including various meats and dairy products would remedy these obstacles, further implying the implausibility of vegetarianism.

What makes the argument of IVM over vegetarianism especially curious is that, as quoted from Cole and Morgan (2013) above, mock meats are already available, and vegetarianism is an established and growing, though still marginal, lifestyle. Nevertheless, IVM fails on both of these accounts. One wonders how much more effective a vegetarian education could be if the resources being channeled into developing IVM were instead directed toward meatless options, i.e., using IVM's ethical and emotional appeals to encourage the normalization of vegetarianism. While research into the development of IVM is gaining traction, other plausible meatless solutions already exist and are gaining momentum. In the UK, the number of vegans has risen by 360% in the last decade (Quinn, 2016). And globally, “[p]lant-based meats and eggs are poised to take over one third of the market by 2054” (Donaldson, 2016, p. xvii). Saadullah Bashir (2016) has compiled an admittedly non-exhaustive list of in vitro and plant/culture-based companies from throughout the world for meat, dairy, eggs, butter, honey and other animal products. His list includes 64 plant-based (that is, at least vegetarian friendly) animal products, restaurants, ‘butchers,’ and whole meal replacements. This can be contrasted with four IVM companies listed. This stands at a 16:1 plant-to-IVM ratio. This ratio decreases to still near 6:1 if we compare the plant-based meat companies to in vitro companies on Bashir’s list.

The supposed impracticality of vegetarianism can be questioned still further by widening our scope and noticing the recent trend of restaurants throughout the United States adding

vegetarian and vegan products to their menus. Plant-based animal product replacements can also be found to occupy an ever-growing share of many grocery stores lead by companies like Gardein, Morningstar, and Beyond Meat. Especially pertinent may be the proliferation of coffee shops that now offer a nondairy milk option, such as Starbucks and Dunkin' Donuts, which could be used in beverages to 'veganize' just about any drink option. Many family style American restaurant chains are also adding vegetarian hamburgers to their menu. In the case of the nationwide chain Red Robin Gourmet Burgers and Brews, the restaurant offers a house-made vegan burger patty (<http://www.redrobin.com/menu>). Such meatless options often center around protein, but there are also many varieties of non-meat-like proteins that vegetarians eat, such as legumes (tofu), beans, nuts, seeds, and whole grains. Many vegetables have protein too, and some vegetarians do not concentrate on "protein" but rather try to eat a diversity of healthy foods to meet their nutritional needs. All of this would tend to suggest that the feasibility of encouraging the proliferation of meatless options might be more significant than IVM advocates claim.

While IVM may bear *some* resemblance to vegetarianism, it is not identical. Even if animal-free sera can replace fetal bovine serum, "the practice of getting cells from a living animal is not one that the field hopes to replace with a nonanimal-sourced alternative; instead, these nonhuman animal cells remain the essence of IVM technology" (Stephens, 2013, p. 167). In other words, IVM appears to necessitate a view in which animals are viewed as a source of meat. Ethics-based vegetarians do not view animals this way. This sentiment illustrates a poignant difference: whereas historically, veganism was designed, and for many continues to be, an explicit rejection of hegemonic and exploitative paradigms, IVM can all too easily function as merely an extension of current carnist systems and ideology without any real transformative potential. The field of animal science is dedicated to finding out how to maximize meat and other animal product

extraction from animals in the most efficient way. IVM may represent the limit of such efficiency. As stated by Driessen and Korthals (2012, p. 802), the technological prowess of IVM “takes this development in agricultural production to its logical conclusion” as it aims to create “meat production without animals. This is currently the aim of various research and development projects on ‘in vitro meat.’” Since IVM advocates focus on minimizing animal suffering as a way to convince vegetarians of its moral potential, vegetarianism may hold more promise than IVM because it dispenses with the captivity of farmed animals all together, eliminating even the possibility of their suffering.

The silencing of vegetarianism

In this final section, several strategies of how vegetarianism is silenced by IVM advocates are briefly discussed. In the most extreme case, vegetarianism is silenced by being left out of the discussion entirely. In this sense, silencing goes beyond devaluation and often refers to non-consideration. The following two observations of subtle yet substantial omissions serve as primary examples. First, given the tight comparisons between vegetarianism and IVM, it is curious that not a single article by an IVM promoter suggests a vegetarian diet *even just until* IVM becomes available, as a way to jumpstart reducing environmental and animal harm. Also absent are any suggestions that meat eaters could use IVM as a stepping stone toward vegetarianism; yet plenty of papers suggest vegetarians could—and should—consume IVM as an ethical approach to animal suffering as evidenced by the monikers “vegetarian meat” (Hopkins & Dacey, 2008) and “vegan meat” (Bhat & Bhat, 2011).

Since IVM arguments are motivated primarily by concern over environmental and animal ethics (as opposed to human health), and if the outcome is admitted being comparable if not equivalent to vegetarianism, the absence of a concomitant push for vegetarianism by IVM

stakeholders, at least in the interim or as a side campaign, is striking. Either of these options would seem like a pragmatic approach if the goal is to reduce environmental and animal harm as quickly and by as much as possible. It is hard to imagine any moral reason why IVM researchers may not (at least professionally) promote vegetarianism aside from the potential financial and prestige benefits of commercializing IVM or the impracticality of switching to vegetarianism, which was already problematized above.

Thus, based on the stated objectives and appeals made by IVM proponents, a call for vegetarianism in some form should logically accompany advocacy for IVM. According to Carrie P. Freeman's (2014) analysis of animal advocacy strategies, she suggests "ideal messages" should be put forth "that both culturally resonate with people and openly ask for the kind of radical change in speciesist worldview that is necessary to promote all animal rights issues in the long term" (p. 18). I see a direct application of this sentiment to IVM: if ethical vegetarianism were added to the IVM discourse, the IVM appeal to 'humane' meat would likely resonate culturally while a simultaneous encouragement of vegetarianism would encourage radical change. This dual message approach could help to gain some ground in the short term as both a meat *and* meatless option would be put forward which, together, should appeal to the widest possible audience.

Arising from workshops held at two conferences on ethics and technology, Van der Weele and Driessen (2013, pp. 655-7) discuss the "pig in the backyard" approach to IVM source animals. The model envisions a relatively small number of pigs (or cows) retained by a community from whom cells are extracted periodically for local IVM production. Proponents of this model see this as fostering "conscientious" relations with animals who are commonly eaten. However, Van der Weele and Driessen (2013) explicitly discourage veganism in favor of this proposal. Their rationale is that "urban vegans are completely separated from nature and from

animals” (p. 656). This justification implicitly acknowledges that veganism is comparable to IVM in some fashion, otherwise denouncing it would be unnecessary. It is important to stress, also, that this is merely an *implicit* comparison. In their paper, there is no mention as to why veganism is brought up simply to be hastily discarded as an alternative, such as veganism may also achieve the very same ethical goals of IVM. In neglecting to mention that, on the contrary, many vegans consider their avoidance of animal consumption to constitute a significant relationship to the more-than-human world, this comment could only serve to silence veganism. By calling the backyard model “conscientious,” and then immediately referring to veganism as “bleak,” the authors imply that envisioning a relationship with animals in which they are not eaten is undesirable and should be avoided. The idea that veganism could have any positive contribution to IVM or the problems it is supposed to solve is entirely absent.

Another example is a paper by Patrick Hopkins (2015) in which he sees fit to argue that IVM promoters should pay little attention to the vegetarian viewpoint on meat. Hopkins (2015, p. 8) states: “Even if it were important demographically to appeal to vegetarians to support cultured meat, understanding the motivations behind vegetarian diets would suggest diminishing returns in promoting cultured meat’s benefits.” Missing is the suggestion that vegetarianism could be promoted in conjunction with IVM in a symbiotic fashion. By deeming vegetarians negligible, Hopkins suggests that the development of IVM should hardly, if at all, be influenced by this alternative view. Hopkins concludes his paper by saying: “To work toward their stated goals of improved environmental impact, improved food safety, and reduced animal pain, [IVM promoters] should focus on [convincing] meat eaters [to eat IVM]” (2015, p. 14). Perhaps this is true. However, with these same goals, they might also work towards persuading meat eaters to stop eating meat. Instead, the absence of this suggestion silences vegetarianism.

Further examples of silencing can be found in comments made by IVM researchers during interviews. The first concerns the closest approximation to public promotion of vegetarianism amongst IVM supporters and is found in the words of Mark Post, creator of the in vitro burger publicly tasted in London in 2013. During an interview concerning this event Post commented: “Vegetarians should remain vegetarian. That’s even better for the environment” (quoted in Hopkins, 2015, p. 4). What this comment does is simply suggest that those who are vegetarian should remain vegetarian. It does not suggest non-vegetarians could or should *become* vegetarian even though IVM is admitted to be (at least environmentally speaking) inferior. Even though Post mentions vegetarianism directly, he does so in a way that suggests leaving vegetarianism out of any ongoing or future discussions in which IVM is involved. Highlighting vegetarianism as a viable option would give people a choice of how to live their values and help to normalize plant-based eating. But Post’s comment effectively implies IVM is the only choice for existing meat-eaters and could easily contribute towards silencing vegetarianism.

Silencing is also exhibited in the words of Vladimir Mironov, an early figurehead of IVM research, when he said in an interview for *Discover* magazine that IVM is “the inescapable future of humanity” (Stone, 2017). Calling it “inescapable” rules out possibilities of not consuming flesh under an apparent assumption that humanity will inevitably always eat meat. But clearly, meatless options are ways to avoid IVM. This unsupported comment implicitly silences vegetarianism by neglecting to mention it as an existing (rather than future) means for accomplishing the very things for which IVM is asserted to be necessary.

Conclusion

Both IVM and vegetarianism address similar issues with meat by claiming to reduce or even eliminate problems associated with farming animals for food. This similarity has not gone

unnoticed by either IVM or vegetarian proponents. However, the attention given to this comparison is asymmetrical. IVM proponents nearly universally disparage the vegetarianism argument as impractical, whereas some vegetarian proponents enthusiastically advocate IVM if it helps achieve the same ends as vegetarianism. Both sides claim pragmatism as their justification. The uneven discourse on IVM could be interpreted as co-opting ethical approaches to meat-free diets and lifestyles “since now ‘vegan’ could encompass the active endorsement of biotechnology produced animal flesh rendered purely for human consumption” (Stanescu & Twine, 2012, p. 7). Further, IVM presents an oversimplified picture of two extremes for farmed animals: either intense industrial confinement, or manipulation of the basic components of animal life. IVM does not seem to allow for a scenario of noninterference.

Given the precarious situation of the planet, we may need a combination of the public being encouraged to eat fewer animal products in addition to IVM. For those who do eat some meat (or if some is needed to keep omnivorous and carnivorous nonhumans in captivity alive), IVM could be a way to avoid exploitation and killing and mitigate environmental harm. IVM can be further complicated through (dis)ability when there may be crucial biological impediments to vegetarianism (such as allergies), or even life-or-death decisions which may require individuals to consume meat (or other animal products) (Griffin 2017, pp. 84-89; Taylor 2017, p. 200). IVM may be a helpful and ethical alternative in these instances.

The comparisons between IVM and vegetarianism highlight how both aim to mitigate, eliminate, or even reverse the harms of animal agriculture. However, IVM relies on the continued consumption of meat. Meatless options forgo reliance on meat, likely being a stronger contender for creating radical systemic change. The comparisons between IVM and vegetarianism strike at the heart of socio-cultural values and create a complicated interplay between short- and long-term

gains. “Ultimately, it is a debate about how we humans of the 21st century live, and are going to live, with other animals, the environment and ourselves on this planet.” (Strand, 2015, p. 85).

Acknowledgments: I would like to thank Chris Polakowski, graphic designer and presentation specialist for General Motors, and family friend, for designing and lending me the double-arrow image.

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BOOK REVIEW

Castricano, J., & Simonsen, R. R. (Eds.). (2016). *Critical Perspectives on Veganism*.

Springer. \$99.99 - Hardcover, \$69.99 - eBook. 400 pages.

Nathan Poirier

What might the importance be of a book that further complicates veganism, an already complicated social phenomenon? Why be critical of those who are already willing to take a major step toward reducing harm towards non/humans by doing their best to avoid eating or otherwise using animals and animal products? According to Jodey Castricano and Rasmus Simonsen's edited collection *Critical Perspectives on Veganism* (hereafter *Perspectives*), critical perspectives are necessary because veganism is gaining popularity in the West at an exponential rate. This is concomitant with a growing stigma of animal products resulting from increased awareness and distrust of animal consumption practices. Thus, "[i]n following the focus on veganism in mainstream culture, a central question of this volume is whether the trend toward normalization strengthens or detracts from the radical impetus of veganism as a politics" (p. 2). *Perspectives* critically reflects on current vegan praxis as compared to its origins and potential futures.

For nearly all of its history, veganism has been marginalized with a relatively small number of adherents from the West. Thus, when someone historically identified as vegan, they were viewed as radical. As its newfound popularity challenges the true radicalism of veganism, we are left wondering how something that is normalized by society can still be radical? Thus, as veganism carves out a larger share of the public sphere—just as art made viewable to the public can lose its ability to convey the artist's intended meaning—can veganism lose control of its transformative power? As the popularity and, hence, the number of people identifying as vegan continue to rise, if something akin to a 'personal choice' mantra wins out over the social justice mantra, veganism

could become a ‘soft’ version of its former self, losing its ability to demand systemic and fundamental change. This is analogous to the dilemma Steven Best laments with regard to animal studies increasingly capturing public and academic attention whilst losing its critique of structural social systems that maintain oppression (Best, 2009).

A related but distinct secondary question also central to the text is, how much of an ethical or ideological compromise might be appropriate when advocating for veganism? For instance, it should not be considered acceptable for veganism to gain its popularity by relying on the general ‘whiteness’ of most of its adherents at the expense of people of color, as in the simultaneous appeal and offense of *Thug Kitchen*—a topic which is tackled by two essays in this volume. But then we might consider A.G. Holdier’s essay which consolidates human-focused harms of industrial animal agriculture into a speciesist argument for veganism. His justification is grounded in pragmatism and efficacy as anthropocentric arguments often hold the most sway in garnering support on animal or environmental justice issues. Without a doubt, quick and significant change for many current events is needed. But a speciesist argument would likely lose much radical potential, at least in the long term, as it creates a narrow field of vision and further reifies human superiority, something veganism is supposed to explicitly and forcefully reject. Thus, vegans are left to critically reflect on what is the best way to move forward.

Veganism, while often misconstrued and portrayed in an oversimplified form—as in a diet that merely abstains from eating animal products—is exceedingly complex. While there are multiple benefits of living vegan—health, environmental, ethical and moral consistency—there are also some drawbacks, mostly social and cultural backlash against practicing individuals. This often manifests itself in stereotypes and defamation of those willing to attempt the lifestyle in a manner of social (that is, institutional) bullying (Cole & Morgan, 2011; Taylor, 2012).

Perspectives informs the reader that this backlash often results from two sources: either misrepresentation or refusal of others to listen, both of which can result from and be perpetrated by the actions of vegans themselves. Much of this may be inadvertent through well-intentioned media outlets such as blogs or cookbooks written to attract people to lifestyle, or through personal encounters where vegans can come off as condescending to both non-vegans and fellow vegans alike. Regardless, the way vegans promote veganism can and have at times hindered the movement by contributing to the oppression proponents often face. This is another niche *Perspectives* fills; it serves as a (partial) self-check for vegans trying to promote the lifestyle so that as veganism grows, it does so in a way that is not at the expense of others or other causes, or detract from the movement on the whole. From an intersectional viewpoint, these two problems are different sides of the same coin.

Perspectives brings together sixteen essays organized into four broad sections that together represent a well-rounded picture of veganism. The sections are: Ethics, Politics, & Philosophy; Aesthetics & Representation; Food, Memory, Histories; and New Media is the Message. The first section provides most of the theoretical entries in the volume, whereas the other three focus more on how veganism is being or could be applied in various parts of society. A number of the essays do not look at veganism directly but instead focus on the majority of whom eat meat and follow a carnist lifestyle. As Joy and Tuider state in their forward, “Understanding carnism helps one understand not only veganism.... It also helps one understand how to maintain and even bolster the growth of veganism” (p. vii). Since veganism is positioned as the polar opposite of carnism, it may be wise to investigate carniculture for veganism to maintain internal consistency. For instance, if carnism is seen as violent, then vegans would do well to repeatedly assert that their lifestyle is nonviolent, and act accordingly. The latter part may sometimes be the more difficult of the two,

but grappling over how to keep actions in line with beliefs is what *Perspectives* can do to help vegans stay engaged.

Robert C. Jones's essay is an obvious choice to serve as the book's opener. Jones frames veganism as aspirational rather than a well-defined endpoint. Within this framing, the emphasis on effort—intentional, honest effort according to one's ability. In this way, as long as one is purposefully trying to refrain from harm to the extent that they are able, one is following the vegan ethos. This applies even if circumstances surrounding particular aspects of one's life preclude certain options such as accessibility to shopping centers that carry a wide variety of healthy plant-based foods. The aspirational approach can contribute toward dismantling the moral hierarchy supported by some vegans and detested by many carnists. Jones's essay reflects the complexity of a vegan lifestyle. Indeed, it highlights that veganism *is* a lifestyle that purposefully acts against violence—personal or institutional—and is not just a simple, one-dimensional personal choice. Dissolving the moral divide of vegan vs. non-vegan into more of a smooth continuum creates many in-roads to veganism instead of just one. This viewpoint could have significant potential for creating a welcoming, non-judgmental atmosphere where non-vegans—even carnists—might then be more willing to engage in open-minded dialog with a vegan. Furthermore, it also reaffirms veganism's intersectional approach to oppression.

A standout essay is Margaret Robinson's chapter "Is the Moose Still My Brother if We Don't Eat Him?" Robinson confronts potential cultural repercussions of in vitro meat; a consideration left completely silent in the literature promoting the technology. As an Indigenous Mi'kmaq person and scholar (in addition to being vegan), Robinson informs us that the Mi'kmaq relationship with the moose is an ancient one that is based on mutual respect and protection between the Mi'kmaq and moose as a species. This relationship sits at the heart of Mi'kmaq culture

and identity as the Mi'kmaq consider the moose as relatives. Moose offer their lives in order to provide the Mi'kmaq with life-sustaining meat, and the Mi'kmaq reciprocate by treating moose (both living and dead) with respect by using every part of a corpse and hunting only as much as necessary, in addition to protecting moose habitat. Robinson asks how her people's cultural identity could change if moose meat can be acquired by in vitro means, foregoing the violence of the hunt. She concludes that the relationship could become strengthened because the tension between the Mi'kmaq and the moose over the violence of killing could be lessened, yet the moose can still 'donate' to the Mi'kmaq in the form of cells, continuing the ancestral and spiritual bond.

From her vegan perspective, this is an interesting stance on in vitro meat since she supports utilitarian uses for animals along with consumption. John Miller (2012) has argued that the vegan (and vegetarian) rejection of in vitro meat is necessary to retain its radical political potential. This gives rise to a debate: Is in vitro meat a practical and effective means of consuming animals (at least in some cases) in order to respect cultural practices, or even the environment and animals themselves? Alternatively, must in vitro meat be rejected in all circumstances—without exception—in order to protect the integrity of veganism?

As a vegan, Robinson is not interested in personally trying in vitro moose flesh, if it were to exist someday. Given this, it is a curious question as to how the Mi'kmaq identity (or other cultures with similar beliefs) might be affected by being vegan and not eating animal flesh at all. How does Robinson reconcile her own apparent personal discrepancy? After all, Robinson laments that her people are increasingly purchasing moose meat from grocery stores instead of by hunting—a consequence of white colonialism—because the mass-market venues are wasteful and destructive. So, if it is important to worry about purchasing moose meat in a way that diminishes the Mi'kmaq-moose relationship, what about not consuming moose at all? This question is relevant

as vegan Mi'kmaq exist (e.g., Robinson) but there is no in vitro moose meat seemingly even in the research pipelines. This is a significant consideration for those who discuss and promote global *ethical* veganism. To insist that the Mi'kmaq should abandon their centuries-old practice of consuming moose meat would also entail destroying their lifeway and main sense of identity, something white settlers in the traditional Mi'kmaq area (south-eastern Canada and the north-eastern U.S.) have done ever since their arrival to the region. Thus, to adopt this viewpoint uncritically would be insensitive. For vegans to effectively support meat eating in situations like that of the Mi'kmaq, this could potentially co-opt the meaning of 'vegan' as one who supports at least some human consumption of animal flesh, as well as risk decoupling veganism from its wider intersectional scope.

The strength of this collection lies within the essays that examine how veganism is currently becoming mainstreamed and/or attacked by the mainstream. *Perspectives* covers a multitude of ways veganism (sometimes vegetarianism) is being portrayed by vegans, vegetarians, and carnists through various media. Essays explore the popularizing of veganism through blogs, cookbooks, and television shows (both culinary and sitcoms), which represent some of the most popular channels of dissemination of societal norms and practices. In the growing presence of veganism in various media outlets, as well as the massively increased variety of animal-free food products, the rise of veganism is reflected.

Although not in the section formally dedicated to examining veganism in the media (Part IV, 'New Media is the Message'), Jessica Carey discusses popular vegan cookbooks with specific regard to cultivating nostalgia. This strategy, through examples in books by Isa Chandra Moskowitz, is a deliberate attempt to co-opt the carnist narrative which commonly relies on fond memories of "back then"—special moments in our past that were often accompanied by animal

products, moments where consuming animal flesh may have impacted our identities in ways we consider meaningful and positive. Veganism has largely relied on rational, ethical and moral persuasion arguments about current situations to bore its way into the collective consciousness of societies. To successfully proliferate, Carey argues, it will also need to tap into our histories so that veganism becomes attached to feelings of belonging which can then be passed down in cultural stories, creating a future that is an extension of the memories of our vegan “good old days.”

As mentioned above regarding race and *Thug Kitchen*, ethics in vegan promotion are sometimes sacrificed or downplayed in order to garner appeal. Ophelie Veron’s chapter shows how vegan food blogs help foster a sense of community which is increasing the popularity and acceptance of veganism. Blogs not only help to reach out, but also provide a space where vegans can find reassurance and inspiration, which can help strengthen the core of the movement. However, if this is done at the expense of ethical considerations of justice, structures of exploitation and oppression can remain unchallenged and therefore unchanged. This approach may help to win over individuals, but it will likely not change societies. Veron argues: “Because veganism is first and foremost an enacted way of opposing speciesism and other ideologies of oppression, ethics should always be kept at the forefront of the vegan movement” (p. 302). By explicitly maintaining a staunch foundation of ethics, veganism can retain its revolutionary edge. Popular blogs tend to focus on recipes but do not necessarily emphasize the ethical reasons underlying the inspiration for those very same recipes. Ultimately, downplaying vegan ethics may not be the optimal way for the movement to grow.

Critical, self-reflexive thinking is not always (or even usually) a comfortable thing to do. Nonetheless, veganism is a lifestyle, so critical reflection should attempt to include every component of that lifestyle. To refer back to Jones’s essay once more, this should include the

choice to have children. Jones elucidates how too many vegans, even while mitigating all achievable aspects of non/human violence at both personal and institutional levels, can still significantly contribute to resource depletion, species extinctions, and environmental collapse by sheer numbers. It is to Jones's credit that he raises this controversial point precisely because it is a curious omission in much of the vegan discourse generally. Indeed, this is the most important contribution of *Perspectives*. As it is underrepresented, vegans must confront and reflect on the hard truths and violence associated with human overpopulation. As veganism is a movement of nonviolence, it would appear necessary—and be inspiring—to see more scholarship and activism that brings veganism and population (coupled with consumption patterns) closer together in the near future. Just as with veganism, this strain of thought would also entail much critical and self-reflexive evaluation as racist notions of 'population control' must surely be avoided.

Critical Perspectives on Veganism is not meant to answer many questions. Instead, the editors succeed in their goal of presenting questions that need to be grappled with as veganism goes through a dynamic social and cultural transformation. What appears to be certain is that veganism must somehow retain its radical political nature amidst its rising popularity or it will be subsumed into and co-opted by the very systems of domination and oppression it claims to contest. *Perspectives* provides the intellectual stimulation needed to bring veganism into the mainstream effectively. That is the goal, after all.

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Editorial Objectives

The *Journal for Critical Animal Studies* is open to all scholars and activists. The journal was established to foster academic study of critical animal issues in contemporary society. While animal studies is increasingly becoming a field of importance in the academy, much work being done under this moniker takes a reformist or depoliticized approach that fails to mount a more serious critique of underlying issues of political economy and speciesist philosophy. JCAS is an interdisciplinary journal with an emphasis on animal liberation philosophy and policy issues. The journal was designed to build up the common activist's knowledge of animal liberation while at the same time appealing to academic specialists. We encourage and actively pursue a diversity of viewpoints of contributors from the frontlines of activism to academics. We have created the journal to facilitate communication between the many diverse perspectives of the animal liberation movement. Thus, we especially encourage submissions that seek to create new syntheses between differing disputing parties and to explore paradigms not currently examined.

Suggested Topics

Papers are welcomed in any area of animal liberation philosophy from any discipline, and presenters are encouraged to share theses or dissertation chapters. Since a major goal of the Institute for Critical Animal Studies is to foster philosophical, critical, and analytical thinking about animal liberation, papers that contribute to this project will be given priority (especially papers that address critical theory, political philosophy, social movement analysis, tactical analysis, feminism, activism and academia, Continental philosophy, or post-colonial perspectives). We especially encourage contributions that engage animal liberation in disciplines and debates that have received little previous attention.

Review Process

Each paper submitted is initially reviewed for general suitability for publication; suitable submissions will be read by at least two members of the journal's editorial board.

Manuscript Requirements

The manuscript should be in MS Word format and follow APA guidelines. All submissions should be double-spaced and in 12 point Times New Roman. Good quality electronic copies of all figures and tables should also be provided. All manuscripts should conform to American spelling.

As a guide, we ask that regular essays and reviews be between 2000-8000 words and have limited endnotes. In exceptional circumstances, JCAS will consider publishing extended essays. Authors should supply a brief abstract of the paper (of no more than 250 words). A brief autobiographical note should be supplied which includes full names, affiliation, email address, and full contact details.

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