



# The Ethics of Imitation in Meat Alternatives

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## Abstract

The consumption of traditional meat is currently being challenged by the rise of meat alternatives claimed to be more beneficial for the environment and non-human animals. One of the peculiarities of these products lies in their attempt to replace meat through the close *imitation* of its sensory qualities, which poses relevant philosophical questions: What are the purported reasons that motivate this imitation, instead of the promotion of different but sustainable foods that break with the imagery of meat eating? And, if eating meat is considered morally wrong, what is the moral status of the simulation of a wrong act? Our aim is to address these questions to shed new light on the ethical claims that constitute, in fact, one of the major advantages of these products. Firstly, we introduce the aims and functions of simulating meat sensory qualities. Subsequently, we investigate whether the imitation of meat can be found morally acceptable on consequentialist grounds. Lastly, we raise the question of whether there is room for claiming that imitating meat is morally wrong even if its consequences are overall better, from the point of view of non-consequentialist ethical frameworks. We conclude that there are not compelling reasons for considering meat imitation as morally undesirable.

**Keywords** Meat alternatives · Ethics · Imitation · Cultured meat · Novel foods · Alternative proteins

## Introduction

The history of meat alternatives (MAs) dates back to 956 CE when the magistrate of Qing Yang discouraged the consumption of meat by proposing an alternative called “mock lamb chops” or “the deputy mayor’s mutton”: this is the first known mention of tofu (Shurtleff and Aoyagi 2014),<sup>1</sup> which curiously enough was referred to as a copy, a mock, of a specific cut of meat. Tofu became a widespread food in Asian cuisine, but it had to wait until 1876 to make its entrance into the Western World when it was presented - along with miso - as a

<sup>1</sup> Shurtleff and Aoyagi (2014) constitutes the largest source of documented information on the history of products - especially made from soy - that mimic meat.

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“substitute for meat” at Japan’s International Exhibition in Philadelphia. In the same years, Dr. Kellogg started his experiments to make an imitative meat alternative to disrupt the consumption of animal flesh,<sup>2</sup> and in 1896 he launched the Nuttose, made from peanuts, onto the market. During the 20th century, the production of meat alternatives has continued its path towards the achievement of better mimeses, and nowadays technological innovation has led to unprecedented results in replicating the sensory qualities of meat.

Plant-based meats are not the only products that challenge the predominance of traditional meat: cultured meat (CM), which is obtained by growing animal cells *in vitro*, has been at the centre of the academic and societal debate, even if its future is still uncertain and its consumption is currently available only in Singapore (GOOD Meat 2022). Being made of the same cells that constitute animal flesh, the biological composition of CM is almost equivalent to that of traditional meat: this ambiguity has generated a struggle between CM manufacturers, who advocate for its recognition as “real” meat, and the defendant of traditional meat who want to exclude synthetic foods from the meat category. Nevertheless, since the production of CM imitates meat cuts to offer an alternative to traditional meat consumption, we would treat CM as an imitative meat alternative (IMA), along with plant-based meat.

In line with the history of MAs, plant-based meat and CM have been developed in order to replace meat foods.<sup>3</sup> These novel products are promoted as a response to the issues posed by animal farming – such as animal welfare, sustainability, and health concerns - for which they promise to provide a solution (Jönsson 2016; Sexton et al. 2019; Lonkila and Kaljonen 2021). For instance, a set of interviews has shown the presence of an alignment between the actors involved in CM production and animal liberation or environmental narratives (Stephens 2013). Taking a look at the website of the Good Food Institute (GFI), a non-profit organisation leader in the promotion of IMAs, their opening line says: «At GFI, we’re building a world where alternative proteins are no longer alternatives» (GFI 2020); similarly, both Upside Food<sup>4</sup> and GOOD Meat websites offer their products as the turning point that would revolutionise meat production, thus solving all the ethical and practical problems that stem from animal farming. The advertising campaign that surrounds and supports these products clearly shows what the intended goal of plant-based and CM is, namely, the replacement of conventional meat in the long run, along with the promise of bringing about a more sustainable and cruelty-free world.

This attempt at concurring against meat predominance is particularly interesting as the preferred means for substitution is the close mimesis of the very object that they are trying

<sup>2</sup> As Dr. Kellogg himself writes: «By the combination of nuts and cereal, a product very closely resembling meat may be prepared. [...] No doubt the future will develop a large number of vegetable products which will so fully supply the place of various meat products and dishes» (Kellogg 1923, 334). In the early experiments, the imitation of meat was focused mainly on its flavour: «[...] since vegetable extracts are now prepared from certain plants [...], which supply the rich osmazome flavour of meat [...], it would seem that the last excuse for the use of meat of any sorts has disappeared» (Kellogg 1923, 335–336).

<sup>3</sup> It has been argued that the recent technological innovation has produced a jump in quality that creates a rupture with the history of meat alternatives, making plant-based meat and CM «a *version of* rather than alternatives to animal products» (Jönsson et al. 2019). However, as long as these novel foods share the same goal that has always been present in the history of MAs, which is proposing an *alternative to* traditional meat consumption, they can still be considered an alternative product - even if, with new technologies, the imitation has reached an astonishing level that unsettles the boundaries of food categories, raising the question of whether they are meat or not.

<sup>4</sup> Upside Food is the first company that has received approval to grow chicken cultured meat from the US Food and Drug Administration (Center for Food Safety and Applied Nutrition 2022).

to get rid of. Meat is both the root of major problems and the greatest object of desire, the benchmark when it comes to evaluating the tastiness of a food item. While a certain degree of mimesis has always been employed by meat alternatives, imitating the sensory qualities of a food item is not a necessary condition for being its substitute. Substitution requires only that the substitute be apt at fulfilling some functions - but not all, otherwise it would be an instantiation – of the object that it wants to substitute: the more functions the substitute can fulfill, the more it can be defined as a good substitute, and at the same time it is important to leave out specific functions since it is the lack of certain properties that allow the alternative food to possibly be preferable over the original (Siipi 2020). As for MAs, their missing connection to animal bodies and to farming is what could make them the desirable alternative for people who are interested in avoiding animal suffering or who value environmental sustainability; conversely, this same property is precisely what could make them the undesirable alternative for those people who value traditional farming practices.

However, the close mimesis of meat, even if it is aimed at the replacement of this food, raises important ethical concerns: if meat consumption is taken to be an immoral act, what is the moral status of the imitation of this experience? When seen through the lenses of moral vegetarianism – i.e., the view that it is morally wrong to eat meat (Doggett 2018) -, the strategy of imitating and simulating the very habit that is considered wrong reveals its morally ambiguous character, thus requiring the investigation of the ethics of meat mimesis.

In the next sections, we explore the moral status of imitation in IMAs. Firstly, we inspect the problem in terms of a consequentialist approach to ethics (Sects. 2 and 3). Secondly, we try to determine whether there is room for arguing that imitation is immoral even in the case that overall its consequences are positive (Sects. 4 and 5).

## **From a Consequentialist Point of View: Does Imitation Increase Meat Consumption?**

Consequentialism is the view that normative properties depend only on consequences (Sinnott-Armstrong 2022). Imitation in meat alternatives could be morally accepted and indeed even morally required on consequentialist grounds if we could assume that its consequences are overall better. More specifically, the production of IMAs would turn out morally accepted or even morally required if we could assume the truth of the following claims:

- (1) imitation increases consumption of MAs;
- (2) the consequences of consumption of MAs are overall better than the consequences of traditional meat consumption.

So, it is important to determine whether (1) and (2) are both true or not.

Let us start by considering (1). The first thing to say is that the ability to replicate meat sensory qualities is potentially a double-edged sword: on the one hand, the high level of imitation makes these products appealing as substitutes, on the other hand, imitation could be perceived as uncanny due to its technological origin. The manipulation and use of sophisticated technology to imitate meat led to the perception of IMAs as being deeply unnatural, which in turn could trigger disgust reactions - especially concerning CM

(Siegrist et al. 2018) - that would negatively impact the diffusion of these foods among consumers. To overcome this problem, strategies to mitigate consumers' aversion towards novel foods are being investigated (Bryant et al. 2019; Pakseresht et al. 2022), showing that it is imitation itself and the association with traditional meat that can help to accelerate the acceptance of MAs (Michel, Hartmann and Siegrist 2021).

As a matter of fact, while cellular agriculture, namely «the manufacture of agricultural products from cell and tissue cultures» (Eibl et al. 2021, 52), offers the possibility to create new and original products that deviate from familiar foods (Wurgaft 2020), it remains confined within the boundaries of imitation because of the assumption that these products will be more accepted by consumers. Consider, for example, *The In Vitro Meat Cookbook* (van Mensvoort and Grievink 2014), a collection of futuristic recipes in which science and imagination are combined to explore uncanny and surreal dishes, or *Bioart Kitchen* (Kelley 2016), in which the relationship between art and technoscience is explored through the opportunity of creating unconventional foods, leading to the acknowledgement that maybe «it is the human palate that should be pushed to appreciate the uncanny difference of in vitro meat» (Kelley 2016, 87) instead of struggling to propose a copy of familiar products. Given that the replication of meat is not the only option available when it comes to offering alternatives to meat consumption, it is important to identify and discuss the reasons why imitation is the most preferred strategy. Arguably, imitation allows working around three different and contingent barriers that impede the replacement of traditional meat with MAs: food preferences, food neophobia, and the valuable social meanings that revolve around meat eating.

Let us first consider the obstacle of food preferences. When it comes to justifying or defending dietary choices, the preference for the taste of meat is hardly mentioned as a motivation for consuming animal products by omnivores (Belasco 2006) or, on the other hand, it is considered trivial by vegetarians when arguing in favour of a plant-based diet (Kazez 2018). In the case of conscientious omnivorism,<sup>5</sup> the pleasure that comes from meat-eating is taken to be a sign of human evolutionary and cultural history – such as in *The Omnivore's Dilemma* by food scholar Pollan (2006) - or it is interpreted as the expression of conviviality and domestic life, rather than a «solitary greed» (Scruton 2004, 89). Be that as it may, the preference for meat has been cultivated over millennia and its taste still constitutes one of the major barriers to abandoning meat or switching to meat alternatives (Jahn et al. 2021; Aschemann-Witzel et al. 2021). Although food preferences, and even tastes, are heavily influenced by sociological and psychological factors (Rozin 1987), given the pivotal role that meat has acquired in Western culinary traditions (Rozin 2003; Fiddes 1993; Twigg 1983) dismantling people's predilection for meat constitutes a difficult task, which requires time and effort: for this reason, companies selling MAs have taken a shortcut and offer products that try to satisfy established food preferences rather than creating new ones.<sup>6</sup>

However, it is important to notice that before the introduction of new IMAs, the mimesis of meat was so poor that these products were hardly considered as a meat alternative by

<sup>5</sup> Conscientious omnivorism is the view that eating meat is morally justifiable as long as it is «produced in an ethically permissible way» (Cuneo 2020).

<sup>6</sup> As a matter of fact, the new generations of IMAs have been targeted especially at meat reducers (He et al. 2020) in the attempt to gain a scalable production and a slice of the meat market, since they are most likely to reach a greater base of consumers – and go beyond the niche of vegetarians – when offering a product that mimics meat (Caputo et al. 2022).

omnivores. Consider the introduction of tofu: if the expectation is to eat lamb, tofu can never succeed in competing against this flavour, and its peculiar sensory qualities will appear insufficient when compared to the original item that it is trying to imitate. Indeed, the cognitive expectations of a specific food influence the way taste is experienced (Korsmeyer 2012); in this case, the expectation is to feel the flavour and texture of meat, but this expectation is deluded when the IMA fails in reproducing the sensorial experience given by meat. Although it can be appreciated on its own, proposing a food like tofu as a mimetic copy of meat puts the standard at an unreachably high level. Likewise, new IMAs will always remain a step back from the satisfaction given by eating meat, even if they have reached an astonishing level of mimesis, precisely because they remain a copy – thus imperfect – of some other authentic food (Stahl 2017). Given this risk inherent in the process of mimesis, the question arises once again: why not dispose of the attempt at imitating, and propose novel foods without comparing them to meat?

The answer to this question possibly lies in the omnivores' particular reluctance to trying novel foods, called food neophobia. According to psychologist Paul Rozin, omnivores face the challenge of seeking new food to be incorporated into their diet (food neophilia) which is counterbalanced by a sort of caution about trying new foods that may be potentially dangerous (food neophobia). These contrasting motives constitute the "omnivore's dilemma" that can be attenuated by cultural traditions: culinary heritage plays an important role in offering the coordinates for determining which foods are safe and familiar, and which ones are to be considered poisonous. Recipes, cooking techniques, and most importantly flavours are used to navigate successfully between neophilia and neophobia.<sup>7</sup> From this perspective, proposing new foods that can be cooked and eaten just like traditional ones (meat foods) can be seen as a shortcut for making something unfamiliar acceptable.

Yet, if the goal is to combat meat consumption, why is there the need to introduce alternatives or substitutes at all, rather than remove meat and favour the already staple vegetable foods and recipes that one can find within a specific culture? One possible consideration lies in the cultural and social role that meat has in Western society. Being at the «apex of West's food hierarchy» (Stahl 2017, 193), it seems that the removal of meat foods leaves a worrisome emptiness in culinary traditions and social settings since its consumption is surrounded by the values of hospitality and conviviality. When eating is understood as a social practice, refusing certain dishes could alienate a person from their culture and from the tastes they have learned to value, with the subsequent risk of being stigmatised: this is one of the impediments to abandoning meat consumption (Markowski and Roxburgh 2019). From this perspective, it is possible to explain why vegetarians from different cultures are trying to cope with the problem of alienation through the reinvention of their culinary traditions.<sup>8</sup>

To sum up, the reference to meat foods both through the imitation of their flavour and the use of their terminology (i.e., plant-based 'nuggets', 'burgers', 'hot dogs', etc.) is deemed to increase the consumption of MAs because of three considerations: firstly, imitative foods are more likely to be used as substitutes as they rely on already established

<sup>7</sup> According to Rozin (1976, 67) «flavour principles are then seen as ways for clothing foods in familiarity. And, paradoxically, the characteristic sauce(s) of a cuisine may become the vehicle for successfully incorporating new staple foods, as may happen occasionally, into a cuisine. The familiar flavours blunt the neophobic edge. If this view is true, the flavour principles should be the most conservative aspect of a cuisine».

<sup>8</sup> A look at the Veganuary cookbook (2022) clearly shows this attempt to maintain cultural tastes by the transformation of traditional meat courses into veg-friendly dishes.

food preferences; secondly, when compared to the option of proposing novel foods, imitation could permit a weakening of the neophobic reactions to unfamiliar foods; lastly, IMAs ease the transition to a meat-free diet without losing the familiar and traditional flavour that might be considered valuable. As such, then, imitation could be a viable strategy for increasing the consumption of MAs.

However, the feasibility of drawing the conclusion that imitation could be morally accepted and indeed even morally required on consequentialist grounds depends on whether (2) is true. Can we maintain that the consequences of the consumption of MAs are overall better than the consequences of traditional meat consumption?

### **From a Consequentialist Point of View: Are the Consequences of the Consumption of MAs Overall Better Than the Consequences of Traditional Meat Consumption?**

When it comes to (2), the environmental and animal welfare benefits of MAs are under everyone's eyes. Of course, a number of basic assumptions must be made, concerning the fact that MAs are neither unhealthier nor less nutritious than traditional meat, or that the animals that we would not eat would not be killed anyway, and so on.

Let us investigate how one could object to (2). One first way is this:

- (3) MAs should be deemed worse than traditional meat on consequentialist grounds even if they save animal lives, because MAs cause a reduction of the number of happy animals in the world.

This kind of argument stems from an intuition known as “the logic of the larder” which was first advanced by Stephen (1896, 236) by stating that «the pig has a stronger interest than anyone in the demand of bacon», meaning that meat eating benefits farmed animals since it enables them to come into existence. Regarding MAs, this objection has been discussed by Hopkins and Dacey (2008) and Schaefer and Savulescu (2014) in their case in favour of CM. For the present purpose, it is important to notice that this argument relies on some controversial assumptions.

The first assumption is:

- (a) being the subject of an animal existence spent entirely on farming facilities and concluded in its slaughter is preferable to non-existence.

In fact, if (a) is not true, then what is better for all the potential subjects of these existences is not existing at all. But if it is better for them not to exist at all, the world is a better place if it does not contain their existences, and we cannot claim that we negatively affect the world by depriving it of their lives. Indeed, we could not call these lives ‘happy’, if we agree to call as ‘happy’ a life if, and only if, it is preferable to non-existence.

So, is (a) true? According to some thinkers, it can be deemed true just because existing is always better than non-existing (see Nagel 1970). But one can object that it is not the case that being in a state of existence is always better than existing not (Roberts 1998, 151). For example, if we imagine that we are not yet conceived and are asked to choose between living just a few years experiencing nothing but strong pain and not being conceived at all, the majority of us would probably choose not to be conceived. Once we dispose of the

position according to which life, as a container for experiences, has an infinite or at least an exceptionally high positive value that counterbalances any negative value constituted by its unpleasant contents, we can discuss whether (a) in particular is true or not.

Let us concede that (a) is not always false. Since it is not under discussion that (a) is false in at least some circumstances, it seems that whether it is true or false must be decided on a case-by-case, species-by-species basis. So, determining whether the world is a worse place in the event that the number of farmed animals is reduced is a matter of comparing the number of cases in which (a) is true and the number of cases in which (a) is false - because, if we reduce the number of born animals, we can regret this state of affairs just in the event that the number of animals whose existence would have been better than non-existence is preponderant among those that could have existed and do not exist. If one considers the way most animals are farmed nowadays, however, one must conclude that the number of cases in which (a) is false is probably higher than the number of cases in which (a) is true. This undermines (3).

A second assumption required by (3) is this:

- (b) a world in which a higher number of animals exist and whose existence is better than non-existence is a better world, even if these animals are deliberately and prematurely killed.

There is no guarantee that (b) is true.

Firstly, introducing a certain number of violent deaths into the world must constitute a negative cost for a consequentialist. Therefore, it is possible that this negative cost outweighs the positive effect of introducing an equal number of lives that are preferable to non-existence into the world, especially if these lives are *barely* preferable to non-existence.

Secondly, one may suspect that, even from a consequentialist perspective, it is unacceptable to deem an action that introduces one or more lives preferable to non-existence into the world as morally right on condition that some avoidable and deliberate harm is made to the subjects of these lives, even if the overall quantity of intrinsic bad introduced into the world can be shown to be less than the added quantity of intrinsic good. If, for example, a sadistic person announced that she is not going to reproduce unless we give her permission to violently kill her children as teenagers, we would deem it immoral to consent even in the case that we adhere to some form of consequentialism, however certain it is that these children would live very happy lives. Indeed, if a form of consequentialism required consent to such a request, this would make that form of consequentialism implausible. If no plausible moral theory can consider it morally right to raise and kill people for harvesting their organs as long as they were granted a contented existence,<sup>9</sup> we also need to challenge the idea that it may be *prima facie* morally permissible to bring animals into the world if

<sup>9</sup> One of the main weak points of consequentialist positions is that they morally permit and even obligate to sacrifice the life of one person if more than one person are consequently saved, all other things being equal. As Thomson (1985) famously claimed, very few people would not subscribe to the thesis that a surgeon should not save five patients who need organs just by cutting up an innocent healthy person and distributing their parts. Of course, *this* anti-consequentialist moral intuition contrasts the opposite intuition that we have a moral permission and maybe even a moral obligation to “take charge, take responsibility” in the trolley case, and throw the switch that turns the trolley from the straight track where five would be killed to the spur of track where only one would be killed. Still, the anti-consequentialist moral intuition is very strong in the transplant case. We take our moral intuitions to be even stronger against the case in which happy people are raised just to harvest their organs at a certain age.



they are ultimately slaughtered, provided that they had a happy life - even more so if they are not killed to save the lives of people, but just to provide them with a kind of food they can do without (McMahan 2008).<sup>10</sup> In conclusion, (3) is undermined by the highly questionable character of (b).

It should be added that (3) can be contrasted also by following other argumentative lines. For example, even if we hold the view that a world with a greater number of happy animals is always better than one with fewer, no matter if they are sent to the slaughter in the end, the general goal of increasing total animal well-being is perhaps best achieved by farming small animals that can be raised with fewer resources than cows or pigs (Milburn 2018, 271). From this perspective, it is doubtful that MAs would necessarily cause a greater reduction in the number of happy animals in the world in comparison to that caused by traditional meat consumption.

Finally, the very general idea that a world with a greater number of happy lives is always better than one with fewer can be questioned by considering that, if this were true, we should discourage all those practices that work against the goal of increasing the number of happy lives, such as contraception methods: in short, people would have the moral obligation to bring as many happy individuals into the world as possible in order to increase total well-being (Parfit 1984; Schaefer and Savulescu 2014).

Another family of objections against (2) focuses on the negative transformations that the end of traditional meat production may cause to our societies:

- (4) the consequences of consumption of MAs are overall worse than the consequences of traditional meat consumption, because many cultural traditions and values would be lost because of the reduction of traditional meat consumption resulting from MAs.

One may be concerned that local farms would disappear along with the values and traditions that surround them. For instance, a study by Verbeke et al. (2015) highlights that the potential consumers of CM worry that this new technology would cause the loss of their farming heritage. These worries have been expressed by farmers too, whose reaction to meat substitutes recently shifted from the interpretation of them as not a real threat – since they were only a copy of their authentic product – to the passionate defence of their culture against these new foods (Sexton et al. 2019).<sup>11</sup> The defence of conventional meat against MAs, whose production permits the disposal of pastureland and livestock, appeals to the value of farming as a cultural practice, a practice infused with specific knowledge, attitudes and techniques all of which would be lost if we favour MAs over meat. In short, Western cultural baggage would be damaged by the diffusion of MAs since it would be deprived of a specific heritage constructed through the history of its civilization. A similar case regards the tradition of bullfights: on the one hand, this practice could be deemed immoral as it involves a great deal of animal suffering, on the other hand, it seems that its prohibition

<sup>10</sup> However, this conclusion may be questioned if the moral difference between killing persons and non-persons is being emphasised – see Singer (1979) and Egonsson (1998, ch. 11).

<sup>11</sup> See, for example, the petition that the US Cattlemen's Association advanced in 2018 to limit the use of the term meat to the «tissue of flesh of an animal harvested in the traditional manner» (USCA 2018, 2) to contrast the diffusion of IMAs.



would be unjust to the Hispanic culture, since all the traditional celebrations, social interactions and know-how that surround the Corrida would be forgotten.<sup>12</sup>

A first consideration could be that simply invoking the value of tradition - or the damages that its loss would cause to a given culture - is not a sufficient reason for arguing that a specific practice is morally sound, and the legitimacy of that practice should be supported with further reasoning. However, from the perspective of cultural relativism, the moral stance of a practice cannot be determined by appealing to standards that are placed outside of that specific culture, since each culture has its own ethics and norms for judging whether a custom is good or bad. Yet cultural relativism is deeply problematic: it enables justifying any sort of practice, no matter how inhuman and cruel they are, provided they are culturally valuable. For instance, gladiator games in Ancient Rome or human sacrifices in Aztec culture were both essential parts of the respective cultures, but this is not to say that they are morally sound and that they ought to be perpetuated only for the sake of traditions.

Returning to the case of animal husbandry, another possible response to those worried by its disappearance resides in showing that it is incompatible with other beliefs or norms of the same culture, thus avoiding the appeal to external standards for judging the tradition in question. As a matter of fact, in Western culture farming and slaughtering animals for food clash with ethical beliefs and claims that are culturally valuable as well: inflicting cruelty and killing pets is regarded as morally wrong, and many countries in Europe and the United States have laws that forbid it, yet the cruelty suffered by farmed animals in slaughterhouses is usually ignored;<sup>13</sup> the resulting inconsistency shows that there is a necessity to reevaluate the beliefs and norms that support one of these practices (Sandler 2014, 179).

One could argue that, even if a certain practice is morally wrong, it could turn out morally wrong to forbid that practice, and more generally to cause it to disappear when its disappearance entails the disappearance of a set of complex cultural traditions and values surrounding it. This is exactly the point raised by (4).

One first reply is that, whenever in the history of mankind there has been a relevant moral progress consisting in the elimination of a consistent quantity of evil such as death, extermination, violence, starvation, sufferance, pain, and the like, we have unanimously praised it no matter that it entailed the extinction of a way of life or type of activity, thus showing that we judge the reduction of evil much more important, as a consequence, than the preservation of the cultural tradition perpetuating a specific evil. For example, we have not hesitated to eliminate the system by which people are owned by other people as slaves, although some slavery traditions and practices have undeniably been lost thereafter. The same can be said about human sacrifices or dog fighting and the different cultures

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<sup>12</sup> One could rise up against the analogy between IMAs and bullfights by saying that, while the oppression and humiliation of animals are part of the enjoyment of a bullfight, they are not part of the enjoyment of eating meat. Indeed, many people seem to enjoy bullfights just for the precision and grace of the dynamic movements and the bravery, artistry, and tradition, and do not directly take pleasure and satisfaction in experiencing the pain and fear of bulls; on the other hand, some people seem to enjoy eating meat also because they appreciate the act of eating a bleeding part of a creature that has been recently killed. On the separability between the experience of eating meat and its “source of immorality”, see further, especially paragraph 5.

<sup>13</sup> The inconsistency between the aversion to animal cruelty and the desire of eating meat has been called “the meat paradox”: in Western societies, people tend to dissociate from animal suffering to mitigate the moral discomfort that arises when it is acknowledged that meat comes from the practice of slaughtering animals (Buttler and Walther 2018). The sole presence of this paradox clearly shows that in Western culture eating meat is perceived as problematic and collides with other beliefs and norms regarding our relationships with non-human animals.

supporting them. Since traditional meat consumption, unlike the consumption of MAs, is based on slaughtering animals, it seems that no appeal to (4) can make it preferable to the consumption of MAs on consequentialist grounds.<sup>14</sup>

Consider, also, that cultural change is ubiquitous: cultures evolve all the time, and some parts of them constantly cease to exist giving way to new parts that are born. Scientific and technological progress, in particular, causes the ongoing extinction of portions of cultures in which old habits take place. The invention of the internal combustion engine, for example, led to the disappearance of all closed, four-wheeled, passenger-carrying vehicles drawn by two or more horses; and the culture of carriages, coaches and fiacres stopped existing along with them (one of the proofs of this loss being that we no longer possess the encyclopaedic competence for distinguishing between these three things). However, it would have been absurd to advocate the block of the diffusion of internal combustion engine vehicles just to protect the culture of carriages, coaches and fiacres. If we do not even consider blocking scientific and technological progress simply to preserve the cultures that flourished around the previous stages of development, even more reason not to contemplate blocking a *moral* progress just to retain part of our culture; in fact, while it is possible for a scientific and technological advance to be morally positive, morally negative or morally neutral, a moral advance is morally positive by definition. So, the loss of farming knowledge, attitudes, and techniques cannot be a reason to refuse favouring MAs over meat, and (4) must be rejected.<sup>15</sup>

A variation of the concern about the abolition of animal farming points out that the negative consequence of MAs would be the further alienation of humanity from food production and nature, since with the disappearance of small and local farms that produce meat, the relationships between humans and the non-human animal world would disappear as well. However, this dystopic future scenario is not the only one available: for instance, van der Weele (van der Weele and Tramper 2014; van der Weele 2021) envisions a small-scale production of CM, in which citizens could encounter and familiarise themselves with donor animals through local facilities. Moreover, it is possible to imagine that, without animal agriculture, the land that is used for pasture will be gradually and partially reconverted into forests where wild species could flourish (Matheny 2003), thus creating the opportunity for people to encounter non-human animals, even if in a radically different mode than the one of farming. As such, whilst MAs endanger traditional animal husbandry, this loss does not necessarily lead to a future where humanity is irremediably removed from the natural world.

One could argue that the production of MAs is more reliant on industrial and technological processes than on local and sustainable animal farming, the latter being the

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<sup>14</sup> Note that the argument is intended to work regardless of whether the eliminated or reduced evil is evil afflicting persons or non-persons (Singer 1979).

<sup>15</sup> Supposing that MAs will succeed in their goal to replace traditional meat, the facilities that would disappear are more specifically slaughterhouses, rather than all types of farms: as a matter of fact, some farms do not depend directly on meat-eating (because their income comes from the production of other animal products, such as eggs, wool, dairy etc.), but that may sell meat as a by-product. If these farms can be preserved without the need to use animals for their meat (see, for instance, Mann 2020), then the diffusion of MAs would not entail their disappearance. Yet, if the price to pay to perpetuate these culturally valuable forms of farming is the continuation of a morally problematic practice (the slaughtering of animals), then the previous arguments - against the cultural defence of animal farms dedicated to the production of meat - apply to these practices as well.

preferable option precisely in virtue of its being more natural: this critique – that stems from a hypostatization of the bucolic and pastoral past (Thompson 2011) – does not take into account the fact that local animal agriculture, even if it were sustainable (which is debatable, especially regarding biodiversity loss and deforestation (Stănescu 2016), is still morally problematic because it requires the slaughtering of animals, slaughtering that becomes unnecessary with MAs. The comparison between these two forms of food production results in divergent evaluations depending on the weight that one assigns to the moral problem of killing animals. For the present purpose, it is important to notice that the production of MAs always entails a greater reduction in animal suffering than local animal farming (on the condition that human labour is not worse in the production of MAs) and, given this reduction, it is not clear whether an appeal to naturalness is sufficient to tip the balance in favour of local animal farming.

A further kind of objection hits (2) only in the case that MAs are imitative – even conceding (1). For example, it is possible that IMAs would mainly mimic processed meat-based food, and that this would, in turn, promote junk food culture instead of what is deemed to be a more natural and healthy diet. Yet, these products are intended to be used as substitutes. Thus, if they are nutritionally better than high-processed meat and if they aim to substitute it, it seems that this replacement is overall positive, and it is not clear whether they would be consumed at the expense of whole foods. Moreover, a distinction should be made between food that is “natural” or “non-processed” and food that is “unhealthy”: even if natural food is usually perceived to be healthier (Etale and Siegrist 2021; Rozin et al. 2004), being more natural does not necessarily mean being healthier (Siipi 2013). In this sense, rather than focusing on what kind of food MAs mimic, or whether they are processed or not, the question to ask is whether their nutritional profile is better or worse than the authentic food they aim to substitute.

Suppose, however, that we become convinced that the gains of producing food items that mimic the sensory qualities of meat are greater than their negative effects. The question we raise is: Is there room for claiming that imitating traditional meat would be immoral even if we concede that its consequences are overall positive?

## **Blaming IMAs on Non-Consequentialist Grounds: Rule-Violating Acts and Vicious Pleasures**

One way to give a positive answer to this question is by arguing that we should deem all the actions confirming that animals can be thought of as edible items as morally bad. In this perspective, thinking of animals as edible things is intrinsically morally wrong, and anything promoting it is derivatively wrong (Sinclair 2016; Turner 2005). Since the marketing of food items that mimic the sensory qualities of traditional meat is a practice that would result in confirming that thought, it should be considered morally wrong even if it could not be contested on consequentialist grounds. One could even claim that it remains morally wrong also in the event that it can be shown that it saves some animal lives after all – just like, *mutatis mutandis*, negotiating with terrorists seems to many of us to be necessarily morally wrong, even if it can be considered that in doing so, we can save the lives of some hostages that would otherwise

be killed. A deontologist may say, then, that “Encouraging people to think that animals are edible things is wrong”, just as “Negotiating with terrorists is wrong”.<sup>16</sup>

Another way to reject food items that mimic the sensory qualities of traditional meat on non-consequentialist grounds would be this. If we can produce meat alternatives that, for the sake of argument, are as nutritious as traditional meat, the only gain we can have by making them mimic traditional meat is having a more familiar and pleasing food experience. But this pleasing surplus is obtained at the cost of a tickling simulation of an intrinsically wrong action, i.e., the act of eating an innocent animal that must have been expressly killed for us to eat it.

Now, it seems that if we can perform the same action in two ways, where the second only differs from the first in that it contains a surplus of pleasure for the agent coming from the imitation of an intrinsically wrong act, we should prefer the first way of performing that action, even in the case that we are certain that no further real instance of the imitated wrong act will take place. If, for example, a child can play in two different ways, and the second only differs from the first in that it contains the imitation of an act of fierce violence on the part of the child, we should prefer the first way for him or her to play, no matter that the second is more enjoyable to them because of that difference. Since IMAs, unlike non-imitative MAs, essentially appeal to this immoral surplus of pleasure, imitation should be considered morally wrong.

To put it differently, we can say that the following are all ways of turning a morally neutral action into a wrong one, ranked by moral corruption capacity:

- i) adding a real and avoidable violent act to the action;
- ii) adding the imitation of a real and avoidable violent act to the action;
- iii) adding the imitation of the perceivable effects of a real and avoidable violent act to the action.

Indeed, i), ii), and iii) are even more undeniably morally corrupting if their principal goal is to make the action more apt to give pleasure and satisfaction to the agent. So, if a pop star decided to make their new world tour more exciting by offering cockfighting on stage during the shows, this would fall under i), and would transform the action of selling (and, buying) a ticket for that music show from morally neutral to morally wrong. Similarly, if a food company imitates traditional meat which is obtained by killing animals, it falls under iii), and its marketing strategy turns out morally wrong.

One may react by saying that a verdict of moral wrongness is only convincing for i), where a real wrong act is added to the action. But ii) and iii) add a component that merely mimics a wrong act to the given action. Now, acts that merely mimic wrong acts could have no sufficient force to make themselves immoral under most non-consequentialist positions. For, an act that is against a requirement for virtue is wrong, but this does not mean that an act *merely imitating* an act that is against a requirement for virtue is wrong, too.<sup>17</sup> Nor is an act merely imitating an act that violates a moral rule necessarily wrong, provided

<sup>16</sup> According to deontological theories, what makes a choice right is its conformity with a moral norm rather than its consequences. Norms must simply be always obeyed by each agent, and there is no superior duty for an agent to maximise norm-keepings. See Alexander and Moore (2021).

<sup>17</sup> What characterises virtue ethics is that virtues and vices are not defined relative to some other concept, such as the consequences that are brought about (consequentialism) or the norms that are obeyed (deontology), and rather are taken as the most fundamental concepts. See Hursthouse and Pettigrove (2022).

that it does not violate a moral rule itself. Morally neutral actions to which ii) or iii) are added could become actions merely imitating wrong actions, rather than wrong actions themselves.

A similar defence of ii) and iii) can be offered on consequentialist grounds, of course. While (i) is adding a real harmful act to a given action, (ii) and (iii) add a component to the given action that merely mimics a real harmful act. There is no additional harmful ingredient under ii) and iii). So, it may seem we have the right to morally save ii) and iii), as long as the change they provide is largely beneficial as to its consequences. After all, the surplus of pleasure comes from a harmless imitation of a morally wrong act, or of its effects, rather than from a harmful morally wrong act itself. By contrast, its positive effects are real rather than merely imitative positive effects. If we must balance fictitious evils with real and concrete benefits, we should attribute more importance to what is real. In short, beneficial harmless acts cannot be wrong. Similarly, the mere adding of one or more beneficial harmless acts to something cannot make that thing morally wrong.

But are we sure that there are no acts that we deem intolerably morally wrong, even if we must acknowledge that they are harmless? Or – in non-consequentialist terms – are we sure that we cannot identify some acts that we deem morally wrong *just because* they imitate an act that is against a requirement of virtue, or that violates a moral rule? Fischer and Ozturk (2017) have argued that we have the intuition that it is morally wrong for a detective to ask for a fake replica of a real human-skin lampshade (crafted by a serial killer) that he found at a crime scene, and that this entails that it is also morally wrong to desire and consume IMAs. Similarly, suppose that, to reduce the number of child sexual abuse cases, the government decides to introduce humanoid sex robots which resemble children as substitutes for paedophiles. Even if it turns out to be beneficial, this measure is intuitively morally problematic. One way to express our moral intuition is that the moral rule that having sexual activity with children is morally wrong would not be defended by that provision. Equivalently, we may highlight that we should not tolerate, or even promote, any deliberate increase in the fulfilment of pleasure which we must consider as severely morally wrong because it is primarily satisfied by an extremely morally wrong conduct. The intuition, here, is that the surplus of pleasure is morally corrupt because it is caused by the imitative experience of a morally wrong action that is indirectly appreciated via the direct appreciation of its simulacrum (Fischer and Ozturk 2017). An advocate of virtue ethics would say that the surplus of pleasure is vice-derived (Alvaro 2019). In a sense, the evil consisting in the fulfilment of paedophilic desires would not be eradicated at all from the world and would rather be fostered.

After all, if eating IMAs turns out to be more pleasant than eating non-imitative MAs, this must happen because eaters do experience some pleasure in adding the imitation of what remains of a real and avoidable violent act to the action. IMAs are realised by making MAs look, taste, smell and even bleed like meat obtained by slaughtering animals: producing food items that mimic the sensory qualities of traditional meat, therefore, could be morally wrong.

## Defending IMAs Even on Non-Consequentialist Grounds

One interesting countermove to defend IMAs from the accusation of immorality coming from the sex robots analogy would consist in accepting the analogy and contesting its conclusion even regarding the immorality of the imitative paedophilic pleasure. According to

this point of view, there is a fundamental difference between the authentic and the imitative paedophilic pleasure. This difference is that, whilst the first is nurtured – and perhaps constituted – by the instantiation in the agent’s mind of a kind of mental event consisting in the belief that a case of real child sexual abuse is taking place, the second is neither fostered nor constituted by such an instantiation. This psychological difference could be sufficient to make a moral difference under at least some non-consequentialist positions. After all, the imitative paedophilic pleasure, unlike the authentic one, could be said to be corrupted neither by a malevolent intention nor by the intention to violate someone’s rights. If the imitative paedophilic pleasure turns out not to be immoral, so does the imitative carnivorous pleasure. Therefore, the analogy is inoffensive to IMAs.

However, it seems difficult to subscribe to the theory that the imitative paedophilic pleasure is not intrinsically vicious, morally corrupt, or depraved. One of the reasons is that it seems of the very same kind as its authentic counterpart, in that they aim at the same action (a real sexual abuse) as the action that can best satisfy them. Indeed, the pleasure coming from the fictitious action is arguably less intense than the other, and this can be interpreted as the main difference between the two pleasures, which would therefore only be dissimilar in degree, not in kind.

The latest consideration suggests a more promising way to escape from the accusation of immorality oppressing IMAs. One could get away from the analogy by claiming that whilst the imitative paedophilic pleasure is intrinsically morally corrupt, the imitative carnivorous pleasure is not, the relevant difference being the following. Let us call the ‘source of immorality’ the very act, event or object that is intrinsically morally bad or evil in virtue of its being violent or cruel and which is supposed to originally corrupt the pleasure by making it a vicious pleasure, or a pleasure violating a moral norm or someone’s rights. In the authentic paedophilic pleasure case, the fulfillment conditions of the pleasure do coincide with the source of immorality. This means that the act one has to perform to fulfill that pleasure is the very source of immorality of the pleasure. In this situation, *imitative* fulfillments of pleasure have only a very tight space in which to break into, and their only option is imitating the source of immorality itself.

The authentic carnivorous pleasure case is different. Here, the fulfillment conditions of the pleasure do not coincide with the source of immorality, because the act one has to perform to satisfy one’s desire to enjoy the taste, texture, and flavour of a steak is not the act of killing an animal - which is the alleged source of immorality of the experienced pleasure - but the mere act of eating a steak. Moreover, normally the act of killing an animal is not even the direct causal antecedent of the act of eating a steak, and rather there are many other actions, performed either by the same person or by others (like, for example, cooking a steak and, before that, buying a steak from a local butcher or placing an order with a wholesale meat supplier) that occur as causal intermediates. So, the action fulfilling the pleasure lies at one extreme of a causal chain of actions whose other extreme is the action of violently killing an animal, which is ordinarily not performed by the same agent. Here, attempts to get imitative fulfillments of the carnivorous pleasure do not need to imitate the source of immorality. If you want to provide me with some experience that imitates the experience of eating a steak, you do not need to imitate the killing of an animal.

In other words, meat imitation strategies can break into the causal chain of actions discussed above at different steps, and in particular at the very final step, without the need to compromise themselves by imitating the source of immorality. But if the source of immorality is not imitated, the imitation itself may not be immoral.

We can reformulate this way to get away from the sex robots analogy by saying that in the IMAs case, one can imitate the proximal causes of a meat-eating experience without

the need to imitate the distal causes, among which lies the source of immorality. Imitating the experience of eating a steak may be derivatively immoral if its distal causes include even just the imitation of the traditional way of obtaining it, that is, the killing of an animal, which is intrinsically immoral. But if one provides the material conditions (that is, a food) for imitating a meat-eating experience without involving either its traditional immoral means of production or their imitation, then both the product and its proper employment can be morally correct.

One could oppose this position by claiming that (food) products, as well as their imitations, do maintain the immoral status of their traditional means of production for a long time after the latter has been substituted by new and morally correct ones. Yet, there are many examples of foods that have lost their negative moral appeal almost immediately when their sources of immorality have been removed, such as sugar, cocoa and coffee that nowadays we consume even if in the past they were produced by relying on human slavery: as Milburn (2023, 73) argues, we would not claim it to be immoral to desire or consume certain foods – e.g., bread that required the use of oxen to harvest grain – only because in the past their production was obtained by immoral means if at present these foods can be produced in a way that does not require any forms of immorality.

It is possible, however, that at least under some circumstances the intentional imitation of the experience of eating meat could be morally condemned no matter the fact that the source of immorality has been eradicated and is not an object of imitation.

A first possibility is that an otherwise morally neutral product or experience, in a particular social context, remains culturally marked as morally vicious in virtue of its being or having been typically cultivated by some group of people devoted to immoral practices or believed to be so. In these circumstances, the intentional seeking of that specific product or experience could be seen as paying homage to that group of people and their immoral values. This could be sufficient to make the product or experience immoral. So, if the experience of eating meat were culturally connotated as typical of those people who do not accept to take the moral problem constituted by killing animals seriously, then promoting this experience, even just imitatively, rather than other and possibly new food experiences, could be seen as immoral. Although this is a compelling objection to IMAs, we think that it can be rejected at least for those IMAs that avoid providing consumers with an imitative version of the meat-eating experience in a morally ambiguous way, and rather explicitly contract out the couldn't-care-less-of-animals scheme. Moreover, the more IMAs catch on, the less the meat-eating experience will be culturally marked as morally stained.

A second way of opposing IMAs is to deem the pleasure of eating meat as intrinsically immoral as long as it sanctions the fact that an individual is not virtuous: according to Alvaro (2022), a virtuous consumer would eat with temperance, meaning that they avoid all those foods that are unhealthy, environmentally damaging, or produced by harming animals. From this point of view, the desire for meat, fostered also by IMAs, is morally to blame. Yet, even if one considers it unvirtuous to indulge in the pleasure of eating meat, it seems that moderate consumption of foods that do not provoke substantial harm – to one's health, to the environment, or to non-human animals –, such as IMAs, is not a lack of temperance, and can rather be morally accepted even on the basis of a virtue-oriented ethics by considering that in certain circumstances taste can be an essential component of a good life (Kazez 2018). Alvaro says that virtuous individuals should not be particularly attached to a specific food simply because of its taste, but one can acknowledge that preferring a specific taste over others is not unvirtuous all other things being equal; and his conception that «while food pleasure is relatively important, the main purpose of eating food is to acquire energy for growth and for proper functioning and health» seems either inviting



to asceticism or permitting to morally accept IMAs after all. Although one can agree with Alvaro that well-planned, plant-based, vegan diets should be considered *more* virtuous than all other diets, this does not mean that consuming moderate amounts of IMAs would be morally wrong. Alvaro concludes that «virtue ethics would favour the option that does not require financial burden and strategies to convince people to abandon what they see as perfect and natural (factory farming) to embrace something unnatural made in the lab that they do not want», but if this means that virtue ethics entails that it is always immoral to spend money on trying to change people's minds and convince them to adopt less deleterious or unhealthy (although perhaps more "unnatural") customs, his conclusion seems highly questionable.

But the most challenging way of claiming that the intentional imitation of the experience of eating meat could be morally condemned even if the source of immorality is no longer present nor imitated is remarking that it would fall under category iii). Think of the fake replica of the real human-skin lampshade (Fisher and Ozturk 2017): could it not be immoral to choose to produce imitations of that lamp, insofar as one has to imitate some effects (i.e., the human skin look) of its immoral production? In the same spirit, it could be immoral to imitate meat, because one cannot help but imitate some of the effects of the killing of an animal.

While bread, coffee or sugar do not retain any aesthetic or sensory qualities that are tied to their means of production (one cannot perceive the mistreatment of oxen from the taste of bread) when it comes to meat, its taste, smell, and texture are dependent upon the presence of blood, flesh and even bones. In short, in the case of meat, the aesthetic qualities are morally laden (Korsmeyer 2012). Thus, even if the source of immorality is removed, the appreciation of IMAs – as well as the appreciation of the fake human-skin lampshade - would always bear a trace of the traditional and immoral means of meat production. As said, iii) can be considered as a means to morally corrupt an action, however less severely than by ii), provided that ii) is considered so.

True, there would be a difference between IMAs and the sex robots case, because the sex robots case would fall under ii), not iii). In virtue of this difference, producing IMAs must be considered *less* morally wrong than making paedophiles have sexual activity with humanoid sex robots looking like children; but this cannot mean advocating that IMAs are not morally wrong. (In analogy, imagine that the Government distributed just one set of audio files artificially reproducing the cries of abused children to paedophiles; and suppose that, just by adding this acoustic dimension to their otherwise morally neutral sexual activity, the number of real child sexual abuse cases were to significantly reduce. We assume that, again, most of us would deem this measure - a clear type-iii) case - as morally condemnable). Thus, is it possible to morally save IMAs if they are iii)?<sup>18</sup>

<sup>18</sup> There could be, however, potential cases where the imitation adjunct in IMAs falls within ii). An example of this kind could be the «throat tickler» (van Mensvoort and Grievink 2014, 73), a fictional food item – obtained by cellular agriculture – designed to resemble a sort of marine creature whose tentacles move thanks to a chemical reaction between sodium and cell membranes. Despite its movement, this food cannot be interpreted as a living sentient being, yet the experience of eating it is in fact the simulation of ingesting a non-human animal that is still alive and that dies during its consumption. This experience could be interpreted as an imitation of *Ikizukuri*, a Japanese culinary technique that allows keeping fish or octopuses alive up to the moment of their consumption. From this perspective, the imitation addition in the throat tickler falls within ii), as it involves the simulation of a violent act of killing, rather than the mere imitation of the effects of a violent act (iii).

Let us start offering an answer to this objection by remarking that there is an important difference between the human-skin lampshade and IMAs. If we consider the imitation of the human-skin lampshade, either there is no relevant cultural gain, because producing a slightly different lampshade *not imitating* the serial killer lampshade would have been equivalent, or the cultural gain consists precisely in appreciating and/or paying homage to the source of immorality of the original lampshade. So, imitation is either pointless or morally problematic. The IMAs case is different. Here imitation can be “morally innocent” - meaning that it is not intended as an indirect tribute or appreciation of the source of immorality - and, at the same time, it achieves a valuable cultural aim. The experience of eating meat is central to many dietary cultures, and in these contexts, its replication cannot be considered just a matter of whimsical gustatory pleasure. Can we suspect that all imitations of traditional meat contain an appreciation of the source of immorality after all? Actually, we have evidence to the contrary. People tend to avoid thinking of the death of animals while eating meat because it would negatively compromise their eating experience (Kunst and Hohle 2016; Piazza 2020; Loughnan et al. 2014); and, in Western societies, the slaughtering of animals is a practice that is usually hidden away because of its perceived immorality (Vialles 1994), thus raising doubts about the assumption that the perception of the effects of these violent actions *as effects of these violent actions* constitutes an essential part of the pleasure of eating meat. One can say that meat can usually be gastronomically appreciated *despite* it being produced via morally problematic means, rather than *because* of it. Therefore, while iii) in the human-skin lampshade case is either futile or morally corrupting, it seems possible for iii) to have neither qualification in most IMAs cases.

The same holds for the comparison between iii) in the sex robots case and iii) in IMAs. While it is cognitively impossible not to hear the fake cries in the audio files as (the imitations of) the perceivable effects of a real and avoidable violent act, it is cognitively possible not to experience the aesthetic qualities of IMAs as (the imitations of) the perceivable effects of a real and avoidable violent act. Rather, experiencing the aesthetic qualities of IMAs *not* as (the imitations of) the effects of a violent act is the norm. Moreover, while in version iii) of the sex robots case perceiving the imitations of the effects of a violent act *as* (the imitations of) the effects of a violent act is a constitutive part of the pleasure, in the IMAs case perceiving them *as* (the imitations of) the effects of a violent act is hardly a constitutive part of the pleasure, and rather is detrimental to the pleasure. This seems to offer a convincing defence of IMAs even if they fall under iii).

What IMAs replicate are foodstuffs that allow people to enjoy specific food tastes, textures, and flavours that can be culturally, socially or personally valuable: these foods simulate neither the experience of eating animals that have been killed - an experience that already in meat-eating was pushed away because it would have undermined the desired pleasures - nor the effects of that violence *qua* effects of that violence, but just the gastronomic experience of cooking familiar foodstuff according to traditional recipes, of composing dishes in familiar shapes and so on. Thus, the surplus of pleasure gained by imitation leans towards the reproduction of a familiar food item, not towards the simulation of the perceivable effects of violence.

Of course, one could morally condemn the (unconscious) blocking of unpleasant mental representations of the source of immorality that people resort to in order to make their eating authentic or imitative meat a fully pleasurable experience. This way of ignoring or “quarantining the knowledge” about the means of production to appreciate a certain experience or object may itself be morally wrong (Fischer and Ozturk 2017, 493). Still, this does not necessarily apply to IMAs: a vegetarian and even an omnivorous person can enjoy eating IMAs *not* via quarantining the knowledge, but through an appreciation of the

separability, and the actual separation, of the meat-eating experience and iii) accompanying it, on the one hand, and the source of immorality, on the other. It seems to us that this higher-level recognition and enjoyment of one's own taking pleasure in experiencing the *merely imitative* effects of an immoral act *not qua* the effects, or imitations of the effects of that moral act, would hardly be intrinsically immoral.

## Conclusions

Mimicking meat sensory qualities is a practice that is bound to the production of meat alternatives since ancient times, a practice that has been on the rise thanks to the development of sophisticated novel food technologies: these days it is possible to eat plant-based burgers that bleed, hot dogs that sizzle on the grill, and maybe in the future we could eat cultured meat that would be indistinguishable from the conventional one. In this context, IMAs appear as food items that would allow satisfying humans' desire for meat without causing unnecessary suffering to non-human animals.

The moral problem of eating food items that are obtained by slaughtering non-human animals is precisely what these products aim to overcome. Even if they succeed in this goal, however, the use of imitation gives rise to a different moral concern: imitating meat could help in increasing the consumption of MAs over conventional meat, but the very practice of imitation requires asking what the moral status is of gaining pleasure from the simulation of a wrong act. As we have argued, from the point of view of consequentialism, meat mimesis would be morally acceptable. When meat mimesis is approached from non-consequentialist grounds, its moral legitimacy becomes more problematic; however, there is good reason to think that also from the point of view of non-consequentialist positions most moral concerns against imitation in MAs can be dissolved.

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## Declarations

**Conflict of Interest** The authors declare that they have no conflict of interest.

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## References

Alexander, Larry, and Michael Moore. 2021. Deontological Ethics. In *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta. <https://plato.stanford.edu/archives/win2021/entries/ethics-deontological/>. Accessed 27 Mar 2023.

- Alvaro, Carlo. 2019. Lab-grown Meat and Veganism: A Virtue-Oriented Perspective. *Journal of Agricultural and Environmental Ethics* 32 (1): 127–141. <https://doi.org/10.1007/s10806-019-09759-2>.
- Alvaro, Carlo. 2022. A Virtue-Ethical Approach to Cultured Meat. *Nature Food* 3 (10): 788–790. <https://doi.org/10.1038/s43016-022-00601-z>.
- Aschemann-Witzel, Jessica, Rebecca Frittrup Gantriis, Paola Fraga, and Federico J. A. Perez-Cueto. 2021. Plant-Based Food and Protein Trend from a Business Perspective: Markets, Consumers, and the Challenges and Opportunities in the Future. *Critical Reviews in Food Science and Nutrition* 61 (18): 3119–3128. <https://doi.org/10.1080/10408398.2020.1793730>.
- Belasco, Warren James. 2006. *Meals to Come: A History of the Future of Food*. Berkeley: University of California Press.
- Bryant, Christopher J., Joanna E. Anderson, Kathryn E. Asher, Che Green, and Kristopher Gasteratos. 2019. Strategies for Overcoming Aversion to Unnaturalness: The Case of Clean Meat. *Meat Science* 154: 37–45. <https://doi.org/10.1016/j.meatsci.2019.04.004>.
- Buttler, Benjamin, and Eva Walther. 2018. Measuring the Meat Paradox: How Ambivalence towards Meat Influences Moral Disengagement. *Appetite* 128: 152–158. <https://doi.org/10.1016/j.appet.2018.06.011>.
- Caputo, Vincenzina, Giovanni Sogari, and Ellen J. Van Loo. 2022. Do Plant-based and Blend Meat Alternatives Taste like Meat? A Combined Sensory and Choice Experiment Study. *Applied Economic Perspectives and Policy* 1–20. <https://doi.org/10.1002/aepp.13247>.
- Center for Food Safety and Applied Nutrition. 2022. FDA Completes First Pre-Market Consultation for Human Food Made Using Animal Cell Culture Technology. FDA. <https://www.fda.gov/food/cfsan-constituent-updates/fda-completes-first-pre-market-consultation-human-food-made-using-animal-cell-culture-technology>. Accessed 14 Feb 2023.
- Cuneo, Terence. 2020. Conscientious Omnivorism. In *A Dictionary of Ethics*. Oxford Reference. <https://www.oxfordreference.com/display/10.1093/acref/9780191835759.001.0001/acref-9780191835759-e-22>. Accessed 14 Feb 2023.
- Doggett, Tyler. 2018. Moral Vegetarianism. In *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta. <https://plato.stanford.edu/archives/fall2018/entries/vegetarianism/>. Accessed 14 Feb 2023.
- Egongsson, Dan. 1998. *Dimensions of Dignity: The Moral Importance of Being Human*. Dordrecht, Sweden: Kluwer Academic.
- Eibl, Regine, Yannick Senn, Géraldine Gubser, Valentin Jossen, Christian Van Den Bos, and Dieter Eibl. 2021. Cellular Agriculture: Opportunities and Challenges. *Annual Review of Food Science and Technology* 12 (1): 51–73. <https://doi.org/10.1146/annurev-food-063020-123940>.
- Etale, Anita, and Michael Siegrist. 2021. Food Processing and Perceived Naturalness: Is It More Natural or Just More Traditional? *Food Quality and Preference* 94: 104323. <https://doi.org/10.1016/j.foodqual.2021.104323>.
- Fiddes, Nick. 1993. *Meat: A Natural Symbol*. London: Routledge.
- Fischer, Bob, and Burak Ozturk. 2017. Facsimiles of Flesh. *Journal of Applied Philosophy* 34 (4): 489–497. <https://doi.org/10.1111/japp.12223>.
- GOOD Meat. 2022. About Us. GOOD Meat Website. <https://www.goodmeat.co/about>. Accessed 14 Feb 2023.
- GFI. 2020. Plant-Based and Cultivated Meat Innovation. 2020. GFI Website. <https://gfi.org/>. Accessed 4 Mar 2023.
- He, Jiang, Natasha Marie Evans, Huaizhi Liu, and Suqin Shao. 2020. A Review of Research on Plant-Based Meat Alternatives: Driving Forces, History, Manufacturing, and Consumer Attitudes. *Comprehensive Reviews in Food Science and Food Safety* 19 (5): 2639–2656. <https://doi.org/10.1111/1541-4337.12610>.
- Hopkins, Patrick D., and Austin Dacey. 2008. Vegetarian Meat: Could Technology Save Animals and Satisfy Meat Eaters? *Journal of Agricultural and Environmental Ethics* 21 (6): 579–596. <https://doi.org/10.1007/s10806-008-9110-0>.
- Hursthouse, Rosalind, and Glen Pettigrove. 2022. Virtue Ethics. In *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta. <https://plato.stanford.edu/archives/win2022/entries/ethics-virtue/>. Accessed 27 Mar 2023.
- Jahn, Steffen, Pia Furchheim, and Anna-Maria Strässner. 2021. Plant-Based Meat Alternatives: Motivational Adoption Barriers and Solutions. *Sustainability* 13 (23): 13271. <https://doi.org/10.3390/su132313271>.
- Jönsson, Erik. 2016. Benevolent Technotopias and Hitherto Unimaginable Meats: Tracing the Promises of In Vitro Meat. *Social Studies of Science* 46 (5): 725–748. <https://doi.org/10.1177/0306312716658561>.
- Jönsson, Erik, Tobias Linné, and Ally McCrow-Young. 2019. Many Meats and Many Milks? The Ontological Politics of a Proposed Post-Animal Revolution. *Science as Culture* 28 (1): 70–97. <https://doi.org/10.1080/09505431.2018.1544232>.

- Kazez, Jean. 2018. The Taste Question in Animal Ethics. *Journal of Applied Philosophy* 35 (4): 661–674. <https://doi.org/10.1111/japp.12278>.
- Kelley, Lindsay. 2016. *Bioart kitchen: art, feminism and technoscience*. International library of modern and contemporary art. New York: I.B. Tauris.
- Kellogg, John Harvey. 1923. *The Natural Diet of Man*. Modern Medicine Publishing Company of Battle Creek: Michigan. 2nd ed. 2006. Colorado: Coastfield Press.
- Korsmeyer, Carolyn. 2012. Ethical Gourmandism. In *The Philosophy of Food*, ed. David M. Kaplan. Berkeley: University of California Press.
- Kunst, Jonas R., and Sigrid M. Hohle. 2016. Meat Eaters by Dissociation: How We Present, Prepare and Talk about Meat Increases Willingness to Eat Meat by Reducing Empathy and Disgust. *Appetite* 105: 758–774. <https://doi.org/10.1016/j.appet.2016.07.009>.
- Lonkila, Annika, and Minna Kaljonen. 2021. Promises of Meat and Milk Alternatives: An Integrative Literature Review on Emergent Research Themes. *Agriculture and Human Values* 38 (3): 625–639. <https://doi.org/10.1007/s10460-020-10184-9>.
- Loughnan, Steve, Brock Bastian, and Nick Haslam. 2014. The Psychology of Eating Animals. *Current Directions in Psychological Science* 23 (2): 104–108. <https://doi.org/10.1177/0963721414525781>.
- Mann, Stefan. 2020. Could We Stop Killing? Exploring a Post-Lethal Vegan or Vegetarian Agriculture. *World* 1 (2): 124–134. <https://doi.org/10.3390/world1020010>.
- Markowski, Kelly L., and Susan Roxburgh. 2019. If I Became a Vegan, My Family and Friends Would Hate Me: Anticipating Vegan Stigma as a Barrier to Plant-Based Diets. *Appetite* 135: 1–9. <https://doi.org/10.1016/j.appet.2018.12.040>.
- Matheny, Gaverick. 2003. Least Harm: A Defense of Vegetarianism from Steven Davis's Omnivorous Proposal. *Journal of Agricultural and Environmental Ethics* 16: 505–511.
- McMahan, Jeff. 2008. Eating Animals the Nice Way. *Daedalus* 137 (1): 66–76. <https://doi.org/10.1162/daed.2008.137.1.66>.
- Michel, Fabienne, Christina Hartmann, and Michael Siegrist. 2021. Consumers' Associations, Perceptions and Acceptance of Meat and Plant-Based Meat Alternatives. *Food Quality and Preference* 87 (January): 104063. <https://doi.org/10.1016/j.foodqual.2020.104063>.
- Milburn, Josh. 2018. Death-Free Dairy? The Ethics of Clean Milk. *Journal of Agricultural and Environmental Ethics* 31 (2): 261–279. <https://doi.org/10.1007/s10806-018-9723-x>.
- Milburn, Josh. 2023. *Food, Justice, and Animals: Feeding the World Respectfully*. New York: Oxford University Press.
- Nagel, Thomas. 1970. Death. *Noûs* 4 (1): 73–80. <https://doi.org/10.2307/2214297>.
- Pakersesht, Ashkan, Sina Ahmadi Kaliji, and Maurizio Canavari. 2022. Review of Factors Affecting Consumer Acceptance of Cultured Meat. *Appetite* 170: 105829. <https://doi.org/10.1016/j.appet.2021.105829>.
- Parfit, Derek. 1984. *Reasons and Persons*. Oxford: Clarendon Press.
- Piazza, Jared. 2020. Why People Love Animals Yet Continue to Eat Them. In *Why We Love and Exploit Animals: Bridging Insights from Academia and Advocacy*, ed. Kristof Dhont and Gordon Hodson, 121–136. New York: Routledge.
- Pollan, Michael. 2006. *The Omnivore's Dilemma: A Natural History of Four Meals*. New York: Penguin Press.
- Roberts, Melinda A. 1998. *Child versus Childmaker: Future Persons and Present Duties in Ethics and the Law*. Studies in Social, Political, and Legal Philosophy. Lanham: Rowman & Littlefield.
- Rozin, Paul. 1976. The Selection of Foods by Rats, Humans, and Other Animals. In *Advances in The Study of Behavior*, ed. Jay S. Rosenblatt, Robert A. Hinde, Evelyn Shaw, and Colin Beer, 6: 21–76. New York: Academic Press.
- Rozin, Paul. 1987. Psychobiological Perspectives on Food Preferences and Avoidances. In *Food and Evolution: Toward a Theory of Human Food Habits*, ed. Marvin Harris and Eric B. Ross, 181–206. Philadelphia: Temple University Press.
- Rozin, Paul. 2003. Meat. In *Encyclopedia of Food and Culture*, ed. Solomon H. Katz and William Woys Weaver. New York: Scribner.
- Rozin, Paul, Mark Spranca, Zeev Krieger, Ruth Neuhaus, Darlene Surillo, and Katherine Wood. 2004. Preference for Natural: Instrumental and Ideational/Moral Motivations, and the Contrast between Foods and Medicines. *Appetite* 43 (2): 147–154.
- Sandler, Ronald L. 2014. *Food ethics: The Basics*. New York: Routledge, Taylor & Francis Group.
- Schaefer, G. Owen., and Julian Savulescu. 2014. The Ethics of Producing In Vitro Meat. *Journal of Applied Philosophy* 31 (2): 188–202. <https://doi.org/10.1111/japp.12056>.
- Scruton, Roger. 2004. The Conscientious Carnivore. In *Food for Thought: The Debate over Eating Meat*, ed. S.F. Sapontzis. Amherst, New York: Prometheus Books.

- Sexton, Alexandra E., Tara Garnett, and Jamie Lorimer. 2019. Framing the Future of Food: The Contested Promises of Alternative Proteins. *Environment and Planning: Nature and Space* 2 (1): 47–72. <https://doi.org/10.1177/2514848619827009>.
- Siegrist, Michael, Bernadette Sütterlin, and Christina Hartmann. 2018. Perceived Naturalness and Evoked Disgust Influence Acceptance of Cultured Meat. *Meat Science* 139: 213–219. <https://doi.org/10.1016/j.meatsci.2018.02.007>.
- Shurtleff, William, and Akiko Aoyagi. 2014. *History of Meat Alternatives (965 CE to 2014): Extensively Annotated Bibliography and Sourcebook*. Lafayette, CA: Soyinfo Center.
- Sinclair, Rebekah. 2016. The Sexual Politics of Meatless Meat: (In)Edible Others and the Myth of Flesh without Sacrifice. In *The Future of Meat without Animals*, ed. Brianne Donaldson and Christopher Carter, 229–147. Lanham: Rowman & Littlefield International.
- Siipi, Helena. 2013. Is Natural Food Healthy? *Journal of Agricultural and Environmental Ethics* 26 (4): 797–812. <https://doi.org/10.1007/s10806-012-9406-y>.
- Siipi, Helena. 2020. Food, Food Substitutes and Food Supplements. *Argumenta* 2: 247–260. <https://doi.org/10.14275/2465-2334/202010.sii>.
- Singer, Peter. 1979. *Practical Ethics*. Cambridge: Cambridge University Press.
- Sinnott-Armstrong, Walter. 2022. Consequentialism. In *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta and Uri Nodelman. <https://plato.stanford.edu/archives/win2022/entries/consequentialism/>. Accessed 14 Feb 2023.
- Stahl, Geoff. 2017. Making a Mockery of Meat: Troubling Texture and the Failings of the “Flesh.” *Journal of Asia-Pacific Pop Culture* 2 (2): 184–204.
- Stănescu, Vasile. 2016. Beyond Happy Meat: The (Im)Possibilities of “Humane”, “Local”, and “Compassionate” Meat. In *The future of meat without animals*, ed. Brianne Donaldson and Christopher Carter, 141–160. Lanham: Rowman & Littlefield International.
- Stephen, Leslie. 1896. *Social Rights and Duties. Addresses to Ethical Societies*. Swan Sonnenschein & Co.: London. Online ed. 2011. Cambridge: Cambridge University Press.
- Stephens, Neil. 2013. Growing Meat in Laboratories: The Promise, Ontology, and Ethical Boundary-Work of Using Muscle Cells to Make Food. *Configurations* 21 (2): 159–181. <https://doi.org/10.1353/con.2013.0013>.
- Thompson, Donald B. 2011. Natural Food and the Pastoral: A Sentimental Notion? *Journal of Agricultural and Environmental Ethics* 24 (2): 165–194. <https://doi.org/10.1007/s10806-010-9245-7>.
- Thomson, Judith Jarvis. 1985. The Trolley Problem. *Yale Legal Journal* 94 (6): 1395–1415. <https://doi.org/10.2307/796133>.
- Turner, Susan M. 2005. Beyond Viande: The Ethics of Faux Flesh, Fake Fur and Thriftshop Leather. *Between the Species: An Online Journal for the Study of Philosophy and Animals* 13 (5): 1–13. <https://doi.org/10.15368/bts.2005v13n5.6>.
- Twigg, Julia. 1983. Vegetarianism and the Meanings of Meat. In *The sociology of food and eating: essays on the sociological significance of food*, ed. Anne Murcott, 18–30. Aldershot: Gower.
- USCA. 2018. Petition for the Imposition of Beef and Meat Labelling Requirements. [https://www.fsis.usda.gov/sites/default/files/media\\_file/2020-07/18-01-Petition-US-Cattlement-Association020918.pdf](https://www.fsis.usda.gov/sites/default/files/media_file/2020-07/18-01-Petition-US-Cattlement-Association020918.pdf). Accessed 14 Feb 2023.
- van Mensvoort, Koert, and Hendrik-Jan. Grievink. 2014. *The In Vitro Meat Cookbook*. Amsterdam: Bis Publisher.
- Veganuary. 2022. Veganuary Cookbook. <https://veganuary.com/recipes/>. Accessed 14 Feb 2023.
- Verbeke, Wim, Afrodita Marcu, Pieter Rutsaert, Rui Gaspar, Beate Seibt, Dave Fletcher, and Julie Barnett. 2015. “Would You Eat Cultured Meat?”: Consumers’ Reactions and Attitude Formation in Belgium, Portugal and the United Kingdom. *Meat Science* 102: 49–58. <https://doi.org/10.1016/j.meatsci.2014.11.013>.
- Vialles, Noëlie. 1994. *Animal to edible*. Cambridge: Cambridge University Press.
- van der Weele, Cor. 2021. How to Save Cultured Meat from Ecomodernism? Selective Attention and the Art of Dealing with Ambivalence. In *Animals in Our Midst: The Challenges of Co-Existing with Animals in the Anthropocene*, ed. Bernice Bovenkerk and Jozef Keulartz, 33: 545–57. Springer Publishing.
- van der Weele, Cor, and Johannes Tramber. 2014. Cultured Meat: Every Village Its Own Factory? *Trends in Biotechnology* 32 (6): 294–96. <https://doi.org/10.1016/j.tibtech.2014.04.009>.
- Wurgaft, Benjamin Aldes. 2020. Meat Mimesis: Laboratory-Grown Meat as a Study in Copying. *Osiris* 35: 310–323.