



BIOTECH ANIMALS IN RESEARCH

Ethical and Regulatory Aspects

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Animal Rights View

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7.1 DEFINITION: ANIMAL RIGHTS VIEW

The presented position in this chapter is labelled *Animal Rights View* (ARV). It is an egalitarian sentientist position that claims that every sentient being should be granted three basic, individual rights – the right of freedom, right of defence and the right to assistance. Starting point is the broadly accepted premise that rights can be applied to every sentient animal and only to sentient animals, because they have an individual experienced welfare, which can be promoted or harmed (sentientism). Although it is an ongoing debate which animals qualify as sentient, according to empirical parameters sentience can be assumed in at least all vertebrate species (mammals, birds, reptiles, amphibians and fish) plus cephalopods and crustaceans (Low et al., 2012). Regarding the moral significance every individual sentient being has to be considered equally (egalitarianism), although because of the wide variety of sentient beings, with species-specific and individual needs, the compliance with the three basic rights might lead to different

treatments in a specific situation. According to the ARV, basic rights guarantee that every sentient being, no matter what kind of species it is, has the possibility to live a good life of its own (rights theory). It is further important that the ARV presented here is concerned only with moral rights, which are independent of any political system and precede the implementation of rights in law and politics. Its relation to legal rights will not be further examined.

In the following the ARV and its political and philosophical background will be outlined first. Afterwards the three presented cases will be evaluated with the normative standards of ARV. It will be shown that the ARV would strongly limit the use of animals within scientific research.

7.2 BACKGROUND AND CONTENT

The ARV has to be understood as a close interrelation between philosophical, ethical and political doctrines. Historically and politically the ARV can be seen as an expansion of human rights as for instance mentioned in the *Universal Declaration of Human Rights* (1948), to sentient animals in general and not human animals only. Having their origin in the 18th and 19th centuries, the *Nonhuman Rights Project* (NhRP)¹ and the *Helsinki Declaration on the Rights of Cetaceans* (Low et al., 2012) are actual civil rights movements, which aim to embed pertinent rights in international and national laws to protect animals such as great apes, elephants, dolphins and whales from specific human use, such as hunting, human entertainment in zoos and circuses or harmful animal research.

Hence, ethically the ARV must be understood as an opposing position to human-centred (anthropocentric) positions and utilitarianism. Anthropocentric positions consider nonhuman animals only indirectly ethically relevant, e.g., because they are protected by a property law or because cruelty to animals will result in the delinquent habits in humans. Utilitarianism applies the idea of an impartial spectator, arguing that not only human but also animals' interests are morally relevant. However, due to the aggregation principle interests of a minority can be sacrificed to achieve the greatest good for the greatest number (e.g. Singer, 2011/1979: 20). This is something that proponents of the right view strongly oppose (cf. Regan, 2004/1983: Chapter 6.3).² An ideal society should grant its members maximal protection and not allow to trump the interests of a minority by the majority. In other words, all members of the moral community enjoy a strong protection within the ARV. This includes moral agents – beings who are morally responsible for their actions – and moral patients, beings who are protected by moral rights, but who are not able to follow moral rules, such as children, mentally disabled persons or animals.

The ARV further differs from the position discussed in the chapter on virtue ethics, because it focuses on action rather than the character traits of a moral agent and its starting point is neither the notion of “compassion” nor personal relationships as ethics of care does. But the rights view does not totally oppose the other

Henry Salt's *Animals' Rights Considered in Relation to Social Progress* (1894) and Leonard Nelson's *System of Ethics* (1932) may be viewed as antecedents of the animal rights view. Both emphasize the implementation of philosophical thoughts in to practice.

positions. It allows the weighing of interests within situations of moral dilemmas, and it allows compassion and relational duties among the members of the moral community as long as no right is violated. Further virtues play an important part to establish a stable society. In contrast to critical animal studies, whose perspective lies on institutional discrimination and (economical) power relations, the ARV focuses particularly on individuals and responsibilities between them.

The rights view that is presented here starts with other premises than ethics of care, virtue ethics and critical animal studies. It is based on three fundamental rights of individuals, which are:

- Right of defence, such as a right to life and bodily integrity.
- Right of freedom, such as a right of freedom of scientific research, individual lifestyle and freedom of movement and residence.
- Right to assistance, in a case of emergency or a right to education or pension.

To have a moral right is to have a moral claim *to* something and *against* someone. This means that each right must be linked with a corresponding duty, otherwise the claim cannot be implemented, because nobody would be responsible. Rights of defence correspond with a duty not to harm, rights of freedom with a duty not to interfere and right to assistance with a duty to assist. While every member of the moral community possesses the three basic rights, only moral agents have duties not to harm, not to interfere and to assist. Moral agents are beings who are capable of moral reasoning and who are responsible for their actions. Beings such as children, animals or people with mental disabilities, who are not able to be responsible for their action, are protected by rights, but don't have duties against the other members of the moral community.

The rights view assumes that the three basic rights are in the interest of every sentient being, although they prohibit some actions and restrict their freedom to a certain extent. Conceptually the right of defence is the strongest and precede the right of freedom and the right to assist. Otherwise, it wouldn't make any sense to claim the right of defence, if it would be generally overtrumped by the other two rights since then every action would be morally permitted. Hence, the right of defence trumps the other rights. The right of defence of all other sentient beings restricts my right of freedom and my duty to help. The only exceptions that permit to violate the right of defence are (i) cases of self-defence (and deadly force), (ii) when the rights holder gives her (informed) consent or (iii) if the rights holder benefits from the violation (e.g. in a case of emergency). In all other cases, the violation of right of defence is morally wrong and unpermitted.

What are the implications of the ARV for the three animal experiments? This question will be discussed in the next section.

7.3 CASE STUDIES: ANIMAL RIGHTS EVALUATION

Concerning all three cases an ethical evaluation has to ask first (Section 7.3.1) if the involved animals are sentient animals and therefore rights bearers. Secondly (Section 7.3.2), it has to be examined how the rights are affected and if any rights are violated. Thirdly (Section 7.3.3), if any rights are violated, it is necessary to

evaluate if the violations can be qualified as exceptions (self-defence, consent, case of emergency). If no rights are violated or if the violated rights are qualified as exceptions, the animal research is morally justified in these cases. If rights are violated and they cannot be qualified as exceptions, then this type of animal research is morally wrong.

7.3.1 Are the research animals involved sentient creatures?

This question concerns the following animals: Regarding the mice case, the male mice (number unknown), the female “donor” mice (number unknown), surrogates and the 440 gene edited mice embryos lead to 174 grown mice. Regarding the zebrafish case it is morally relevant if the eggs and semen “donors” and CRISPR-edited zebrafish models are sentient. And in the rhesus macaque case, the question concerns the 32 female monkeys, semen donors (number unknown), 59 surrogate monkeys and the CRISPR-edited monkeys, which resulted in eight miscarriages, four full-term stillbirths and 14 live-born monkeys (nine of these were mutants).

Because mice, zebrafish and rhesus monkey all belong to the vertebrata, the scientific evidence that these animals possess a subjective welfare and therefore are sentient is given. In all three cases, the question remains difficult to answer: at what stage of development the CRISPR-edited animals can have sentient experiences? This is especially relevant for the monkey case, because if the miscarriages and stillbirths died before they are sentient, they will not qualify for moral consideration within the ARV. However, it is an ongoing debate at which stage of development vertebrates are assumed to be sentient. Some scholars draw the line at the moment the animals take their first breath, others suggest to draw it already after the last third of the prenatal development.

Unfortunately, data is missing of exactly how many animals are involved in the three cases. This means that the ethical evaluation lacks precision regarding the number of animals and their exact welfare state. This is not uncommon, because scientific papers are usually too short to allow detailed information about the welfare of research animals. Nevertheless, from an ethical perspective, this is not only regrettable but a serious shortcoming, because a comprehensive ethical analysis and evaluation is only possible to a certain point.

7.3.2 How are the rights of the involved sentient animals affected?

Although the specific handling of animals is not mentioned and detailed information about the exact procedures, interventions and the animals’ welfare conditions are missing within short scientific publications, the descriptions are sufficient to recognize a large number of violations of animal rights – in fact, because the violations are legion, they will only be discussed exemplarily.

Regarding the setting of the experiments, it is relevant that most research animals have never lived in the wild. They are bred in captivity, serve human ends and die in captivity. In this context, their lives are strongly regulated according to human needs. Research animals cannot move freely, their circadian rhythm is adjusted to the human rhythm, they cannot choose or reject their mating partner (artificial insemination, embryo transfer) and for certain procedures they have to be fixed or anaesthetized. This means the right of freedom of probably all involved animals is violated.

Right of defence of female mice is violated in cases of invasive fertility treatments and their killing after mating to collect the embryos, and in stressful handling of surrogate mothers (e.g. surgery, embryo transfer, anaesthesia, post-operative discomfort). Regarding the knock-out mice, no information about possible harms is given. It is not possible to assess if any right of defence is violated.

The genetic editing of zebrafish involves stressful handling of donor fish (collecting eggs and semen) and it seems likely that zebrafish would experience periods of discomfort and lethargy due to hypoxia. In the cases of the CRISPR-edited zebrafish the affection of the right of defence is complex, because it is caused before the fish enters the moral community. But from the ARV it is wrong to breed animals that will likely have medical issues (e.g. brachycephalic syndrome within British bulldogs) or intentionally modify the genotype of an animal to achieve an animal model that expresses diseases.

The case of the induced muscle dystrophina in rhesus macaques, which involves invasive fertilization and obstetric procedures, shows a violation of the right of bodily integrity (right of defence). The acceptance of still births, miscarriages and difficult births puts a risk on the mother and therefore violates her right of defence. Further the separation of the mother and infants has a negative emotional effect on the infants and violates the right of freedom of the mother to care for her offspring. The risk that the increasingly reduced motor function may result eventually in paralysis and death clearly violates the right of defence of the CRISPR-modified monkeys.

To sum up, there is no doubt that the right of defence (right to life and bodily integrity) and the right to freedom are in all three cases violated in various (and not fully explored) ways. From the ARV these experiments are morally wrong if they cannot be qualified as exceptions, which has to be clarified in the next section.

7.3.3 Exceptions and other arguments to justify animal rights violations

As mentioned above (cf. 7.1), there are three exceptional cases which justify the violation of right of defence and right of freedom. These are (1) cases of self-defence (and deadly force), (2) when the rights holder gives her consent or (3) if the rights holder benefits from the violation (e.g. in a case of emergency). But none of these three exceptions applies to the three cases.

- i. First of all, none of the three experiments can be qualified as self-defence. Neither the mice nor the zebrafish nor the rhesus monkeys are attacking the scientists, so they could defend themselves in a way that causes serious bodily injury or death to the animals. A grey area would be a pandemic situation, where humans and animals are forced to stay in quarantine (restrict their right of freedom) or are forced to be vaccinated (violation of bodily integrity), if the person or animal in question is a potential source of danger for others and if this is the ultimate measure, to contain a disease. Because neither the mice nor the zebrafish nor the rhesus monkeys are a potential source of danger for the human beings, the justification of self-defence is not applicable.
- ii. Because neither the mice nor the zebrafish nor the monkeys are able to understand the complex research questions (some of them don't even exist before the experiment), the animals cannot consent to the experiment as a whole. Therefore, it is not possible to apply the consent criterion regarding the whole experiment. But cages, attachments and anaesthesia indicate, that animals don't participate freely and have to be forced to several, although not all, intermediate procedures.
- iii. In the case of the CRISPR-edited mice, none of the mice benefit from the experiment. It belongs to basic research focusing on the development of efficient and affordable method to create knock-out animals as disease models. The CRISPR-edited zebrafish and rhesus macaque serve as an *in vivo* model, to simulate and study the heterotaxy syndrome or to study and cure Duchenne muscular dystrophia in humans. If they get cured during the experiment, one might say that they are beneficiaries. But given the circumstances that they were bred with the intention to express a disease and that they are likely to be killed after the research or used for other experiments, this positive assessment is invalid in an overall assessment. Further, none of the other involved animals (sperm and egg donors, surrogates) benefit from the experiments.

In the context of veterinary medicine, it is argued that animal research is morally permissible or even required, because it is also beneficial for many other animals of the same species. Proponents of the ARV reject this argument, because according to their position, a just society should reject to sacrifice a minority for the benefit of the majority. The function of the fundamental individual rights of humans and animals is exactly to prevent such cases.

The bottom line from an ARV is that no argument can be made to justify the violation of right of defence or the right of freedom in any of the three cases, (1) because they are not cases of self-defence (and deadly force), (2) because the rights holders don't give their consent and (3) because none of the rights holders benefits from the violation.

Regarding the human side of the experiment some proponents of animal research argue that scientists also possess a right to scientific freedom. Some argue further that scientists and doctors have a duty to assist humanity as such and especially to assist and cure their patients (Blumer, 2004). As mentioned in Section 7.1, it has to be stated against this argument that the right of freedom can never trump the right of defence. This means for example that the right to

scientific freedom cannot overrule the right to bodily integrity or right to privacy. No psychologist is allowed to film someone during the night without her consent just because of his scientific interests. Nor is a food scientist permitted to poison someone to test a new product. Similarly, physicians are not allowed to kill one person to harvest organs to support his clients with them. The duty of doctors to assist simply stops when it implies the violation of a right of bodily integrity of others.

7.4 THE ANIMAL RIGHTS VIEW AND THE MORALITY OF BREEDING ANIMALS

What about the breeding of GMO animals or companion animals? Would these practices still be morally permitted within the ARV?

The similarities and differences between traditional breeding, genetic engineering and gene editing technologies are a complex matter and cannot be discussed comprehensively here. Nevertheless a few aspects will give insight into how the ARV will approach this issue. For the ARV the purpose of breeding is morally relevant and as the purposes animals are used for in science (e.g. basic and applied research, toxicology testing or gene pharming) are mostly not in the best interest of animals, they generally raise moral scruples for the ARV. Similarly, if companion animals are mainly bred for financial reasons as investment or business model, the rights view would morally condemn them. As the above-mentioned cases reveal the manipulation of the genome entails a potential health risk for the generated animals, it often involves the violation of the right of bodily integrity, during the process of harvesting oocytes or collecting donor cells. That's why they morally fall back compared to traditional breeding.

Whether breeding and keeping of companion animals are morally permitted in general is actually debated within the ARV. Some animal advocates condemn the domestication of animals and propose an "apartheid" policy that claims we should abolish all human uses of animals whatsoever. A second group recognize domestic animals and wild animals that live in the human domain as appreciated co-citizens and criticize only interactions that violate fundamental rights. In this case the companion animals or use of service or guarding dogs is not morally wrong per se (e.g. Donaldson and Kymlicka, 2011). But the legal property status of animals, the fact that we are allowed to buy and sell animals raise still more moral issues. The view presented in this chapter would probably accord to this second view. A third, intermediate position disapproves the new breeding of animals, but tolerates having animals from shelters or from finished animal research projects.

7.5 CONCLUSION AND OUTLOOK

What are the consequences of the animal rights position for animal research in general? Within the Animal Rights View, animal research is only permitted if the animals aren't harmed and no right of defence is negatively affected, such as

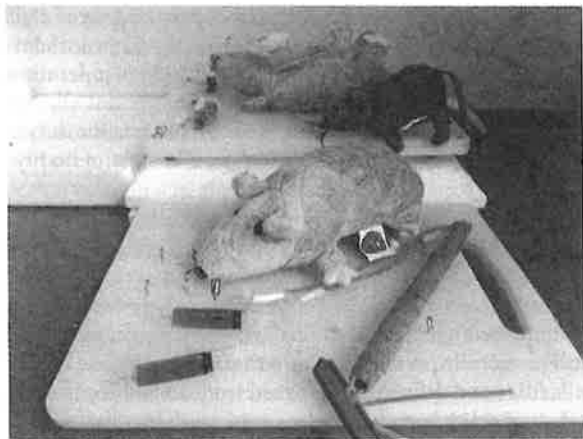


Figure 7.1 From an animal rights perspective the current practice of using research animals is very problematic. The goal is thus to end this practice as it violates the rights of the animals. A step in that direction is to focus the attention on one of the 3Rs: Replacement. One option is to, whenever possible, replace real animals with models of different kinds, in this case stuffed animals. (Photo Dorte Bratbo Sørensen.)

non-invasive behavioural or nutrition studies. All experiments that inflict pain or suffering or result in the death of animals are morally wrong. A permissible exception that may include a health risk for a treated animal is if the animal itself is ill and will benefit from testing a new therapy or medication. In this case the research is done in the best interest of the animal patient.

This also means that with regard to the 3Rs (Replacement, Reduction, Refinement) only the Replacement Principle would remain relevant to discuss. Because traditional animal research would be prohibited, a tremendous shift towards the development of alternative methods would be the case. Knowledge that could only be gained by harmful research has to be renounced. If these two factors – focus on alternative methods and waiver of some knowledge – would have a positive or negative impact for humanity compared to the actual situation remains an open empirical question. A realistic scenario has not been developed yet.

How far-reaching the consequences of the ARV are is still debated within the animal rights movement. In any case the ARV would have a huge impact on the society and our actual human-animal relationships that goes beyond animal research. Respecting fundamental, individual animal rights would strongly limit the use of animals in agriculture and entertainment such as zoos, circuses and hunting (Figure 7.1).

NOTES

- 1 Homepage of the NhRP: <https://www.nonhumanrights.org/who-we-are/> [retrieved 14.11.2021].
- 2 Contemporary proponents of the animal rights view are Donaldson and Kymlicka (2011), Cochrane (2018) or Korsgaard (2018).

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