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The ethics of Cultivated meat: moral problems beyond the technical issues

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Abstract

Cultivated meat is a new technology that since the 2000s has been attracting the attention of academics, policy-makers and producers, all of whom see it as a viable answer to some challenges that conventional meat production and consumption raises.

Beyond several critical issues concerning the production (use of culture medium, monitoring of the cell proliferation process, large-scale manufacturing of the product, etc.) some authors, mostly philosophers, are also raising a number of moral objections.

In this paper I shall focus on three possible set of arguments: 1) the wisdom of repugnance; 2) the notion that nature would be endangered by a technology like cultivated meat; 3) the argument of cannibalism.

In the concluding remarks, I will argue that we must keep both the biotechnological eschatology and the moral eschatology at a distance, the former claiming to solve the ethical crises of our age exclusively using biotechnology, the latter claiming to do without biotechnology altogether

Keywords: Cultivated meat, wisdom of repugnance, wisdom of nature, cannibalism, biotechnological eschatology, moral eschatology

1. Meat consumption and environmental problems

The world population has nearly reached eight billion and is growing at a rate of approximately 81 million per year. Based on the current trend, we will reach 10 billion by 2050.

FAO predicts we will need 70 per cent extra food in 2050 to meet the needs of the world's population. Within this scenario, world meat production has more than tripled in recent decades and today animal protein represents 40% [1] of the protein consumed globally.

Furthermore, while the average consumption of meat has decreased in developed countries, it has increased in countries with developing economies, such as China and India [2].

The conventional meat production system implies that nonhuman animals are farmed and fed until they are slaughtered.

To grasp the numbers at stake, suffice it to say that in Italy, in April 2022 alone, 1,595,432 animals were slaughtered within certain animal categories (cattle and buffalo, horses, sheep and goats and pigs).

The consumption of animal-based food is associated with cardiac disorders, metabolism disorders, diabetes, obesity, atherosclerotic formations, cancer, as well as the increase in antibiotic resistance.

The livestock sector is also responsible for the consumption of water, soil and the release of greenhouse gases into the atmosphere. Some experts estimate the global surface area occupied by livestock farms at 30% [3]. One third of the water used in the agricultural sector is used for livestock, which is responsible for 15% of anthropogenic greenhouse gas emissions.

Therefore, international bodies such as the United Nations and the European Union have focused their agendas on the issue of sustainable development and the environmental impact associated with food production. Many scholars have proposed reducing meat consumption or introducing more sustainable ways of producing it: cultivated meat is among them.

2. Cultivated meat

There are several advantages associated with cultivated meat. First and foremost, the ability to biopsy the cells needed for production from just a few animals.

Cultivated meat would then be designed to be nutritionally balanced and safe. Furthermore, the ingredients and production phases would be monitored, both from a hygienic and quality control aspect. The final product could be free of infection, parasites, disease or chemical contaminants. Vitamins, otherwise absent in meat (e.g. vitamin C) or polyunsaturated acids such as omega-3, could be added, decreasing the amount of saturated fatty acids.

Food options might increase, as any type of meat could be replicated in the future through this technique. There would be resource savings, in terms of soil and water. Greenhouse gas emissions into the atmosphere would be reduced. One could even imagine using cultured meat to support long-term space exploration and human settlement on other celestial bodies.

Finally, the slaughter of billions of animals would be prevented and the welfare of existing animals would be respected [4].

Despite this, numerous objections are raised to the production and/or consumption of cultivated meat. In the following paragraphs I will examine three of them

3. The argument of repugnance

Consumer acceptance is a major factor in the spread of a new product.

Many consumers expressed their resistance to the idea of tasting cultivated meat [5]. One of the causes has been a feeling of disgust, in some cases linked to a perception of unnaturalness.

Throughout the evolutionary history of our species, mental programmes have evolved to deal with all sorts of challenges. In particular, programmes have evolved that provide the motivation necessary to avoid the ingestion of harmful substances, the contact with surfaces and individuals that show signs of contamination, and sexual relations with partners that threaten the likelihood of producing and raising healthy offspring. [...] In particular, we identified three central regulatory variables - expected consumption value, expected contact value and expected sexual value - which control decision-making and behaviour in the respective domains of eating, contact and sex. Disgust, a term applied to the feeling that arises when a low expected value about consumption, contact or sex is generated, motivates context-specific avoidance [6].

Disgust emerged in the evolutionary history of our species to protect the organism from disease and potentially harmful behaviour. It has a major function in, for instance, preventing humans from ingesting substances that might be harmful.

Some authors, however, have gone so far as to assign disgust (or repugnance) a key role in our moral life.

Probably the best-known formulation of this position is that of Leon Kass [7]. For the American bioethicist, in fact, the 'wisdom of repugnance' can be a guide for our actions. He argues that we feel revulsion at the idea of certain things not because of the strangeness or novelty of what we are experiencing, but because we perceive and feel immediately and without any rational argument the violation of things that we rightly consider valuable.

Kass's argument, extended by some authors to include cultivated meat, does not seem to be convincing for at least three reasons.

1) It is Kass himself who admits that disgust is not an argument and that some of the things that were once repugnant are now accepted. Once this is admitted, however, we should conclude that by itself the feeling of repugnance is never an effective guide. Rather, it can at best provide us with a *prima facie* motivation to be scrutinized by reason.

2) The fact that the feeling of disgust finds its *ratio essendi* in our evolutionary past is not sufficient reason to consider it a reliable guide for our actions. The reason is that today's hyper-technological and hyper-connected world is radically different from the one in which the fundamental traits of our moral psychology emerged and stabilised.

3) The feeling of disgust is partly culturally conditioned. It is no coincidence that dietary regimes are, in some cases, profoundly different from one country to another. In many Asian countries entomophagy is widespread, in Western countries it is only since the late 1970s that certain insects (and products based on insect meal) have started to be introduced (to date only three insects have been allowed in EU countries, the *Tenebrio molitor*, *Acheta domesticus* and *Locusta migratoria*) and not without some difficulties, due to consumer resistance. Similar problems are also highlighted in the case of cultivated meat

4. The argument of nature

Man is not able to work better than nature. This argument, also known as the 'wisdom of nature', has often been raised in the face of the possible introduction of new technologies.

Similarly, it could be argued that while conventional meat is produced from real animals (with a top-down approach going from the whole, the complete organism, to the part), cultivated meat is the result of a technology that creates, in a sense, the product (with a bottom-up approach going from the cells to the hamburger or steak). This could lead to a significant loss of the sense of interdependence that binds us to nature. Moreover, it could lead to the emergence of a reductionist view of life, in which animals cease to be subjects of life and become mere aggregates of cells. In the text *How to think seriously about the Planet*, Roger Scruton uses the term *oikophilia* to refer to the sentiment that drives the preservation of local traditions and the network of mutual interdependence with the environment and nonhuman animals. From this perspective, only certain types of animal farming should be superseded [8]. My impression, however, is that Scruton's reasoning is on the one hand plausible, on the other hand ineffective and, moreover, that it overlooks a factor present in many regular meat consumers, namely the removal or deliberate ignorance of the process involved in the production of a finished product (a sausage, schnitzel or steak).

Scruton's reasoning is plausible if we think of ethical animal husbandry or some forms of extensive farming. Moreover, it applies to those who already experience a certain relationship of interdependence with nature and nonhuman animals. On the other hand, it is inadequate if our analysis turns to intensive livestock farming. It also seems to me to take inadequate account of the fact that most consumers do not know, prefer not to pay attention to or deliberately remove information about the process involved in the production of the products we find on supermarket shelves. In other words, for these consumers the relationship of interdependence with nature and nonhuman animals is already compromised. Cultivated meat is primarily aimed at this target group of consumers.

It could be argued, again, that cultivated meat would merely reiterate the processes of fetishizing meat that are already in place with current production techniques, while maintaining the idea that animals are food. Even this argument, however, does not seem convincing.

Since the moral ideal of overcoming any form of instrumentalization of living beings is *de facto* beyond our reach, investing in a technology that allows us to safeguard the welfare of nonhuman animals in exchange for a few cells seems to be not only the lesser of evils but a good thing.

5. The argument of cannibalism

The argument of cannibalism has been raised by some authors to emphasise the potential dangers of a large-scale spread of cultivated meat. On the one hand, it is a form of slippery slope argument. On the other, it raises some specific issues that deserve further investigation.

Once the technology enabling the production of cultivated meat is introduced on a large scale, we cannot prevent that among the types of meat available will be contemplated human meat. After all, there may be individuals curious to try it or ethical reasons may be advanced in favour of its preference. However, that once introduced there might be individuals willing to eat it (statement A) is not a conclusion that follows from the premise 'once widespread, cultured meat technology will necessarily drive the production of human meat' (statement B). The two statements have no connecting points. Some authors, however, point out that the possibility of making any kind of meat will undoubtedly encourage the emergence of new culinary ideas and among them the idea of eating human flesh. Such a strong assertion, however, finds no empirical justification and, like all arguments based on a radical application of the slippery slope argument, is exposed to objections that are difficult to challenge.

However, the argument also raises other questions on the merits. In particular, would it be morally permissible to eat human flesh, should it be available?

In fact, as Shaefer and Savulescu point out in a 2014 paper, although cannibalism is rejected by most people and even philosophers, there do not seem to be any explicit reasons against it. It is generally assumed to be wrong but no arguments are given to support this assumption. Jeremy Wisniewski points out that although there are explicit prohibitions against eating human flesh in the major ethical traditions, none are able to shield themselves from more or less strong objections [9]. Cora Diamond in a well-known paper [10] suggests that the prohibition of cannibalism is part and parcel of the specific form of life that *sapiens* has constructed over the millennia and that it is of no use, on the basis of abstract norms, to assert that it would be preferable to ingest, under certain conditions, human flesh rather than the flesh of nonhuman animals. Indeed, no matter how morally correct such an assumption might be, it could not find acceptance in our current specific way of life.

In my opinion, however, the role of ethics is also to pre-figure future scenarios and prepare us to deem acceptable specific moral assumptions that would prove to be more effective for social cooperation and guarantee our species a better chance of survival.

In particular, I believe we must distinguish at least two forms of cannibalism: self-cannibalism and heterocannibalism. Self-cannibalism poses no major moral problem. In fact, in this case it would be a matter of taking one's own cells and manufacturing a product about which no one could raise well-founded objections, no more than are raised to those who eat their own fingernails or hand husks or, in rarer cases, dried nasal mucus (aka boogers). Some objections could, however, be raised against heterocannibalism. In particular, one objection could be to the informed consent of the individuals from whom the cells would be taken. This would, in any case, be a critical issue not unlike medical decisions taken on the basis of the patient's consent or dissent.

6. Final remarks

Relying on biotechnology to solve ethical crises always holds dangers, and should be avoided' [11]. On the one hand, this is correct, but on the other hand it is inadequate in the light of current crisis scenarios. A correct and appropriate formulation might take the form 'Relying solely on biotechnology to resolve ethical crises always holds dangers, and should be avoided'. Biotechnological eschatology, i.e. the idea that biotechnology alone can offer us the tools to solve wicked problems, must be rejected. It may in fact be an obstacle to solving such problems. However, to think that we can only mitigate and/or solve wicked problems through the ethical transformation of subjects and the restructuring of social fabric within which we are embedded suffers from a specular flaw, which I call ethical eschatology, the idea that real changes are only inner ones, in which the technical component is excluded or minimised. In fact, behind this utopia lies a profound misunderstanding of the nature of our species, which is a technical one. Moreover, this approach does not at all take into account the urgency with which the current crisis confronts us, preferring to an ethics within things, an ethics above things, to an ethical reflection that always starts from the here and now, from factual data, an ethical reflection that judges events and states of affairs by proposing solutions and normative models from above that are in many cases inapplicable (or at any rate inapplicable by most).

References

1. S. Stoll-Kleemann and T. O'Riordan. The sustainability challenge of our meat and dairy diets. Environmental Science and Policy for Sustainable Development, 2015, 34-48
2. C. Tobler, V. Visschers, M. Siegrist. Eating green. Consumers' willingness to adopt ecological food consumption behaviors. Appetite, 201, 674–82
3. F.B. Zuhair *et al.* Technological, Regulatory, and Ethical aspects of in vitro meat. Food science and Food Safety”, 2019 DOI.org/10.1111/1541-4337.12473
4. G.O. Shaefer, J. Savulescu. The Ethics of producing in vitro meat. Journal of Applied Philosophy, 2014, DOI.org/10.1111/japp.12056
5. M. Siegrist, C. Hartmann. Perceived naturalness, disgust, trust and food neophobia as predictors of cultured meat acceptance in ten countries. Appetite 2020
6. W. Verbeke, A. Marcu, *et al.* Would you eat cultured meat?: Consumers' trust and attitude formation in Belgium, Portugal and the United Kingdom. Meat Sci, 2015, 49-58
7. L. Kass. The wisdom of repugnance. The New Yorker, 1997

8. R. Scruton. How to think seriously about the planet, 2014.
9. J. Wisnewski. A defense of cannibalism. *Public Affairs Quarterly*, 2014, 18(3), 265-272
10. C. Diamond. Eating meat and eating people. *Philosophy*, 53 (206), 465-479, 1978
11. Z. Weisberg. Biotechnology as end game: Ontological and ethical collapse in the “biotech century”. *Nanoethics*, 1, 2015