

Animal Experiments in Research

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I. The importance of animal experiments for research

Number of laboratory animals: Germany and Europe

Animal experiments are conducted, inter alia, to investigate physiological processes, develop products and therapeutic techniques and verify product safety.

The Animal Welfare Report (Tierschutzbericht) (see module Animal Welfare Report) documents 2,265,489 test animals in 2004. In 2005 2,412,678 animals were used for experimental purposes in Germany, in other words an increase of some 147,000 animals. Most recent data also document an increase up to 2,692,890 test animals in 2008. Europe-wide too, the number of laboratory animals has risen in recent years. The **COM Report** (see module COM Report) put the number of vertebrates used for scientific purposes in Europe in 2005 at around 12.1 million; this means that roughly 1.4 million more animals were used in 2005 than in 2002. Taken together, mice and rats constituted - both in Germany and in Europe as a whole - the largest group of laboratory animals (approx. 80%), followed in second place in Germany by fish (around 7%), with rabbits coming in third (roughly 5%). **Non-human primates** (see module Non-human Primates) constituted 0.1 % of all laboratory animals. Since 1991 anthropoid apes (chimpanzees, gorillas, orang-utans) have not been used for experimental purposes. Nor were any experiments performed on **anthropoid apes** (see module Human Rights for Anthropoid Apes) in the member states of the European Union in 2002 and in 2005.

In various areas (for example in toxicological tests) the numbers of laboratory animals are declining. In basic research, however, the number of test animals has been on the rise again for some years now. The increase is attributable in particular to the growing use of **transgenic mice** (see module Transgenic Mice).

Alternative methods

Animal experiments can be replaced with **alternative methods** (see module Alternative Methods) in a variety of areas. For example, numerous experiments are currently performed on cell cultures. By way of differentiation from experiments on living organisms (in vivo) such "test tube" methods are referred to as in vitro. Computer simulations may also serve as a substitute for the use of laboratory animals, since they help to predict how substances will act on the body. The extent to which alternative methods may replace animal experiments in the near future is a matter of some controversy. At least in the field of **cosmetics research** (see module Cosmetics Directive), it is envisaged that safety testing on animals will be completely replaced by alternative test methods. Researchers point out, however, that in the future it will still not be possible to entirely do away with animal experiments - especially when it comes to testing pharmaceutical products: the complexity of an intact organism is necessary in order to verify all the effects of a substance. In the fields of neurobiological fundamental research and of research in infectious diseases, for instance, research with non-human primates is still irreplaceable at the current moment, according to **several researchers** (see module Non-human Primates).

Applicability of the results of animal experiments

It is only since the advent of the **modern era** (see module Modern Era) that animal experiments have been conducted on a significant scale. Since then a broad-ranging debate has raged on the acceptability of animal experiments. From the very outset of the debate, opponents of animal experiments have asserted that the insights yielded by animals cannot be applied to humans and are therefore largely useless. This criticism is directed both at the findings of basic research (e.g. the "mouse model") and at the results of drug tests performed on animals (see Section II). At issue was - and still is - the question of whether different species (such as human and mouse) react to the same substances in the same way on account of the structural and functional similarity of many organs or whether the effect of substances on organisms is more heavily species-specific. Were the latter to be the case, animal testing of substances would, for example, offer only an illusory sense of safety. History lends support to both standpoints: on several occasions the results of animal experiments have misled scientists into formulating incorrect research hypotheses (e.g. in research into **poliomyelitis (polio)** (see module Poliomyelitis) or lulled them into a false sense of security when testing product safety (as in the case of **Contergan (thalidomide)**) (see module Contergan). In other cases the effects observed in animal experiments did prove to be applicable to humans. The German Research Foundation (Deutsche Forschungsgemeinschaft = DFG), the central self-governing organisation that promotes research in Germany, estimates that animal experimentation can predict "desirable and roughly 70% of undesirable effects on humans" (DFG (2004): *Tierversuche in der Forschung*. Bonn: Lemmens Verlags- und Mediengesellschaft, 2004: 18).

II. Legal aspects of research on animals

1. Legally prescribed animal experiments

Before certain products - such as drugs and pesticides - can be licensed for marketing their provider must demonstrate that they are not harmful to human health or the environment. Similar testing regulations exist for production processes, waste substances etc. Animal experiments are prescribed by law in some instances as an integral component of such safety checks. A number of German laws contain regulations as to which products must be tested and how this is to be done before they can be brought to market. Yet many products are sold not only throughout Germany but also internationally, and they must therefore satisfy the safety standards of various countries. In order to avoid safety checks having to be repeated in every country where a particular product is sold, the countries agree upon testing procedures in accordance with which the safety checks are to be performed. The providers can then establish the product's safety under such a standard procedure and market it in all the countries that accept this procedure without having to conduct additional safety testing. Many EU-wide accepted testing procedures for the harmfulness and environmental compatibility of substances and production processes are contained in Annex V of the Directive on Classification, Packaging and Labelling of Dangerous Substances (67/548/EEC). The Organisation for Economic Cooperation and Development (OECD), an international trade organisation currently comprised of 32 member states, has also adopted recommendations for testing substances (OECD Guidelines for the Testing of Chemicals). Safety verification furnished in accordance with OECD standards is accepted in all OECD member states.

1.1. Legally prescribed animal experiments in Europe

On the **European level** there are a number of directives and regulations requiring animal experiments as part of the testing of substances and processes (Module 8). EU law takes precedence over national law in such cases. Providers may therefore be compelled by EU legislation to conduct animal experiments as part of safety checks, even if national laws do not require them.

1.2. Legally prescribed animal experiments in Germany

Animal experiments are also required by various **German laws** (see module National Laws) . In addition, there are laws that require safety verification without defining the procedure under which such proof is to be furnished. In these instances regulations setting out such procedures are adopted by government or administrative agencies. Regulations may also specify animal experiments. Some legally prescribed animal experiments do not need any further approval (see below) but merely require declaration - in other words, they must be reported to the competent authority. Animal experiments for research purposes, on the other hand, are always subject to approval.

2. Legal provisions to protect laboratory animals

Both in Germany and in many other countries - and indeed on the EU level - there are not only regulations governing when animal experiments must be performed, but also regulations that serve to protect laboratory animals. Such regulations define who may conduct animal experiments, the purposes for which they may

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be performed, how the laboratory animals must be kept and how they are to be treated during and after the experiment.

2.1. Council of Europe and European Union

On the European level both the European Union (EU) and the Council of Europe have adopted provisions to protect laboratory animals.

2.1.1. Council of Europe

Created in 1949, the Council of Europe is an organisation of European states currently numbering 47 members. The goals of the Council of Europe include: protecting human rights, safeguarding the rule of law, and harmonising social and legal practices in the member countries.

European Convention for the Protection of Vertebrate Animals used for Experimental and other Scientific Purposes

On 18 March 1986 the Council of Europe adopted the **European Convention for the Protection of Vertebrate Animals used for Experimental and other Scientific Purposes** (see module Convention of the Council of Europe) . The Convention invokes the conviction that man has a "moral obligation" to respect all animals and to show "due consideration for their capacity for suffering and memory", yet at the same time it accepts that "man in his quest for knowledge, health and safety has a need to use animals" (see Preamble). The Convention requires, for example, that animal experiments should only be performed if no alternative methods are available, i.e. if the goal of the experiment cannot be achieved without using laboratory animals (Art. 6). At the same time it calls upon the member states to promote research into other methods that could be used as an alternative to animal experiments (Art. 6, on the definition of alternative methods see below), thereby making it possible over time to increasingly replace animal experiments with alternative methods. A specific authorisation or declaration is required for experiments that are likely to cause the animal considerable enduring pain (Art. 9). In order to avoid unnecessary repetition of multiple experiments the parties to the Convention further undertake (wherever possible) to recognise the results of procedures carried out by another contracting party (Art. 29). The Convention was signed by Germany on 21 June 1988 and it entered into force in Germany on 1 November 1991.

2.1.2. European Union

The European Union is a grouping of European countries that currently numbers 27 member states. The member states transfer part of their sovereignty to the common organs of the EU. These are thereby empowered to take binding decisions for the member states in defined areas. The EU is authorised only to a limited extent to adopt animal welfare regulations: animal welfare is not - in contrast to environmental conservation - a community objective of the EU and it is therefore handled by the member states themselves. The EU may only adopt animal welfare regulations that are binding on all member states, if this serves to prevent trade barriers and distortions of competition arising in the Single European Market. For if the different EU countries were subject to regulations of differing severity regarding the keeping of production animals and laboratory animals, providers from countries with stricter requirements would be disadvantaged in the Single European Market due to the higher costs of production and keeping animals. In order to counter such disadvantages the EU may adopt animal welfare regulations that are binding upon all member states. However, not all the animal experiments performed have such "internal market relevance". For example, whether or not animal

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experiments are conducted in accordance with EU-wide standards as part of (further) education or in basic research at universities has no influence on the Single European Market. For this reason the EU cannot adopt regulations in these areas.

Directive 86/609/EEC

Directive 86/609/EEC (see module Directive 86/609/EEC) of 24 November 1986 is important for the subject "animal experiments". With respect to the provisions governing the origin, housing and care of laboratory animals, the requirements placed on persons and institutions that perform animal experiments and the standards for the conduct of experiments, the directive is based heavily on the Convention of the Council of Europe (see above). The directive similarly requires the reciprocal recognition of test results by the member states (Art. 22) and the non-use of animal experiments if alternative methods can yield the desired outcome (Art. 7). The contracting parties further undertake to promote the development and evaluation of alternative techniques (Art. 23, see below). The animal welfare standard prescribed by the EU is below the level of various national provisions. The contracting parties therefore retain the option of applying more rigorous national standards (Art. 24). The directive has been translated into national law: the German Animal Protection Act (Tierschutzgesetz) satisfies the requirements of the directive.

Resolution 86/C 331/02

Taking up the idea of ensuring that animals enjoy protection, the representatives of the governments of the member states of the European Union, meeting within the Council, published a resolution at the same time as Directive 86/609/EEC. This is intended to ensure that no less rigorous standards are applied to the conduct of animal experiments that do not fall within the scope of the Directive on Animal Experiments (for example as part of further education and training). In addition, the resolution requires that animal experiments in the member states should only be permitted for certain purposes and that animal experiments carried out as part of further education and training should principally be conducted at universities or other educational institutions of an equivalent level. Unlike the directive, the resolution has no legally binding force.

Reduction in the number of legally prescribed animal experiments

The member states of the European Union are obliged by both the Directive on Animal Experiments, Directive 86/609/EEC (Art. 23), and the corresponding Convention of the Council of Europe (Art. 6) to support research into the development of alternative methods. To this end centres exist on both the national and European level for the assessment of **alternative and complementary methods** (see module Alternative Methods) . The reduction of unnecessary multiple tests through the **re-use of test records from safety checks** (see module Re-use of Test Documentation) is also intended to help minimise the number of legally prescribed animal experiments

European Constitution

On 29 October 2004 the heads of state and government of the EU member states signed a Treaty establishing a Constitution for Europe. The **Protocol on Protection and Welfare of Animals dated 2 October 1997** (see module Protocol on Protection and Welfare of Animals dated 2 October 1997) was incorporated into the draft European Constitution as Article III-121. In the Protocol and Article the member states and the Community commit to "paying full regard to the welfare requirements of animals" when formulating and implementing Community policy, while respecting the legislative or administrative provisions and customs of

the member states ("relating in particular to religious rites, cultural traditions and regional heritage"). It was originally envisaged that the European Constitution would come into force in 2006. However, following the draft constitution's rejection by the citizens of France and the Netherlands, the ratification process (i.e. the process by which the member states accept the treaty) has initially been extended until mid-2007.

2.2. Germany

As has already been mentioned, both the Convention on Animal Experiments of the Council of Europe and the EU Directive on Animal Experiments permit the contracting parties to adopt more rigorous national provisions governing the conduct of animal experiments in research. By international standards the corresponding provisions of the **German Animal Protection Act (TierSchG)** (see module Animal Protection Act) - principally §§ 7-9 - are considered relatively restrictive. The Act defines animal experiments as "procedures or treatments for experimental purposes" either "on animals, if they may entail pain, suffering" or "harm for such animals or on the genetic make-up of animals, if they may entail pain, suffering or harm for the genetically modified animals or their carriers" (§ 1 Para. 1). Animal experiments are prohibited in Germany for certain research purposes, for example "for the development or testing of weapons, munitions and associated devices" (§ 7 Para. 4) or "for the development of tobacco products, detergents and cosmetics" (§ 7 Para. 4). On the other hand, they are permitted (1) for research into diseases, (2) for the identification of environmental hazards, (3) as toxicity tests and (4) in basic research (§ 7 Para. 2). In these research fields experiments on vertebrate animals are subject to approval (§ 8), meaning that an application for every single animal experiment must be filed with an approval agency. **Experiments on invertebrates** (see module Experiments on Invertebrate Animals) , on the other hand, do not require approval but are merely subject to mandatory declaration in certain cases. Two requirements, in particular, are scrutinised as part of the approval procedure: (1) the planned animal experiment must be indispensable for the attainment of the declared goal of the experiment (§ 7 Para. 2, § 9), and (2) the stresses on the laboratory animals must be ethically acceptable in view of the higher-order status of the experiment's purpose (§ 7 Para. 3).

Indispensability and ethical acceptability

An animal experiment is considered to be indispensable if a declared experimental goal cannot be achieved without it. The various aspects of the indispensability of an animal experiment are illustrated on the basis of the so-called **3R principle of experimental research** (see module 3R principle of Russel and Burch) with animals: Replacement, Refinement, Reduction. If an experimental goal can also be achieved without recourse to animal experimentation, e.g. through the use of cell cultures or computer simulations, or through the use of animals that are lower on the phylogenetic family tree, the requirement for indispensability is not satisfied (replacement); animal experiments that could be avoided through improved statistical design of the research project (reduction), or that could be structured in such a way as to inflict less stress on test animals (refinement), are similarly not considered indispensable. The second requirement, namely that the planned animal experiment must be **ethically acceptable** (see module Ethically Acceptable) , is geared to the high-order status of the experiment's purpose. Experiments on vertebrates that lead to "protracted or repeated considerable pain or suffering" for the test animals are only considered to be justified if they are of "outstanding importance for vital needs of humans or animals, including the solving of scientific problems" (§ 7 Para. 3)

Approval procedures

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Researchers planning an experiment involving vertebrate animals must submit a corresponding application for approval to the responsible medium-level authority (regional government, regional council) (§ 8, § 15 Animal Protection Act). Since 1986 the agency for expert assessment of experimental projects has been supported by a local Animal Protection Committee (§15 Animal Protection Act). It is envisaged that this should be composed predominantly of researchers who are able to arrive at an informed evaluation of the indispensability and ethical acceptability of animal experiments on the basis of their experience. One-third of the members must come from the recommended lists of animal welfare organisations. The verdict of the Animal Protection Committee is not binding on the approval agency.

Animal Protection Act and freedom of research

Although the Animal Protection Act prescribes mandatory approval for animal experiments in research, the legality of this provision has often been doubted in the past. Such doubts are founded on the fact that freedom of research is a fundamental right granted without qualification (Art. 5 Para. 3 Sentence 1, Basic Law [GG]). Unqualified fundamental rights cannot be restricted by simple laws, but only for the sake of other objects of constitutional protection. Prior to 2002 animal welfare was not under constitutional protection and hence the Animal Protection Act was merely a simple law. In accordance with constitutional logic, it was therefore not possible to incorporate into it provisions aimed at restricting unqualified fundamental rights such as freedom of research (or equally religious freedom or artistic freedom). The question thus presented itself as to whether the legally prescribed approval practice might be unconstitutional. The question was not resolved by the courts, although in 1994 a corresponding question was brought before the **Federal Constitutional Court** (see module Federal Constitutional Court) . In view of these concerns the authorities practised a "constitutionally compatible interpretation" of the Animal Protection Act, meaning that the approval agencies did not review applications on the basis of objective criteria (which would have been unconstitutional), but merely checked whether the applicant had demonstrated the indispensability and ethical acceptability in a scientifically plausible manner ("qualified plausibility check"). The opinion expressed in pertinent commentaries on the Animal Protection Act is that the task of the approval agencies changed with the adoption of animal protection as a constitutional goal.

Animal protection as a constitutional goal

Constitutional goals are goals that a state sets for itself. Just like basic rights they constitute objects under constitutional protection, yet they differ from the former inasmuch as they do not establish a subjective right and are not enforceable. Animal protection has been a constitutional goal since 2002. Art. 20a of the Basic Law states: "Mindful also of its responsibility toward future generations, the state shall protect the natural bases of life and the animals by legislation and, in accordance with law and justice, by executive and judicial action, all within the framework of the constitutional order. " The words "and animals" were only included in the existing article in 2002. Prior to this, i.e. from 1994 to 2002, Art. 20a was merely concerned with "protect[ing] ... natural resources" (environmental protection as a constitutional goal). The Joint Constitutional Commission of the Federal Parliament and Federal Council (Gemeinsame Verfassungskommission von Bundestag und Bundesrat), which was initiated in the context of constitutional reform following German reunification and ultimately spoke out in favour of environmental protection as a constitutional goal, had already contemplated **animal protection as a constitutional goal** (see module Animal Protection as a Constitutional Goal) .

However, it rejected a corresponding constitutional amendment. Its rejection was based upon the concern that animal protection as a constitutional goal would exceed the bounds of a constitution otherwise geared exclusively to humans and that this "shift in values" could have consequences more far-reaching than desired (module 21). The decisive factor in the constitutional amendment - eight years after this negative stance - was exclusively the striving "[to] strengthen the animal protection already standardised by simple law", since this could hitherto "scarcely be effectively enforced against other objects of legal protection with constitutional status, such as the freedom of research and academic freedom" (Parliament Printed Materials [BT-Drucks.] 14/9090).

Animal protection as a constitutional goal and animal experiments

Since animal protection has enjoyed constitutional status in Germany, legal provisions on animal welfare intended to restrict freedom of research are possible from a constitutional perspective. Yet there is dispute as to whether the already existing provisions governing the approval practice of agencies are automatically reinterpreted following the constitutional amendment. Two opposing positions are put forward. Commentaries on the Animal Protection Act (and the **court practice of Giessen Administrative Court** (see module Court Practice of Giessen Administrative Court)) assume that with the designation of animal protection as a constitutional goal the temporary device of a "constitutionally compatible interpretation" of the Animal Protection Act was rendered superfluous. It is their supposition that it should therefore now be possible to interpret the corresponding paragraphs - even without amendment of the Act's wording - as a more far-reaching intervention in freedom of research. It would thus be incumbent upon agencies to subject the indispensability and ethical acceptability of animal experiments for which applications are submitted to objective scrutiny and no longer merely to check whether the applicant had demonstrated them in a scientifically justified manner. If this understanding establishes itself in approval practice, it is conceivable that in the future a considerably larger number of animal experiments will not be authorised. The objection raised against this understanding is that the wording of the Act (now as before) states that an animal experiment is to be approved in those cases where the applicant has demonstrated its indispensability and ethical acceptability in a scientifically justified manner. Whilst it is true that after the constitutional amendment lawmakers can adopt more rigorous provisions governing animal welfare in research, it is not possible to interpret the existing text of the Act contrary to its wording. It remains to be seen whether and if so to what extent the existing approval practice will change as a consequence of animal protection acquiring the status of a constitutional goal. In 2003 and 2004 a total of 16 applications to conduct experiments were rejected throughout Germany; in these cases the pain, suffering or harm to the test animals was categorised as ethically unacceptable in view of the research objective or the indispensability of the experiments was deemed not to have been sufficiently substantiated (cf. Tierschutzbericht 2005: 80). In 2001 and 2002 altogether 2 applications for experiments were rejected (see Tierschutzbericht 2003: 67).

2.3. Switzerland

Worldwide, Switzerland is the only country, which assigns a constitutional protection to the dignity of animals and which also ascribes dignity to plants. Article 80 of the **Swiss federal constitution** (see module Swiss federal constitution) contains regulations concerning the protection of animals. In 1992, the term “ **dignity of living beings** ” (see module Dignity of living beings) was integrated into the federal constitutions by means of

article 120 (non-human gene technology), which refers to animals and plants. Section 2 of this article says that the “Confederation shall legislate on the use of reproductive and genetic material from animals, plants and other organisms. In doing so, it shall take account of the dignity of living beings as well as the safety of human beings, animals and the environment, and shall protect the genetic diversity of animal and plant species.” This article was codified for the first time in the **Act on Genetic Engineering** (see module Act on Genetic Engineering) of 21 March 2003 which, amongst others, is to “guarantee the dignity of living beings” (unofficial translation). The breeding of genetically modified animals is considered under the definition of animal experiments and is subject to authorization. The term “dignity of living beings” has also been specified in the **Protection of Animals Act (TSchG)** (see module Protection of Animals Act and Protection of Animals Ordinance) of 16 December 2005, which was enacted in 2008, as well as in the **Protection of Animals Ordinance (TSchV)** (see module Protection of Animals Act and Protection of Animals Ordinance) of 23 April 2008; both of these almost exclusively refer to vertebrates. The Protection of Animals Act reads that the dignity was the “intrinsic value of the animal, which has to be respected in the handling of the animal. The dignity of the animal is being disrespected if a burdening of the animal cannot be justified by outweighing interests. A burdening is at hand if the animal is, in particular, being exposed to pain, suffering or damages, if it is being put into a state of fear or being humiliated, if its outer appearance or its capabilities are being intervened substantially or if it is being instrumentalized excessively.” (unofficial translation) It is questionable how an animal detects whether it is being humiliated when it is not being afflicted with pain, suffering or damages and when it does not fear anything. Critics also put into question the intrusion into the outer appearance as additional human-subjective approach to the burdening. Animal experiments allow for restricted breaches of dignity: “Animal experiments, which cause the animal pain, suffering or damages, frighten it, substantially impair its well being or may disrespect its dignity in another manner, are to be constrained to the indispensable measure.” (Article 17) (unofficial translation).

III. Core questions in the ethical debate

The moral status of animals and humans

The answer to the question of whether animal experiments are ethically acceptable does not rest merely in the fact that for many people (for example for consumers or patients) they are useful, possibly even life-saving. On the contrary, it is necessary to ask whether and to what extent human benefit justifies the suffering and death of animals. This is crucially dependent on the moral status enjoyed by animals in comparison to man.

Different theories provide a variety of answers to the question of on what the moral status of a living organism depends and which living organisms therefore have a different moral status. In this respect differences in status may be presumed both within the human species (for example between an embryo in an early stage of development and a grown human being) and - as is relevant to the present context - with an eye to different species.

The argument surrounding the moral status of animals is illustrated below on the basis of three clearly defined positions and the objections that they provoke:

- (1) animals do not have a genuine moral status and are therefore not deserving of protection for their own sake,
- (2) all living organisms that have a similar capacity for suffering and are able to develop interests (whether humans or animals) have a comparable moral status and
- (3), as a "middle" position, animals have a genuine moral status, although this is subordinate to the moral status of man.

1. Animals do not have a genuine moral status: they are not deserving of protection for their own sake

The view that man enjoys a special status from the moral standpoint or that humans are the only living creatures with a morally compelling inherent value has various **historic roots** (see module Anthropocentrism: Historical Origins).

If man is the only living creature that "counts from the moral standpoint", he is under no obligation to respect animals: their use or harm does not violate any ethical precepts. Yet even within the framework of such a radically anthropocentric - i.e. human-centred - perspective obligations may be established in relation to animals. In this case, however, obligations do not exist vis-à-vis the animals themselves (since they have no inherent moral value); rather, they are indirect or derived obligations, in other words obligations that man has in relation to animals but which are grounded in man's obligations to himself or to his fellow men.

Justification of the prohibition of cruelty to animals without recourse to an inherent moral status of animals was provided inter alia by Immanuel Kant within the scope of his ethics. Kant's argument is to be found in a chapter of "Metaphysik der Sitten" ("Metaphysics of Morals") (§§ 16-18). Kant does not substantiate the prohibition of animal cruelty on the basis that anyone who torments animals is doing them an injustice, but rather with the assertion that the person responsible for cruelty to animals is weakening himself in his capacity to commit moral acts. He is thus in violation of an obligation that he has to himself. What is more, animal cruelty

impairs the ability to empathise with the suffering of others (including other humans). Since this capacity is, however, "very useful" for man's co-existence in a society, anyone who wilfully puts it at risk is in violation of an obligation to his fellow men. Such arguments against animal cruelty are referred to as **brutalisation arguments** (see module Brutalisation Arguments) or pedagogical arguments.

The understanding that the rough and cruel treatment of animals is not wrong per se, but only indirectly through the consequences for one's own moral character and the co-existence of mankind, was criticised early on, inter alia by Arthur Schopenhauer. Numerous authors now consider it more plausible to suppose that harm caused to living creatures with a capacity for feeling is morally questionable as such and vis-à-vis the animals themselves. With this in mind they argue that an appropriate treatment of animals is a matter of justice, not compassion. Yet there can only be justice for animals if they have a genuine moral status, in other words a morally obliging inherent value.

2. Animals have their own moral status

2.1. Animals and humans have a comparable moral status

Two theoretical models have emerged of late asserting that the moral status of humans and of animals with a capacity for feelings and/or interests is identical. These approaches, referred to as the animal interests position and the animal rights position, currently dominate the debate surrounding the appropriate treatment of animals.

2.1.1 Animal interests position

Peter Singer (see module Peter Singer) makes the moral status of living organisms dependent upon their capacity to have interests (for example in survival and freedom from pain). All living creatures that have interests in the same way have the same moral status.

This has two consequences: an upward revaluation of the moral status of animals capable of having interests and a downward revaluation of the moral status of human organisms that are unable or have a reduced capacity to have interests. Research on human embryos, for example, would no longer pose an ethical problem (since embryos do not yet have an interest in freedom from pain or survival), whereas painful experiments on mice would constitute a serious moral evil. In his book "Animal Liberation" Singer coins the phrase "**speciesism**" (see module Speciesism) to describe the view that living creatures such as humans and mice with an equal interest in a pain-free existence could have such a different "value" that the one can be used to benefit the other. For Singer speciesism is a form of discrimination, just like racism or sexism: one group of living creatures is disadvantaged by another without the existence of any morally relevant reasons. Speciesism is thus a form of group egoism of mankind directed against non-human creatures.

What are the implications for the field of animal experiments? Singer does not support an absolute ban on animal experiments (in contrast to the proponents of animal rights). Nor does he speak out in favour of an absolute ban on experiments on humans. Due to their self-awareness and awareness of the future (most) people, in Singer's assessment, have a stronger interest than animals in not being misused as research objects. What is more, humans attach significantly greater importance than animals to their own survival on account of their **orientation towards the future** (see module Preservation of life and avoidance of pain). Based on man's more extensive interests, Singer believes that to a certain extent the use of animals in biomedical experiments is more justified than the use of human subjects. However, Singer is of the opinion that in moral terms experiments

conducted on humans who - due to a lack of cognitive and emotional faculties - have a limited capacity to have interests comparable to that of higher animals (for example infants or the severely mentally handicapped) are of an equal status to certain animal experiments. Singer's position is pathocentric, meaning that he calls for the attribution of an equal moral status to all living creatures with a capacity for feeling. Yet it has long been disputed whether animals are capable of feeling at all and, if so, the extent to which they have this capacity. In the modern era it was widely held that animals were **incapable of thinking or feeling** (see module Animal Soul).

2.1.2 Animal rights

In accordance with the "rights view", as it is referred to by Tom Regan, its founder, the essential quality that a living organism must exhibit in order to be a bearer of rights is its "being the subject of a life". Every living creature with its own individual wellbeing has an inherent value and is therefore not merely a means for foreign ends. To this extent the animal interests position (see above) and animal rights position are similar. The call for **animal rights** (see module Animal Rights) , however, envisages further-reaching consequences than the call to take account of both animal interests and human interests. In contrast to the animal interests position, the rights position asserts that all living creatures that are the experiencing "subject-of-a-life" should be protected by individual rights. At stake here, then, is the question of whether the concept of rights - as it exists with respect to humans - can and should be extended to parts of the animal world. Were animals to possess individual moral rights like humans, animal experiments would then be ruled out even if they promised an outstanding benefit - just as (forcibly conducted) experiments on humans are unacceptable under all circumstances irrespective of the benefit for the common good. Proponents of a rights position therefore reject animal experiments just as they do the consumption of meat in general.

One of the objections sometimes raised against the rights position is that rights as such only exist as a consequence of their mutual recognition (which animals are not capable of). Why should animals have rights if they lack insight into their significance and the possibility of acting accordingly? Animal rights supporters counter this objection with the "argument from marginal cases": nor do human beings have to be morally capable and rational in order to be the bearers of rights (e.g. infants, severely mentally handicapped persons or coma patients). In these instances the legal profession would ensure protection of their rights. The call for **human rights for anthropoid apes** (see module Human Rights for Anthropoid Apes) is a form of minimal requirement for proponents of the animal rights position and animal interests position. Experiments on primates are generally considered to pose special ethical problems if they could result in an increase in the test animals' **mental capacities** (see module Neural Grafting). Special precautionary measures are therefore needed in this case.

2.1.3 Compassion for animals

As the most prominent representative of ethics of compassion, Arthur Schopenhauer, differing from representatives of the animal interests and animal rights position, sets aside the attribution of a moral status. By doing so, compassion ethicists attempt to bypass presuppositions concerning commonly shared values such as human dignity. This is due to the fact that these presuppositions are to constitute moral statuses while they are at the same time not being accepted or cannot be accepted by everyone.

Similar to Singer, for Schopenhauer the circle of such members of a moral community who are worthy of protection is constituted of those beings capable of suffering. By means of her **compassion** (see module Compassion) with other creatures, the human being recognizes the worthiness for protection of the vis-à-vis and the responsibility to protect this vis-à-vis from suffering. Living beings capable of suffering also include animals whose need for protection Schopenhauer nonetheless esteems to be lower than that of the human being. This owes to the fact that a living being's ability to suffer is dependent upon its intelligence and that it is hence the human being who possesses the highest quality of suffering.

According to this, meat consumption and the keeping of farm animals are legitimate as long as a death free of pain is warranted and the consumption is essential for survival, and, in the second case, the keeping of the animals is not excessive. Schopenhauer generally objects animal experiments, which cause suffering for the animals. Analogously to the justification of meat consumption, he nonetheless allows for animal experiments if they cause almost no pain and are essential for the survival of the human being.

Based on Arthur Schopenhauer's theory, Ursula Wolf developed the approach of a generalized compassion as an extension of the ethics of compassion. Apart from values and the assignment of status, this approach is characterized by its attempt to justify rights and obligations for the reduction of suffering. Schopenhauer had spared a justification of rights and obligations; for him, the basic rules of ethics are derived from compassion.

Wolf, by contrast, derives from compassion duties to protect concerning all living beings capable of suffering; this does, however, only apply to human beings since only human beings have at their disposal the necessary means for reflection for moral action. In comparison to Regan's animal rights position, Wolf's obligations rest on the foundation of compassion, while Regan links rights and obligations to the living beings' inherent value. Those people are members of a moral community who have at their disposal the **ability to suffer** (see module Ability to suffer). The higher dimension of protection of those living beings that have an, at least basal, self-conscience needs to be kept in mind. Overall, Wolf refuses a differentiation in status between humans and animals by not considering the **empirical rationales** (see module Empirical Justifications) as substantive and by generally regarding all living beings capable of suffering as equally worthy of protection.

Concerning the issue of the legitimacy of animal experiments, the following standpoint arises in Wolf's argumentation: The higher value of the human being based on empirical facts such as an allegedly higher ability to suffer due to her intelligence is rejected by Wolf as morally irrelevant; according to Wolf, they do not justify a gradation in status and hence no animal experiments which cause suffering to animals.

Similar to proponents of the animal rights position, approaches to the ethics of commission are oftentimes being criticized by means of the argument that moral consideration is only sensible concerning those living beings that are capable of moral consideration; this means that due to their capability, only human beings should be included in the circle of those that are directly worthy of protection. Wolf replies to this point that the specific capability of human beings to moral action should also be applied toward animals exactly because human beings have such capability at their disposal.

2.1.4 Biocentrism

Biocentrism asserts that all living organisms, i.e. not only those capable of having feeling and interests, are morally relevant and deserving of protection for their own sake. Yet the unlimited protection of all life (the life of not only animals and plants, but also bacteria and other single-cell organisms) appears impossible. This

may explain why there is hardly any call for unambiguous and radical measures in the context of biocentrism. The most well-known proponent of a biocentric position is Albert Schweitzer. Schweitzer himself did not categorically reject animal experiments, but sought to appeal for a generally more gentle treatment of animals (and plants).

A middle position can be identified between the two extreme positions of animals do not have a genuine moral status (cf. 1) and the moral status of animals and humans is the same (cf. 2.1).

2.2 The moral status of animals is subordinate to the moral status of humans

The theory that animals have their own moral status and that direct moral obligations therefore exist vis-à-vis animals, yet their moral status is as a matter of principle subordinate to the moral status of humans, is sometimes referred to as the double standard theory. The term "double standard" is intended to imply that while there are obligations towards both humans and animals, the respective obligations are different. Although the double standard is in some ways difficult to justify (it cannot, for example, escape the reproach of speciesism, see above), this model nevertheless probably approximates most closely the everyday understanding of an appropriate relationship between humans and animals. While animals would be deserving of protection for their own sake under this theory, their interests (in freedom from pain, survival etc.) would, however, - if they conflicted with human interests - be subordinate. All in all, this would give rise to an obligation to at least respect animals provided this did not infringe upon major human interests. At the same time, their use in scientific research (and also in the food industry) could be considered ethically acceptable overall. The Animal Protection Act, and in particular the requirement to demonstrate the indispensability and ethical acceptability of animal experiments, would appear to be roughly aligned with this understanding. The philosopher **Jürgen Habermas** (see module Jürgen Habermas) submitted a suggestion of what the reasoning of such a position could be. He allows a genuine moral status to animals, which depends on the level of social interaction with humans. This seems to display well that the moral intuition of human behaviour is especially relevant towards more sophisticated animals.

Also the animal protection act, especially the obligation to produce proof of indispensability as well as the ethical tenability of the animal experiments, approximately confirms this understanding.

Authors

Animal Experiments in Research

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The importance of animal experiments for research

Written by Verena Vermeulen (2006), revised by Birte Herrfurth-Rödiger (2007), revised by Andrea Wille (April 2009), revised by Andrea Wille (September 2009), revised by Andrea Wille (October 2009)

-

Legal aspects of research on animals

Written by Verena Vermeulen (2006), revised by Birte Herrfurth-Rödiger (2007), revised by Andrea Wille (April 2009), revised by Andrea Wille (September 2009), revised by Bastian Reichardt (May 2010)

-

Core questions in the ethical debate

Written by Verena Vermeulen (2006), revised by Birte Herrfurth-Rödiger (2007), revised by Aurélie Halsband (May 2010)

Modules

Modules of Animal Experiments in Research



3R principle of Russel and Burch

3R principle of Russel and Burch

The 3R principle (Replacement, Refinement, Reduction) was developed by William Russel and Rex Burch in their 1959 book "The Principles of Humane Experimental Technique". It refers to measures aimed at reducing the number of test animals and the stress inflicted on such animals: the generic term replacement encompasses those measures that lead to the replacement of animal experiments (with experiments on cell cultures, computer simulations).

Refinement denotes experimental approaches that minimise the suffering of laboratory animals. The term reduction alludes to reduction of the number of animal experiments through statistical optimisation and intelligently designed experiments.

Various institutions that sponsor research now link the award of development funds to a research orientation towards the 3R principle - including, for example, the European Science Foundation (ESF), the association of European scientific organisations.

The centres for validation of replacement and complementary methods (ZEBET, ECVAM) as well as the "World Congress on Alternatives and Animal Use in the Life Sciences" held every three years similarly define their remit and objectives on the basis of the 3R principle.

In November 2005 industrial associations and the European Commission adopted the 3Rs Declaration, which is intended to express a common desire to develop and implement alternative methods and establish a partnership-based cooperation with a view to achieving this goal.

Russel, William M.S. / Burch, Rex L. (1959): The Principles of Humane Experimental Technique. London: Methuen, especially 69-154.

European Science Foundation (ESF)

Centre for Documentation and Evaluation of Alternatives to Animal Experiments (ZEBET)

European Centre for the Validation of Alternative Methods (ECVAM)

5th World Congress on Alternatives and Animal Use in the Life Sciences

3 Rs Declaration



Ability to suffer

Ability to suffer

Wolf connects the ability to suffer with the condition of a "structural relationship between feeling and wanting", meaning the ability to experience painful situations and to be able to react to these fendingly in the course of a learning process.

Wolf also introduces the additional criteria of the ability to transfer what has already been learnt and to develop a self-conscience of higher living beings, which constitutes an additional moral need for protection.

Two aspects are central to Wolf's definition of the ability to suffer: Firstly, the expressive powers of pain of other living beings toward the human being is only an indication of a worthiness of protection; its absence, however, does not necessarily justify that the affected living beings do not feel any pain and it would thus be for members of the moral community to make them subject to damage. Secondly, Wolf's approach is characterized by the fact that empirical differences concerning the dimension of suffering, which can be experienced by the respective moral subject, in opposition to Arthur Schopenhauer do not justify any moral gradation in the worthiness of protection. A moral subject's ability to suffer, be it an animal or a human being, can only in rare exceptions be weighed against a higher moral good.

Wolf, Ursula (1990): *Das Tier in der Moral*. Frankfurt a.M.: Klostermann.

Wolf, Ursula (1997): *Haben wir moralische Verpflichtungen gegenüber Tieren?* In: Krebs, Angelika (Hg.): *Naturethik im Überblick. Naturethik: Grundtexte der gegenwärtigen tier- und ökoethischen Diskussion*. Frankfurt a.M.: Suhrkamp, 47-75.



Act on Genetic Engineering

Act on Genetic Engineering

It was particularly the discussion concerning the creation, further breeding and use of genetically modified animals that raised the question about the respect for the dignity of the living being. Especially the field of genetic engineering has a high expenditure of animals and the experiments' impact on the animals is difficult to predict. There is further the possibility of transgressing the species barriers. The reliability of the experiments hence demands a balancing of legally protected interests between the benefit for humans and the protection of the animal.

Act on Genetic Engineering (GTG) (German only)

A joint statement by the Federal Ethics Committee on Non-Human Biotechnology (ECNH) (Eidgenössische Ethikkommission für die Gentechnik im ausserhumanen Bereich (EKAH)) and the Committee on Animal Experiments (Eidgenössische Kommission für Tierversuche (EKTV)) concerning the concretization of the dignity of the living being for the animal (German only)



Alternative Methods

Alternative methods

Alternative methods or replacement and complementary methods are those that replace live test animals with "in vitro" techniques or computer simulations or reduce the number of test animals.

In Germany the "Centre for Documentation and Evaluation of Alternatives to Animal Experiments" (ZEBET, established in 1989) maintains a database of alternative test methods that can be used instead of officially

<http://www.drze.de/in-focus/animal-experiments-in-research> (17)

prescribed animal experiments. The Centre also checks the relevance and reproducibility of alternative test methods (a process known as validation) and awards development funds for the study of alternative methods to animal experiments.

On the European level the "European Centre for the Validation of Alternative Methods" (ECVAM, established in 1992) similarly provides informational material on already established replacement and complementary methods (for example in the form of the SIS database) and validates alternative methods.

In the long term the intention is that through the work of the validation centres animal experiments should be replaced by alternative methods in safety assessments and toxicological studies.

In 2002 four alternative methods were for the first time included in Annex V of the Directive 67/548/EEC; in 2004 the OECD incorporated them into the OECD Guidelines for the Testing of Chemicals.

Validation studies are highly time and cost intensive. The validation process takes roughly eight to ten years until international government acceptance. A uniform international concept exists for the conduct of validation studies:

In the first place, it must be demonstrated that the alternative test method delivers reproducible results in different laboratories and over a prolonged period. Secondly, it must be shown that the test results of the alternative method are in concordance with those of the established animal experiment and that the alternative method therefore lends itself to assessment of the risk for humans and the environment.

Centre for Documentation and Evaluation of Alternatives to Animal Experiments (ZEBET) AnimAlt-ZEBET

European Centre for the Validation of Alternative Methods (ECVAM) / Sis

Federal Ministry of Education and Research (BMBF) High Tech statt Tiere (High Tech instead of Animals) Schöffl, Harald / Spielmann, Horst / Gruber, Franz P. / Appl, Helmut / Harrer, Friedrich / Pfaller, Walter / Tritthart, Helmut A. (Hg.) (2000): Forschung ohne Tierversuche 2000, Wien: Springer-Verlag (Ersatz und Ergänzungsmethoden zu Tierversuchen).



Animal Protection Act

Animal Protection Act

A legal prohibition of animal cruelty is found for the first time (leaving aside state laws) in the Strafgesetzbuch des deutschen Reiches [Criminal Code of the German Reich] from 1871 (§ 360 No. 13). This law is oriented wholly towards an anthropocentric understanding, i.e. one that is concentrated on humans. The law threatens a fine or imprisonment for anyone who "publicly or in an offensive manner is maliciously cruel to or roughly mistreats animals." An indicator of the fact that what is stake here is protection of public morals rather than protection of the animal is that the focus is still on the public aspect and the basic mindset of the perpetrator ("cruel", "roughly").

The first German Animal Protection Act in its own right (the aforementioned prohibition of animal cruelty formed part of the Criminal Code) was adopted in 1933. The Act declares its support for the "protection of the animal for the animal's sake", in other words for so-called ethical animal protection. Under the Act of 1933 cruelty to animals is a criminal offence even if does not occur in public. Provisions are included for the first

time regarding the conduct of animal experiments (§§ 5-8): permission for such experiments is linked to a number of conditions, including the expertise of the leader of the experiment.

Commentaries on the Animal Protection Act (including its historical development):

Hirt, Almut / Maisack, Christoph / Moritz, Johanna (2003): Tierschutzgesetz. München: Franz Vahlen.

Kluge, Hans-Georg (Hg.) (2002): Tierschutzgesetz. Stuttgart: Kohlhammer.

Animal Protection Act (TierSchG) as amended 18.12.2007



Animal Protection as a Constitutional Goal

Animal Protection as a Constitutional Goal

After the Joint Constitutional Commission (Gemeinsame Verfassungskommission) had spoken out against animal protection as a constitutional goal, corresponding initiatives were repeatedly brought before the Federal Parliament or the Federal Council in the years thereafter:

For example, by the FDP faction in the Federal Parliament on 14 December 1998 ("Within the scope of applicable laws animals are protected against avoidable suffering and harm" as Art. 20a Para. 2 Basic Law), by the PDS faction in the Federal Parliament on 19 January 1999 ("Animals are protected as part of their species-appropriate keeping against the destruction of their habitats as well as against avoidable pain and suffering. Animal experiments are only permissible if they are indispensable for the advancement of human health" as Art. 20a Para. 2 Basic Law) and by the SPD and Bündnis90/Die Grünen (The Greens) on 26 February 2002 (insertion of the words "and animals" into Art. 20a Basic Law).

On 23 April 2002 the parliamentary factions of the SPD, CDU/CSU, Bündnis90/Die Grünen and FDP introduced the Draft Act for the Amendment of the Basic Law (Animal Protection as a Constitutional Goal) (Entwurf eines Gesetzes zur Änderung des Grundgesetzes (Staatsziel Tierschutz)); this resulted in a constitutional amendment on 26 July 2002. As justification for the submission it was asserted that the aim was to "strengthen the animal protection normalised in simple law and ensure the effectiveness of legal provisions governing animal welfare" (Parliament Printed Materials [BT-Drucks.] 14/8860).

BT-Drucks. 14/8860

BT-Drucks. 14/9090

Animal protection as a constitutional goal in commentaries on the Animal Protection Act:

Hirt, Almut / Maisack, Christoph / Moritz, Johanna (2003): Tierschutzgesetz. Munich: Franz Vahlen, 35-45.

Kluge, Hans-Georg (Hg.) (2002): Tierschutzgesetz. Stuttgart: Kohlhammer, 51-62.

Animal protection as a constitutional goal in commentaries on the Basic Law:

Maunz, Theodor / Dürig, Günter (2005): Grundgesetz: Kommentar. Herausgegeben von Roman Herzog, Rupert Scholz, Matthias Herdegen und Hans H. Klein. Munich: Beck. Loseblattsammlung. Effective 2005.

On animal protection as a constitutional goal and on the question of what implications the definition of animal protection as a constitutional goal will have on official approval of animal experiments:

Capar, Johannes / Schröter, Michael W. (2003): Das Staatsziel Tierschutz in Art. 20a GG. Rechtsgutachten im Auftrag des Deutschen Tierschutzbundes e.V. Bonn: Köllen.

Faller, Rico (2005): Staatsziel "Tierschutz". Vom parlamentarischen Gesetzgebungsstaat zum verfassungsgerichtlichen Jurisdiktionsstaat? Berlin: Duncker und Humblot (Schriften zum öffentlichen Recht 978).

Stelkens, Ulrich (2003): Erweitert das neue Staatsziel "Tierschutz" die behördliche Prüfdichte bei der Genehmigung von Tierversuchen? In: Natur und Recht 2003, 401-407.



Animal Rights

Animal Rights

Philosophical literature offers different answers to the question of which qualities a living creature must have in order to be a bearer of rights (moral patient). Depending on the particular approach adopted, certain species of animal fall within the group of potential moral patients. The following section adumbrates a number of approaches.

(A) Philosophers such as Joel Feinberg and Leonard Nelson argue that all living creatures which have the capacity for feeling and hence have an interest in a pain-free existence are also entitled to a corresponding right (to freedom from pain).

(B) As a refinement of approach A, other authors (for example Raymond Frey) suggest that only creatures with more extensive cognitive abilities such as the capacity for language (instead of purely the capacity to feel) would have interests (preferences). In this understanding man is the only living creature that has interests and hence can be a bearer of rights.

(C) The status of moral patient can also be substantiated by the capacity for moral action (as expressed for example by Immanuel Kant or by Friedo Ricken in relation to Kant). Accordingly, the only living creatures that can be bearers of rights are those that can also be bearers of obligations to other living creatures. The category of "moral patients" would thus be identical to that of "moral agents".

If - as in the aforementioned approaches - the status of moral patient is established by the existence of certain qualities (capacity to feel, capacity for language, capacity for moral action), some human beings will also initially be excluded from the category of bearers of rights. Yet most theories take the view that all humans, irrespective of their qualities and capacities, are bearers of rights. Two modes of argumentation may be presented that resolve this dilemma.

(1) On the one hand, it may be argued that not only the present but also the potential qualities of a living creature determine its status as a moral patient. Infants, for example, do not have the qualities required for the status of moral patient, but they will acquire them in the course of their life. If the predisposition towards a capacity for language or a capacity for moral action were to suffice for the bearing of rights, infants (but not animals of "equal capacity") would have rights, even though they do not yet have the required qualities.

(2) On the other hand, it may be argued that the bearing of rights does not derive from individual present or potential qualities, but from qualities that are typical of the species. A severely mentally handicapped person or a coma patient who did not meet the aforementioned criteria for the status of moral patient would therefore be a moral patient because he or she belonged to a species that typically had the required qualities.

- Birnbacher, Dieter (2001): Selbstbewusste Tiere und bewusstseinsfähige Maschinen. Grenzgänge am Rande des Personenbegriffs. In: Sturma, Dieter (Hg.): Person: Philosophiegeschichte - Theoretische Philosophie - Praktische Philosophie. Paderborn: Mentis (ethica 3), 301-321.
- Feinberg, Joel (1974): The rights of animals and unborn generations. In: Blackstone, William T. (ed.): Philosophy and environmental crisis. Athens, Georgia: University of Georgia Press, 43-68.
- Frey, Raymond G. (1980): Interests and Rights. The Case against Animals. Oxford: Clarendon Press.
- Nelson, Leonard: System der philosophischen Ethik und Pädagogik. Hg. v. Grete Hermann und Minna Specht. Hamburg: Felix Meiner 1970 (Gesammelte Schriften in neun Bänden, Band V).
- Regan, Tom (1988): The Case for Animal Rights. London: Routledge.



Animal Soul

Animal Soul

In the modern era the French philosopher Rene Descartes and his pupil Nicolas Malebranche propounded the view that animals felt neither joy nor pain. Descartes was of the opinion that all animal behaviour - like the actions of a robot - could be attributed to reflexes. Unlike humans, he believed that animals did not have a soul (res cogitans) that would enable them to feel and think, but merely a material body (res extensa) that reacted mechanically to stimuli.

The most dramatic implication was that animal cries of pain were not an expression of experienced suffering, but merely unconscious reflexes ("like the squeaking of a door"). In the 1970s the view that nothing scientific could be said about an animal's experience became topical again due to the emergence of "behaviourism".

At the same time there have always been tendencies - especially in folk psychology - to understand animal behaviour by analogy to human behaviour and attribute it to complex mental states (for example desires and convictions); such an interpretation is generally referred to as "anthropomorphic".

In search of a middle way between Descartes' denial of an animal soul and the anthropomorphism of folk psychology, cognitive ethnology explores animal thought and experience. Such research also has a bearing on the issue of the ethical evaluation of animal experiments:

(1) an ethical problem with animal experiments would only exist at all (as it is generally believed) if animals were capable of feeling. Yet even if an animal's capacity to feel pain is accepted in principle, the further question arises as to whether the mental trauma of test animals should be considered greater or less than the mental trauma of humans in a comparable situation on account of an animal's lack of self and future awareness.

(2) The minimisation of animal suffering - as is required by law - is contingent upon a reliable assessment of what the animal is feeling. Currently, however, there is no consensus on reliable criteria for the attribution of pain. The wordings of directives, laws etc. therefore often require that animals' sensitivity to pain should be assumed to be analogous to that of humans, although there is no evidence that all living creatures respond to the same stimuli with pain.

A compilation of philosophical texts is contained in the volume:

Perler, Dominik, Wild, Markus (Hg.) (2005): Der Geist der Tiere. Philosophische Texte zu einer aktuellen Diskussion. Frankfurt/M.: Suhrkamp.

On the exploration of animals' awareness of pain see:

Galert, Thorsten (2005): Vom Schmerz der Tiere. Grundlagenprobleme der Erforschung tierischen Bewusstseins. Paderborn: Mentis.



Animal Welfare Report

Animal Welfare Report

The Animal Welfare Report (Tierschutzbericht), which has been published by the Federal Ministry for Food, Agriculture and Consumer Protection (BMELV) every two years since 1989, deals with various animal welfare issues. In addition to data on laboratory animals, it contains inter alia information on the keeping of working animals, the transportation of animals and the keeping of circus animals and household pets.

Although figures for test animals have been published since 1989, the data from different years can only be compared subject to some limitations. This is because the Laboratory Animal Reporting System (Versuchstiermeldeordnung) was amended in 1999 and since then considerably more test animals have been "counted". Most notably, animals which are killed and whose tissues or organs are removed for scientific purposes have also been counted as laboratory animals since that date. Similarly, animals used to manufacture, obtain, store or multiply substances, products or organisms or which serve educational or instructional purposes are also classified as laboratory animals.

Animal Welfare Report - Draft (Tierschutzbericht - Kabinetttvorlage) 2007

Ascertainment of animal testing in 2008 by the Federal Ministry of Food, Agriculture and Consumer Protection



Anthropocentrism: Historical Origins

Anthropocentrism: Historical Origins

Various authors attach influential importance to the Christian view that man as made in the image of God (Genesis 1.26) is fundamentally (and not only incrementally) different from all other creatures. In this sense the Christian faith is a historical source of the anthropocentric, i.e. human-centred, understanding of the world. Opponents, on the other hand, argue that even the Christian myth of creation suggests a certain similarity between all "creatures" since it asserts that God is the origin of all living things. Thus, for example, the designation "fellow creature" in § 1 of the Animal Protection Act points to the kinship of all living things within creation and hence also implies a clear duty to show them respect.

The special moral status of man was justified without recourse to Christian theology by his intellectual nature (for example in Enlightenment philosophy). The French philosopher Rene Descartes (1596-1650), for example, argued that man was the only living creature to have a soul (res cogitans) (see Module 3.6.).

Immanuel Kant (1724-1804), on the other hand, saw the difference between humans and animals in the fact that only man is capable of self-commitment and is able to lead a life oriented to the law of morality.



Brutalisation Arguments

Brutalisation Argument

As an illustration of the brutalisation argument (which it may also be noted was the underlying basis of early animal protection laws, cf. Module 2.10.), reference is sometimes made to a series of prints by William Hogarth ("The Four Stages of Cruelty", 1751). The pictures tell the story of Tom Nero. In the midst of a general atmosphere of animal cruelty Nero evolves from a tormentor of animals to a murderer. He is ultimately executed and his corpse is released for crude, amateurish anatomical examinations.

A reconstruction of Kant's animal ethics, however, suggests that the Kantian approach encompasses more than the thesis that through animal cruelty man indirectly endangers his fellow man.

Kant, Immanuel: *The metaphysics of morals* (Die Metaphysik der Sitten]. Transl. and ed. by Mary J. Gregor. Cambridge: Cambridge University Press 1996.

Baranzke, Heike (2002): *Würde der Kreatur? Die Idee der Würde im Horizont der Bioethik*. Würzburg: Königshausen und Neumann (Würzburger wissenschaftliche Schriften), on Kant especially Chapter IV, 122-223.



COM Report

COM Report

Report from the Commission to the Council and the European Parliament - fifth report on the statistics of the number of animals used for experimental and other scientific purposes in the Member States of the European Union.

The COM Report is compiled by the Commission of the European Communities on the basis of statistics provided by the EU Member States on the number of animals used for experimental and other scientific purposes. In addition to the report from 2005 cited here, reports were published in 1994, 1999 and 2003.

COM-Report 2007



Compassion

Compassion

The individual feeling of compassion for other living beings forms the foundation of the ethics of compassion. Schopenhauer calls this the care for the "Wohl und Wehe" (roughly: "well-being and woe") of others. Corresponding with Max Scheler's differentiation between different types of compassion, only that type of compassion is morally relevant within the ethics of compassion, which comprises two aspects: For one thing, the observer empathizes with the one suffering by imagining the latter's feelings and thoughts; at the same time, she does, however, maintain the observer's distance and clearly distinguishes between herself and the one affected. For another thing, this process of empathizing is mostly connected to the own feelings of suffering, which is generated by projecting the situation to oneself.

Initially, it is the first aspect which is decisive for the moral action according to the ethics of compassion. According to Schopenhauer, empathizing with the suffering of others and the capability for changing

perspectives implicit therein form the “fundament of moral”, which is the basic awareness of moral upon which ethics of compassion is based.

Demmerling, Christoph (2007): Philosophie der Gefühle. Stuttgart: Metzler.

Schopenhauer, Arthur: Über die Freiheit des menschlichen Willens. Über die Grundlage der Moral. Kleinere Schriften II. Hg. von Arthur Hübscher. Zürich: Diogenes 1977 [Zürcher Ausgabe. Werke in zehn Bänden 6].



Contergan

Contergan

Contergan is a sedative that was marketed from 1957 to 1961 by the company Chemie Grünenthal. Animal experiments conducted before going to market had not given any indication that the active substance in Contergan - thalidomide - had any undesired side-effects.

Yet it emerged that taking Contergan during pregnancy influenced embryonic development (teratogenic effect). Numerous children whose mothers had taken Contergan during pregnancy suffered deformities of the limbs (dysmelia syndrome).

The Contergan disaster triggered a tightening up of the German Pharmaceutical Products Act (Arzneimittelgesetz). Following the adoption of an amended Pharmaceutical Products Act in 1978 more extensive drug safety checks have been required by law in Germany.

Since animal experiments failed to identify the teratogenic effect of thalidomide, opponents of animal experimentation sometimes cite the Contergan disaster as an illustration of the unreliability of safety tests conducted on animals. The fact is, however, that the harmful effect of Contergan was not discovered in animal experimentation because at that time no experiments had been performed on pregnant animals.

Nevertheless, even subsequent tests on pregnant animals failed to produce a conclusive result: mice and rats proved to be resistant to the teratogenic effect of thalidomide, while in various other species of animal → such as rabbits, hamsters, guinea-pigs, dogs and primates - developmental disorders only occurred in some cases.

LaFollette, Hugh / Shanks, Niall (1994): Animal experimentation: the legacy of Claude Bernard. In: International Studies in the Philosophy of Science 8 (3): 195-211.

Hawkins, David F. (ed.) (1983): Drugs and Pregnancy - Human Teratogenesis and Related Problems, Edinburgh: Churchill Livingstone.

General criticism of the applicability of the results of animal experiments:

Croce, Pietro (1999): Vivisection or science? An investigation into testing drugs and safeguarding health. 2., revised edition. London: Zed Books.

LaFollette, Hugh / Shanks, Niall (1996): Brute science. Dilemmas of animal experimentation. London: Routledge (Philosophical issues in science).



Convention of the Council of Europe

Convention of the Council of Europe

The Convention has since been revised. The change affects the procedure for amending the technical appendices (Guidelines etc.):

In future the appendices may be amended more easily in order to reflect scientific and technological advances as well as the latest research findings in the relevant fields (Protocol of amendment to the European Convention for the Protection of Vertebrate Animals used for Experimental and other Scientific Purposes dated 22 June 1998).

The European Community has now adopted the Protocol of amendment (Directive 2003/584/EC).

Germany signed the Protocol of amendment on 26 November 1999; it entered into force in Germany on 2 December 2005.

Convention

Protocol of amendment



Cosmetics Directive

Cosmetics Directive

Under the Seventh Amendment of the Cosmetics Directive 76/768/EEC (Directive 2003/15/EC) animal experiments to test finished cosmetic products have been banned within the EU since 2004.

From 11 March 2009 onwards it will also no longer be possible to test the contents of cosmetics in animal experiments, nor will it be permitted to market cosmetics in the EU whose contents have been tested on animals. A variety of tests (connected with the toxicity of repeated use, reproductive toxicity and toxicokinetics) examining long-term effects can continue to be performed on animals no longer than until 11 March 2013.

Directive 76/768/EWG

Directive 2003/15/EG

COM Report on the development, validation and legal recognition of alternative methods for animal experiments in the area of cosmetics (2004)



Court Practice of Giessen Administrative Court

Proceedings before Giessen Administrative Court

In a 2003 ruling the Giessen Administrative Court argued that the authorities now had a material right of review following the adoption of animal protection as a constitutional goal through the amendment of Art. 20a Basic Law.

Giessen Administrative Court, ruling of 13 August 2003, ref. no.: 10 E 1409/03 (In: Natur und Recht 2004, 64-66.)

A researcher took legal action after an animal experiment that he had applied to carry out was rejected by the competent approval agency. The planned experiment was to investigate the weight gain of rats following administering of the antipsychotic drug Clozapin.

The agency had refused to give its approval with the justification that the planned animal experiment was neither indispensable nor ethically acceptable (as defined by § 7 Animal Protection Act). The plaintiff, on the other hand, was of the opinion that the approval agency was not authorised to arrive at such an assessment, but was merely - within the meaning of a qualified plausibility check - tasked with reviewing whether the researcher had provided scientific justification for his project. Since this had occurred in the case at hand, it was obliged to grant him the appropriate approval.

The court decided against the plaintiff and found that the approval agency had a material right of review and, in particular, was empowered to subject the scientific justification provided by the researcher to objective scrutiny. This power derived *inter alia* from the fact that since 2002 animal protection had been a constitutional goal and this would "inevitably" have implications for the provisions of simple law set out in the Animal Protection Act. It may also be noted that the court confirmed the assessment reached by the approval agency, namely that the experiments for which approval was sought were neither indispensable nor ethically acceptable. The dispute dragged on, until finally in its ruling of 16 June 2004 the Higher Administrative Court of the State of Hesse rejected the plaintiff's application for permission to appeal against this decision.



Dignity of living beings

Dignity of living beings

The term "dignity of living beings" emerged for the first time in 1789, namely in a work of the Danish philosopher and pastor Lauritz Smith. In "Über die Natur und Bestimmung der Thiere wie auch von den Pflichten der Menschen gegen die Thiere", he writes: "Every living being, every animal exists first and immediately for its own, and to enjoy beatitude through its existence" (unofficial translation).

The ability to sense happiness constitutes the claim for justice and dignity. Smith's concept of dignity does, however, have two sides. On the one hand, the animal's dignity draws from it being a being that can be made happy. On the other hand, it is based in it having significance for the whole, which means being a benefit for other animals or the human being. This idea can also be found in the Swiss legislation in the demanded balancing of legally protected interests between the interests of the animals and those of the human being.

Basel's theologian Karl Barth also shaped the concept in his ecclesiastic dogmatics 1945, under the influence of Albert Schweitzer's "The Ethics of Reverence for Life" and after having intensively turned to the Biblical creation account (Genesis 1). Barth spoke of a dignity for all living creatures by means of them having been created by God. For Barth, a criterion for dignity is the ability to proper motion, which reaches its maximum in human autonomy. Since plants are also capable of proper motion, he ascribes dignity to plants as well. The human being is ascribed most dignity but at the same time s/he is also given more responsibility toward the other living beings.

Heike Baranzke (2002): *Würde der Kreatur? Die Idee der Würde im Horizont der Bioethik*. Würzburger wissenschaftliche Schriften, Reihe Philosophie, Band 328. Würzburg: Königshausen & Neumann.

Dagmar Richter (2007): *Die Würde der Kreatur – Rechtsvergleichende Betrachtungen*. Kolloquium zu Ehren von Helmut Steinberger (Mannheim, 26.1.2007), *ZaöRV/HJIL* 67 (2007), S. 319 – 349. (German only)



Directive 86/609/EEC

EU-Directive

Council Directive 86/609/EEC dated 24 November 1986 on the approximation of laws, regulations and administrative provisions of the Member States regarding the protection of animals used for experimental and other scientific purposes.

Just like the Convention of the Council of Europe (see above), the EU Directive has now been amended so that the technical appendices can be more easily revised in line with the latest level of scientific knowledge (see Directive 2003/65/EC on the amendment of Directive 86/609/EEC)

Directive 86/609/EEC

Directive 2003/65/EC



Empirical Justifications

Empirical Justifications

For Ursula Wolf, empirical differences concerning the dimension of suffering, which can be experienced by the respective moral subject, do not justify a graduated moral consideration. A moral subject's ability to suffer, be it an animal or a human being, can only in rare exceptions be weighed against a higher moral good. Hence, it is not permitted to weigh, for instance, the joy of consuming pork against the suffering of a pig raised in factory farming. Furthermore, differences in the capability of reflection on the own suffering do not justify a moral gradation since some animal species, for example, cannot abstract from their pain, while human beings can partly do so. According to Wolf, only the ability to suffer is decisive for a moral judgment; those living beings which additionally have at their disposal a conscience of their own pain are worthy of protection on a higher level.

The presence of particular *closeness*, too, does not necessarily justify more rights for human beings. Wolf claims that a close social relationship can also exist between a human being and an animal.

Within the circle of human beings there would further exist very different *types of relationships* which do not justify a reduced worthiness of protection. This is the case particularly in situations where individuals, as opposed to the majority of human beings, do not possess full rational capabilities. Wolf thus underlines that we should not undertake any reduction in protection based on different social relationships concerning human beings with different rational abilities (e.g. patients in a coma) and that, analogously, we should not do so with respect to animals either.

Wolf, Ursula (1990): *Das Tier in der Moral*. Frankfurt a.M.: Klostermann.



Ethically Acceptable

Ethical Acceptability

Only since 1986 has it been prescribed by law that an animal experiment may only be conducted if it is "ethically acceptable". The criterion of ethical acceptability is intended to ensure that commensurability is maintained between the "experimental gain" and the stresses for test animals.

There have been a number of attempts to give concrete form to this relatively unspecific requirement. In 1997, for example, the Veterinary Association for the Protection of Animals (Tierärztliche Vereinigung für Tierschutz e.V. (TVT)) adopted a Recommendation for ethical considerations in the planning of animal experiments (Empfehlung zur ethischen Abwägung bei der Planung von Tierversuchen) which is intended to simplify evaluation of the human benefit and stress for test animals as "low", "medium" and "considerable".

A number of countries also have so-called "stress catalogues" (degree of severity tables) that group animal procedures according to the level of stress that they cause. Whether and if so to what extent "severe stresses" for test animals can be ethically acceptable is a controversial issue. The "Ethical Principles and Guidelines for Scientific Animal Experiments of the Swiss Academy of Medical Sciences and the Swiss Academy of Natural Sciences" (Ethische Grundsätze und Richtlinien für wissenschaftliche Tierversuche der Schweizerischen Akademie der Medizinischen Wissenschaften und der Schweizerischen Akademie der Naturwissenschaften) issued in 1981 contain, for example, the requirement that "experiments which inflict severe suffering on the animal" should be avoided (Item 4.6).

What has proven to be a particularly controversial point of legal interpretation is the question of whether the applicant merely has to scientifically justify the ethical acceptability and indispensability of the planned animal experiment, or whether the Committees on Animal Experiments and the responsibility approval agencies - similarly prescribed by law since 1986 - should take their own decision on this matter. Various courts have sought to appropriately reconstruct the intent of lawmakers in this matter, but without arriving at a consistent opinion.

Veterinary Association for the Protection of Animals (TVT)

Swiss Academy of Medical Sciences (Basle) and Swiss Academy of Sciences (Berne)



EU Regulations

EU-Regulations

The following list covers just a selection of EU regulations:

- Annex 5 of Directive 67/548/EEC of the European Parliament and of the Council of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances,
- Directive 2001/82/EC of the European Parliament and of the Council of 6 November 2001 on the Community code relating to veterinary medicinal products,
- Council Directive 91/414/EEC of 15 July 1991 concerning the placing of plant protection products on the market,
- Directive 98/8/EC of the European Parliament and of the Council of 16 February 1998 concerning the placing of biocidal products on the market,

- Regulation (EC) No. 648/2004 of the European Parliament and of the Council of 31 March 2004 on detergents.

The European Pharmacopeia also requires tests that include animal experiments.

Recently, the so-called REACH-Regulation (No. 1907/2006) has triggered controversies among the population. With this regulation, the European Union creates a system for the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) and establishes a European Chemicals Agency (ECHA). The REACH-system aims at ensuring a higher level of protection for human health and the environment concerning chemical products.

Not only does the REACH-Regulation bind producers and importers to make subject to an evaluation process all such products that exceed a yearly amount of one ton per producer and per importer; they also have to arrange for the re-evaluation of chemicals that had already been on the market prior to the regulation.

Although the regulation explicitly declares the advancement of alternative test procedures to be the primary concern and issues a duty to inform concerning animal experiments that have already been conducted (Article 27, paragraph 1) in order to obviate unnecessary multi-experiments, the number of test animals is expected to rise significantly until 2020.

There is, however, deep disagreement concerning exact numbers. While the EU acts on the assumption of nine million animals needed for the REACH-system, researchers of the Johns Hopkins Center for Alternatives to Animal Testing by means of extrapolation have arrived at the result of 54 million animals.

Directive 2001/82/EC (veterinary medicinal products)

Directive 91/414/EEC (plant production products)

Directive 98/8/EC (biocidal products)

Regulation (EC) No. 648/2004 (detergents)

Regulation (EC) No. 1907/2006 (REACH)

Federal Institute for Risk Assessment

European Chemicals Agency (ECHA)

Extrapolation of animal experiment numbers by Hartung and Rovida in the ALTEX Journal (3/09)



Experiments on Invertebrate Animals

Experiments on Invertebrate Animals

Under the Animal Protection Act as amended 18.12.2007 experiments on cephalopods and decapods are notifiable, but - unlike experiments on vertebrates - they do not require approval. Experiments on other invertebrate animals do not require any declaration.

This double standard (vertebrates - invertebrates) evidently goes back to the conception that invertebrate animals cannot or have only a reduced capacity to feel pain and are therefore to a lesser extent deserving of protection. This split is nevertheless controversial and is even considered arbitrary in some quarters.

Many authors argue that at least some invertebrate animals have a sensitivity to pain which is similar to that of vertebrate animals. Cephalopods, in particular, are considered highly developed in this respect. The lower level of protection granted to such invertebrates under the Animal Protection Act would then be unjustified.

Nida-Rümelin, Julian / von der Pfordten, Dietmar (1996): Tierethik II: Zu den ethischen Grundlagen des deutschen Tierschutzgesetzes. In: Nida-Rümelin, Julian (Hg): Angewandte Ethik. Die Bereichsethiken und ihre theoretische Fundierung. Stuttgart: Alfred Kröner, 484-509.



Federal Constitutional Court

Procedural cycle, Berlin Administrative Court - Federal Constitutional Court

The question of whether the approval agencies are entitled to reach an autonomous evaluation of the ethical acceptability of animal experiments was heard by Berlin Administrative Court (VG Berlin) and the Federal Constitutional Court (BVerfG) in 1994.

1. Berlin Administrative Court, First Chamber, ruling of 20 April 1994, ref. no.: 1 A 232.92 (In: Natur und Recht 1994, 507-511.)

A researcher conducting basic research in neurophysiology at the Free University of Berlin had sought approval for two animal experiments. The experiments in question were to be performed on live anthropoid apes (inter alia squirrel monkeys and Java Macaques). The responsible approval agency had rejected both applications (on 23 June 1992) despite having approved similar experiments by the researcher in the past (3 March 1988, 17 September 1990). The justification provided for the refusal was that while the envisaged animal experiments were indispensable for the pursued experimental goal, they were not ethically acceptable.

The researcher then filed suit in Berlin Administrative Court. The Administrative Court decided to initially stay the proceedings and obtain a decision from the Federal Constitutional Court as to whether § 7 Para. 3 Animal Protection Act (TierSchG) (review of ethical acceptability by the approval agency) was unconstitutional (judicial review proceedings). The Administrative Court itself was of this opinion and noted that § 7 Para. 3 TierSchG was in violation of Art. 5 Para. 3 Sentence 1 Basic Law (fundamental right to freedom of research). As an unqualified fundamental right, freedom of research could only be restricted by other, conflicting constitutional values; animal welfare does not, however, have constitutional status, and the court was therefore of the opinion that restriction of freedom of research by the provisions of the Animal Protection Act would be unconstitutional.

2. Federal Constitutional Court, First Division, First Chamber, Chamber ruling of 20 June 1994, ref. no.: 1 BvL 12/94 (In: Natur und Recht 1995, 135-137.)

The Federal Constitutional Court was now called upon to decide whether the provisions of the Animal Protection Act regarding review of the ethical acceptability of animal experiments were unconstitutional. However, it rejected the submission of the Berlin Administrative Court as inadmissible. In the first place, the Federal Constitutional Court pointed out that the Berlin Administrative Court could have reached a decision irrespective of clarification of the question as to whether § 7 Para. 3 Animal Protection Act was unconstitutional: If the experiments in respect of which the application was filed were, contrary to the opinion of the approval agency, ethically acceptable, there would be no need to decide upon the constitutional conformity of the legal

norm. Secondly, pursuant to § 100 Para. 1 Sentence 1 Basic Law (judicial review proceedings) provision is only made for a submission to the Federal Constitutional Court if clarification of the question as to whether a legal norm is unconstitutional is indispensable for the decision-making of the submitting court. Submission to the Federal Constitutional Court would also be superfluous if the nullification of a norm could be avoided through its interpretation in accordance with the constitution.

In relation to § 7 Para. 3 an interpretation in accordance with the constitution would be such that while the researcher would have to provide scientific justification for the ethical acceptability of his planned animal experiments, the authorities would not have a material right of review, in other words they would not decide whether the researcher's representation was in fact accurate. In this sense the task of the agency would merely be to perform a qualified plausibility check and freedom of research would not be restricted in an unconstitutional manner.

3. Berlin Administrative Court First Chamber, ruling of 7 December 1994, ref. no.: 1 A 232.92 (In: *Zeitschrift für Umweltrecht* 1995, 201-203.)

The Berlin Administrative Court then accepted the researcher's complaint and stated that the approval agency's task was that of a qualified plausibility check: authorisation to conduct an animal experiment is to be granted if the applicant has provided scientific justification to the effect that the experiment is indispensable and ethically acceptable. On the other hand, the court held that it is not the task of the approval agency to further assess whether the experiment is actually ethically acceptable. Since in the present case the researcher had adequately demonstrated the ethical acceptability of the planned series of experiments, his complaint against the approval agency was successful. The researcher was granted the authorisation to conduct the animal experiments.



Human Rights for Anthropoid Apes

Human Rights for Anthropoid Apes

Anthropoid apes (chimpanzees, gorillas, orang-utans) distinguish themselves from (many) other animals through special cognitive and emotional capacities. For example, they are ascribed a certain form of self-awareness and a rudimentary capacity for language use.

On the basis of these capacities biomedical experiments on anthropoid apes appear to be more ethically questionable than experiments on other animal species. The "Great Ape Project" initiated by Peter Singer (see above) and Paola Cavalieri therefore calls for human rights to be extended to anthropoid apes. As bearers of human rights they could not be held in captivity or killed. Nor would the continued use of anthropoid apes in medical experiments be legitimate.

As things currently stand, experiments on anthropoid apes are already outlawed in a number of countries (for example New Zealand, the Netherlands, Austria and Sweden). In Germany no further experiments have been conducted on chimpanzees, gorillas or orang-utans since 1991, although there is not as yet any legal prohibition to this effect.

Cavalieri, Paola / Singer, Peter (ed.) (1993): *The great ape project: equality beyond humanity*. London: Fourth Estate publishing.



Jürgen Habermas

Jürgen Habermas

Habermas emanates in his ethical theory, which is described as discourse ethics, that norms (from which rights and duties result) have to be justified within practical discourses. This has to happen by all the participants of a practical discourse, being affected by a norm, convincing themselves that this norm is in everyone's homogeneous interest and therefore agreeing with it.

Habermas does not emanate animals appearing as fully valid discourse partners. In this respect the approach seems to be related to the Kantian one.

Habermas tries to avoid a strong anthropocentrism by enforcing a moral analogue responsibility of the human towards animals. This responsibility is based on that at least sophisticated animals can take part in our social interactions and experience us in the persona of the alter ego. Insofar we find in them an opponent which needs to be treated with care. With that it justifies an abeyance to fiduciary perception of its demands.

Habermas, Jürgen (1991): *Erläuterungen zur Diskursethik*. Frankfurt a.M.: Suhrkamp.



Modern Era

Claude Bernard

Animal experiments only became a virtually indispensable tool of medical research in the modern era, although back in Antiquity anatomical and indeed physiological investigations had been carried out on animals. The French physiologist Claude Bernard (1813-1878) played a driving role in establishing animal experiments as a research tool.

In a sense Bernard laid the theoretical scientific foundations for experimental medical research. It had long been assumed that medicine - unlike chemistry and physics - could not be a science. Vitalism, a view that was widely shared at that time, held that all living things were permeated by a life force; organic processes were not subject to laws, had no causal factors and consequently could not be predicted. Hence they were not accessible to scientific investigation. Bernard, on the other hand, established the understanding that life phenomena too - in common with physiological processes or diseases - could be scientifically explored since all bodily processes were also subject to immutable natural laws (determinism).

Bernard rejected "passive hospital medicine", i.e. the observation of patients and analysis of tissue samples etc. Instead, he called upon scientists to use laboratory experiments to exert a targeted influence on specific physiological factors and study the consequences. He believed that the knowledge gained from such laboratory experiments - and especially animal experiments - could then help scientists understand the causes of diseases and assist with the development of new therapeutic procedures. Bernard set out his concept for medical research in the book "An Introduction to the Study of Experimental Medicine", which can probably still be attributed a major influence on current scientific understanding.

Bernard, Claude (1957): *An Introduction to the Study of Experimental Medicine (Introduction à l'étude de la médecine expérimentale)*. Paris, 1865). New York: Dover Publications.

On the development of animal experiments and the early debate surrounding the scientific and ethical justification for animal experiments:

Bretschneider, Hubert (1962): *Der Streit um die Vivisektion im 19. Jahrhundert. Verlauf - Argumente - Ergebnisse*. Stuttgart: Gustav Fischer (Medizin in Geschichte und Kultur 2).

Maehle, Andreas-Holger (1990): *Die Anfänge der Diskussion um den wissenschaftlichen Tierversuch im 17. und 18. Jahrhundert. Die ersten Standpunkte und ihre Begründungen*. Göttingen [Med. Habil.].

Tröhler, Ulrich (1985): *Die Geschichte des wissenschaftlichen Tierversuchs, seiner Begründung und Bekämpfung*. In: Ullrich, Karl. J. / Creutzfeldt, Otto D. (Hg.): *Gesundheit und Tierschutz. Wissenschaftler melden sich zu Wort*. Düsseldorf-Wien: Econ Verlag, 47-93.



National Laws

National Laws

Animal experiments are required inter alia by the Act on Protection against Hazardous Substances (Gesetz zum Schutz vor gefährlichen Stoffen (ChemG)), in the Regulation on Medicinal Products (Verordnung über Medizinprodukte (MPV)), in the Plant Protection Act (Gesetz zum Schutz der Kulturpflanzen (PflSchG)) and in the Ordinance on Plant Protection Products (Verordnung über Pflanzenschutzmittel und Pflanzenschutzgeräte (PflSchMGV)).

According to figures from the Federal Ministry for Food, Agriculture and Consumer Protection (BMELV), 15.4 percent of test animals in 2004 were used on the basis of legal requirements.

Act on Protection against Hazardous Substances (ChemG)

Regulation on Medicinal Products (MPV) [Online version](#)

Plant Protection Act (PflSchG)

Ordinance on Plant Protection Products (PflSchMGV)



Neural Grafting

Neural Grafting

Since 2001 experiments have been conducted in the field of stem cell research in which human neuronal stem cells are implanted in the brains of non-human primates. With the aid of such experiments the goal is to investigate whether stem cells can replace dead or functionally impaired brain cells, thereby making it possible to restore the functioning of damaged areas of the brain. In the long term this research hopes to develop new therapies for neurodegenerative diseases such as Alzheimer's or Parkinson's with the aid of stem cell technology.

In the opinion of many scientists this line of research also gives rise to a special ethical problem: if the primates used were to acquire human-like cognitive and emotional capacities as a consequence of the injection or transplantation of human nerve cells, their (further) use in harmful or painful experiments would not be ethically acceptable.

While many researchers assess the probability of such a "surge in mental capacity" as minimal, it cannot be entirely ruled out. Given that knowledge about the "normal" emotional and psychological life of primates is currently still slight, there is also a lack of criteria that could be used to identify such a change with any degree of certainty.

In view of the looming ethical problem a multidisciplinary research panel set up in 2004 drew up a catalogue of measures aimed at minimising the risk of "humanising" test animals. These require that special consideration be given to the following points before conducting such a procedure:

- (I) the proportion of grafted human cells (this should not be too large relative to the brain volume),
- (II) the stage of development of the test animal (the procedure should not be performed in too early a stage of development),
- (III) the species of ape (the risk of humanisation could be greater with anthropoid apes than with other species of monkey),
- (IV) the brain size (this in turn influences the proportion of human cells),
- (V) the place of insertion (the foreign cells should not be injected or transplanted into those areas that are responsible for cognitive and emotive capacities) and
- (VI) the cerebral pathology (humanisation appears more probable if the inserted human cells are intended to replace the function of heavily damaged areas of the brain).

The panel recommends that research projects involving the injection or transplantation of human cells into the brains of non-human primates should be subject to a special assessment procedure.

Greene, Mark / Schill, Kathryn / Takahashi, Shoji / Bateman-House, Alison / Beauchamp, Tom / Bok, Hilary / Cheney, Dorothy / Coyle, Joseph / Deacon, Terrence / Dennett, Daniel / Donovan, Peter / Flanagan, Owen / Goldman, Steven / Greely, Henry / Martin, Lee / Miller, Earl / Mueller, Dawn / Siegel, Andrew / Solter, Davor / Gearhart, John / McKhann, Guy / Faden, Ruth (2005): Moral Issues of Human-Non-Human Primate Neural Grafting. In: *Science* 309, 385-387.



Non-human Primates

Weatherall Report on the Use of Non-human Primates in Research

According to a report written under the direction of Sir David Weatherall and published in Great Britain in 2006, testings on non-human primates in the research fields of protection against diseases (for instance HIV/AIDS, Malaria, Tuberculosis), neurodegenerative diseases such as Alzheimer's disease and Parkinson's disease, reproduction biology as well as organ transplantation are still irreplaceable on account of their physiological similarities to the human being.

However, research on primates is to be regulated strictly and to be conducted in view of the monkey's well-being. In principle, each petition for trials with non-human primates shall be judged individually and in each test series the opportunity of an alternative given by other animal models or even in-vitro-methods shall be ruled out in advance.

Weatherall, D. (2006): The use of non-human primates in research



Peter Singer

Peter Singer

Singer's position is inspired by the observations of British philosopher Jeremy Bentham (1748-1832). There are, however, differences between the positions of Singer and Bentham. While for Bentham the capacity to feel and suffer constitutes the central ethical question, Singer's ethics revolves around the concept of interest or preference.

The following quotation from Jeremy Bentham may nevertheless be considered as capturing the basic idea of the animal protection position and also as a forerunner of the speciesism critique (see below).

"The day may come when the rest of the animal creation acquires those rights which never could have been withholden from them but by the hand of tyranny. The French have already discovered that the blackness of the skin is no reason why a human being should be abandoned without redress to the caprice of a tormentor. It may one day come to be recognised that the number of the legs, the villosity of the skin, or the termination of the os sacrum, are reasons equally insufficient for abandoning a sensitive being to the same fate. What else is it that should trace the insuperable line? It is the faculty of reason, or perhaps the faculty of discourse? But a full-grown horse or dog is beyond comparison a more rational, as well as a more conversable animal, than an infant of a day, or a week, or even a month, old. But suppose they were otherwise, what would it avail? the question is not, Can they reason? nor Can they talk but, Can they suffer?"

(cited in: Singer, Peter: *Animal Liberation - a New Ethics for Our Treatment of Animals*, 1975. New York: New York Review Book (Random House), 8 f.)



Poliomyelitis

Poliomyelitis

The path of infection taken by polio (poliomyelitis) long remained a puzzle for researchers. It was not discovered until 1948 by John Enders and his colleagues.

The experimental method, in other words exploration of a disease using a "model organism", proved to be misleading in polio research. At the beginning of the twentieth century Simon Flexner was the director of the Rockefeller Institute for Medical Research (New York, USA) and a leading authority on polio research. He was also a proponent of the animal experimentation method. Flexner studied the path of infection for poliomyelitis in rhesus monkeys and concluded that the virus was transmitted via the nasal mucosa and then migrated via the olfactory nerve to the brain and spinal cord. He believed that the results of his research with rhesus monkeys could be applied to humans. Yet in fact the path of infection in humans is not the same as it is in rhesus monkeys: in the case of humans the polio virus enters the body through the mouth and then multiplies in the intestine before attacking the nerve cells of the spinal cord.

Various authors maintained that the path of infection would have been discovered significantly earlier if research had not been concentrated one-sidedly on the results of animal experiments, but had instead taken greater account of research conducted on human patients (tissue samples etc.). With this in mind the history of

polio research is sometimes used as an argument to support shifting research away from animal experiments towards methods that do not use animal experiments.

LaFolette, Hugh / Shanks, Niall (1994): Animal experimentation: the legacy of Claude Bernard. In: *International Studies in the Philosophy of Science* 8 (3): 195-211.

Paul, John R. (1971): *A History of Polyomyelitis*. New Haven: Yale University Press (*Yale Studies in the History of Science and Medicine* 6), especially 107-252.



Preservation of life and avoidance of pain

Preservation of life and avoidance of pain

The Animal Protection Act also appears to assume that preservation of life is less important for animals than freedom from pain. For example, § 9 Para. 2 No. 8 Animal Protection Act requires the immediate and painless killing of surviving test animals insofar as they would otherwise only continue to live in pain and suffering. Similarly, the inflicting of pain is subject to considerably more rigorous regulations and is regarded - from the legal standpoint - as needing greater justification than the killing of test animals.

This weighting - better a painless death than survival with pain - is generally justified by the assertion that animals are "creatures of the present" without awareness of self or future: for them - unlike for humans - pain is therefore considered a greater evil than a painless death. This argument is, however, controversial; it is contended that, especially in the case of more highly developed animals, it makes sense to speak of individuality and future-oriented preferences. Just as with human individuality, this would then also substantiate protection of life or at least diminished dominance of the goal of pain avoidance relative to the goal of life preservation. Nida-Rümelin, Julian / von der Pfordten, Dietmar (1996): *Tierethik II: Zu den ethischen Grundlagen des deutschen Tierschutzgesetzes*. In: Nida-Rümelin, Julian (Hg.): *Angewandte Ethik. Die Bereichsethiken und ihre theoretische Fundierung*, Stuttgart: Kröner, 484-509.

Krebs, Angelika (2003): *Sprache und Leben*. In: Brenner, Andreas (Hg.): *Tiere beschreiben*. Erlangen: Fischer (Reihe Tierrechte - Menschenpflichten 9), 175-190.



Protection of Animals Act and Protection of Animals Ordinance

Protection of Animals Act and Protection of Animals Ordinance

The Protection of Animals Ordinance (TSchV) of 23 April 2008 is based on the Protection of Animals Act (TSchG) but does nonetheless contain some caveats against the latter. For instance does Article 25 paragraph 4 read "the livestock owner has to take reasonable measures in order to prevent the livestock from proliferating excessively" (unofficial translation). It is questionable how a castration is compatible with the compliance with the dignity of the living being as it is described in the Protection of Animals Act.

Concerning animal experiments, the Ordinance detailly sets the conditions under which these animal experiments are allowed to be conducted as well as the manner in which the testing animals are to be kept. Straining animal experiments have to be applied for and be reported at the cantonal Committee on Animal Experiments. The cantonal agency orients towards the Committee's decision.

Protection of Animals Act (German only)

Protection of Animals Ordinance (German only)



Protocol on Protection and Welfare of Animals dated 2 October 1997

Protocol on Protection and Welfare of Animals

Protocol



Re-use of Test Documentation

Re-use of Test Documentation

The Convention on Animal Experiments of the Council of Europe (Art. 29) and the European Union Directive on Animal Experiments (Art. 22) compel the member states to mutually recognise test results from safety checks.

In order to avoid multiple tests on vertebrate animals, various EU directives also require that first applicants and second applicants for substances agree upon joint use of the results of safety tests.

EU provisions governing the avoidance of multiple testing are contained inter alia in Directive 91/414/EEC concerning the placing of plant protection products on the market and in Directive 98/8/EC concerning the placing of biocidal products on the market.

Various national provisions, such as the Plant Protection Act (Pflanzenschutzgesetz) (§§ 14 ff.), the Act on Protection against Hazardous Substances (Chemikaliengesetz) (§ 20a), the Biocidal Products Act (Biozidgesetz) (§ 20a) and the Genetic Engineering Act (Gentechnikgesetz) (§ 17), put these provisions into concrete form and compel first applicants to make test data available to third parties (compulsory use of experimental data) where the insights obtained are dependent on animal experiments.

Convention on Animal Experiments of the Council of Europe

Directive 86/609/EEC (Directive on Animal Experiments)

Cited EU Directives:

Directive 91/414/EEC (plant protection products)

Directive 98/8/EC (biocidal products)

Cited national provisions:

Plant Protection Act (PflSchG)

Act on Protection against Hazardous Substances (ChemG)

Biocidal Products Act

Genetic Engineering Act



Speciesism

Speciesism

Singer's reproach of discrimination requires greater elucidation.

<http://www.drze.de/in-focus/animal-experiments-in-research> (37)

Discrimination (as it is commonly understood) is a breach of the principle of equality. If two living creatures that are equal in moral terms are treated unequally, this is discriminatory against the one that is disadvantaged. Yet who can be considered equal in moral terms?

The answer to this question depends, in turn, on which qualities of the living creature are recognised as morally relevant. It is taken for granted by Western societies that skin colour, intelligence and sexuality are not morally relevant. The disadvantaging of people on account of their skin colour or gender is therefore considered to be discrimination. But on account of their species?

If, as Singer asserts, the only morally relevant criterion is the capacity of a living creature to suffer, then all living creatures with the same capacity for suffering are in moral terms equal, irrespective of the species to which they belong or what other qualities they may have (for example intelligence, the capacity for language or the capacity for moral action). For Singer this fundamental equality makes the use of animals in the food industry or in biomedical research discriminatory. To quote Singer's own words:

"Racists violate the principle of equality by giving greater weight to the interests of members of their own race when there is a clash between their interests and the interests of those of another race. (...) Similarly those I would call 'speciesists' give greater weight to the interests of members of their own species when there is a clash between their interests and the interests of those of other species. Human speciesists do not accept that pain is as bad when it is felt by pigs or mice as when it is felt by humans".

(Singer, Peter: Practical ethics. 1979. Cambridge: Cambridge University Press, 51 f.)

Singer's approach has been debated from a number of standpoints. Critics particularly point to the fact that man's special moral status is not founded merely in his belonging to a particular species.

1) Moral capacity and intelligence (Bonnie Steinbock)

On the one hand, Singer's approach is criticised for suggesting that the equality of man is to be understood merely as the same capacity to feel. By way of objection, it is argued that within the human species there is an equality across race, gender and sexuality that extends beyond merely the same capacity to feel. As a matter of principle all humans are distinguished by their capacity for moral action - that is, action that takes account of the interests of other living creatures - as well as by their desire for autonomy, dignity and respect.

In contrast to Singer, various authors take the view that such qualities are morally relevant. The higher value attributed to human interests therefore does not constitute discrimination.

2) Equality not as actual equality (Heike Baranzke)

On the other hand, it is pointed out that the equality of man is not founded upon a "set of qualities" shared by all humans, but is instead independent of all qualities. The error of the racist, sexist or heterosexist would not then be that he or she attributes greater weight to a morally irrelevant inequality (skin colour, gender, sexuality) than to the more significant and exclusively morally relevant equality (intelligence, capacity for moral action). Rather, the racist, sexist or heterosexist commits the error of making the "value" of a person dependent in any way on his or her qualities. To put it another way, the core of the idea of equality is not descriptive, but normative.

In light of this critique it is difficult to specify criteria that creatures other than human ones would have to meet if they were to be deserving of respect in the same way.

Singer, Peter (1975): *Animal liberation - a new ethics for our treatment of animals*. New York: New York Review Book (Random House), especially 20-45.

Singer, Peter (1979): *Practical ethics*. Cambridge: Cambridge University Press, especially 72-105.

Numerous authors have engaged with Singer's argumentation. The following texts merely represent a small selection.

Baranzke, Heike (2002): "Alle Tiere sind gleich". Peter Singers Tierbefreiungsbewegung und ihre anthropologischen und ethischen Implikationen. In: Boloz, Wojciech / Höver, Gerhard (Hg): *Utilitarismus in der Bioethik: seine Voraussetzungen und Folgen am Beispiel der Anschauungen von Peter Singer*. Münster: LIT (Symposion : Anstöße zur interdisziplinären Verständigung 2), 101-154.

Steinbock, Bonnie (1978): *Specieism and the Idea of Equality*. In: *Philosophy* 53 (204), 247-256.

Flury, Andreas (1999): *Der moralische Status der Tiere: Henry Salt, Peter Singer und Tom Regan*. Freiburg/Br.: Alber (Alber-Reihe praktische Philosophie 57).

Ach, Johann S. (1999): *Warum man Lassie nicht quälen darf. Tierversuche und moralischer Individualismus*. Erlangen: Fischer (Reihe Tierrechte - Menschenpflichten 2), especially 106-159.

Nussbaum, Martha C. (2004): *Beyond "Compassion and Humanity". Justice for Nonhuman Animals*. In: Sunstein, Cass R. / Nussbaum, Martha C. (ed.): *Animal rights: current debates and new directions* New York: Oxford Univ. Press, 299-320.



Swiss federal constitution

Swiss federal constitution

In Switzerland, new principles in the federal constitution are being decided upon by the Parliament and the voting public after both chambers have consulted upon the matter. Later, these principles are being specified in the laws and ordinances. Swiss federal laws can contradict the Swiss federal constitution. This means that the federal court cannot overrule laws issued by the Parliament on grounds of unconstitutionality. Hence, democracy weighs more than the constitutional state in Switzerland. This does, however, not account for the relationship between laws and ordinances to the cantonal constitutions.

Swiss federal constitution



Transgenic Mice

Trangenic Mice

DNA (deoxyribonucleic acid) is considered the repository of an organism's genetic data. It serves as a form of "blueprint" for the various proteins that are produced in a cell and which essentially determine the properties of the cell. The DNA section that encodes a protein is referred to as a gene.

The DNA in transgenic animals has been deliberately modified: foreign genes are added ("knock-in") or "normal" genes are replaced by "non-functioning", i.e. non-readable, variants ("knock-out").

The modified DNA record can cause the transgenic animal to manifest itself differently (different phenotype) from other animals of the same species; for example, it might be short-lived or long-lived or it may carry a predisposition towards a particular form of cancer.

On the basis of the changes it is possible to draw inferences about the effect of the knocked-out or knocked-in gene. Through research with transgenic animals scientists hope to gain, inter alia, a deeper insight into the causes of genetically-related diseases. This knowledge is intended to assist with the development of innovative therapeutic procedures.

There are a number of reasons why mice are so often used for biotechnology studies: the relatively strong concordance of the mouse genome (the totality of genes is referred to as the genome) and the human genome, the short generation spans of the mouse and the animal's uncomplicated care all play a role. The mouse genome (like the human genome) has now been fully mapped.