

Animals have a right to life

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Summary

State and church must be separated; therefore the legal and the judicial system may not be based on religious dogmas but instead must be grounded on empirical-rational ethics, which are amenable to consensus. To achieve this, consciousness must be described in scientific terms and the anthropocentric view of animals as fundamentally different to humans must be criticised on a factual basis. It turns out that consciousness determines autonomy. And consciousness is an evolutionary continuity, meaning that there is no basic difference in

consciousness between humans and animals. Life is of the utmost instrumental value to autonomous beings, as it enables them to realise their autonomy and is thus in their highest interests. In contrast, killing is the greatest harm that can be done to such beings. As I, being an autonomous being, want to act autonomously, I demand a right to life from society to do so. The principle of universality compels me to demand the same right for every other autonomous being.

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1 Are questions of ethics questions of religion?

"What should I do?" – This is the central question in our life. Continually we are confronted with alternative options and must decide which course of action to take. As long as the decision I take affects only me, it is not really anybody else's business. But on what basis do we decide how to deal with one another, both individually and in terms of society, i.e. what is the basis for laws on interactions between living beings.

One could reformulate the question posed above as follows: What is good and what is bad? I should do what is good and refrain from what is bad and what is bad should be forbidden by law. But is the distinction between good and bad, as is so often argued, a question of religion and spirituality? Whereas non-religious assessment of these questions is regarded as materialistic, or even egotistic, and only considers the advantages to an individual, supposedly only true religion can deliver absolute evaluation. But what is true religion?

Religion is only a belief, without any factual, scientific basis. Unlike empirical-rational statements, religious ones can be neither justified nor do they allow criticism. They cannot be used as a basis for a decision affecting society as a whole, because no free consensus can be found in the absence of rational argument. If we do choose to base our decisions on what is good or bad on religion, then we can only force this opinion on others by using violence. Without rational, empirical arguments I have no hope of convincing anyone.

Is it true that there are no rational arguments on what is good or bad? The following observation, which dates back to Socrates, is interesting in this respect (Schmidt-Salomon, 2005): Believers usually answer the question of whether a religious truth can be unethical by saying that a religion proves itself to be true by having no unethical truths. By saying that, believers themselves are making a distinction between "good" in a non-religious sense and "good" in a religious sense. If a religion were to stipulate, for example, that children be tortured, then

the torture of children would be "good" for this religion. We, however, would consider this guideline to be unethical or "bad". In the words of the believers, this would then be an unethical religious truth. We therefore do have an opinion of what is "good" that appears to be independent from religion. Since the Age of Enlightenment, we have traced a slow and unsteady, but nevertheless real, development in society towards basic human rights and individual freedom away from torture, the death penalty and slavery. This development, with its own idea of "good", had to be achieved against religious resistance, for it was not a part of religion.

2 Ethics need consensus and not compromise

In a democracy, compromises are continually sought between the different interests of different groups of voters. In a representative democracy, ideally, the interest groups are represented in parliament or on decision committees. A compromise means that every interest group curtails its wishes somewhat. How much every group

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must amend their wishes depends on the distribution of power. Powerful interest groups make no curtailments; weak interest groups must make large amendments. Interests which are not represented are not considered in the compromise.

But ethics is about justice and must therefore be independent of the distribution of power. Ethics and justice are even brought as arguments against powerful groups to ensure that the interests of the weaker groups are also considered. Ideal ethics must therefore never orientate themselves on compromises, but must be suitable for consensus. The goal must be that all who have reasonable insight into the questions and are free of prejudice should reach the same consensus. And this condition is only given for rational-objective ethics that are based on empirical, scientific facts and not on religious ideas. Are such rational ethics possible?

The history of our society gives us hope in this regard. The Nuremberg Trials on Nazi war crimes were held by practically the entire world on an ethical and not a judicial basis. Today they are considered a victory of justice. The UNO Universal Declaration of Human Rights of 1948, a response to the crimes committed during World War II, and also the Helsinki Declaration of 1964 on medical experiments on humans are now globally accepted and come as close to a consensus on practical human interactions as possible. Only religious fundamentalists still refuse to agree to this consensus.

Similarities also exist with freedom movements, such as the freeing of slaves and the emancipation of women. Today it is internationally accepted that these freedom movements were right and necessary. The Austrian Civil Code of 1811, which is based on the ideals of freedom and equality of the Age of Enlightenment, is still valid today. Adaptations of the details of the laws do not undermine the fact that the basic principles of freedom and equality form an indisputable consensus in our society.

3 Rational instead of religious ethics

To find a consensus as described above, religious arguments must be excluded

from ethics, i.e. state and church must be separated. On which basis can ethical principles then be derived? If we assume an "ethical intuition" in society, then we have a problem with justice that is similar to the problem of compromise: the ethical intuition or the common opinion adapts with the status quo, i.e. it depends on the prevailing conditions, which are determined in practice by the power distribution. A slave society will intuitively find slavery right. Slavery in the Southern states in the USA resulted in conflict as a consequence of a logical inconsistency (Kolchin, 1993). After the Declaration of Independence, in which the equality of American citizens and their basic human rights were set down, it could not be explained, why Afro-American persons should not enjoy these civil rights. This lack of an explanation soon changed the opinion on slavery: it became a necessary evil. While the slave holders had until then boasted about their cruelty, they now had to find excuses why violent measures were necessary against the slaves. It took another 200 years until the slaves were finally freed, but this was undoubtedly the result of this logical inconsistency.

Another example that the prevailing power distribution modulates ethical intuition is that many children in elementary school concede that animals have the same right to life and protection from harm as humans. Children of this age often do not distinguish between humans and other animals in their assessment of suffering or death. They are often only pushed into this position later by societal reality. This I have learnt from more than 10 years of teaching about animal protection in schools. Can one trust an "ethical intuition" which can be influenced in such a way?

If we truly want to orient ourselves on unprejudiced fairness, then we can only try to find ethics based on scientific facts. Until today, science, and in particular the natural sciences based upon mathematical and logical thinking, remains the only basis for political decisions considered acceptable. Karl Popper (1998) developed the concept of "verisimilitude", on the basis of which such a consensus is formed. Therefore, rational ethics may not stand in contra-

diction to such a scientific consensus of verisimilitude, but must comply with the criteria of logical consistency, contextual substantiation and universality (Rachels, 1991).

4 Ethical realism and naturalistic fallacy

If we want to establish ethics using classical scientific methods, we must ask whether ethics can be a scientific phenomenon at all. In what sense can ethical qualifications such as "good" or "bad" or "right" or "wrong" really exist objectively? Values are always relative with respect to a given goal, and not absolute: something can be good or bad to achieve a certain goal, or to follow a specific preference. For absolute values we would need an absolute goal, to attain which something can be either "good" or "bad". However, (seemingly), only religion can provide absolute values. A meaning or a goal of the universe cannot be stated. Therefore, there are no absolute values (Rachels, 1998).

Often it is argued that evolution, as a universal force, moves towards more complex and higher species and that this could be considered the universal goal (see Gould, 1995 for examples). Accordingly, a mentally complex being, such as a human, would have an absolutely higher objective value than another being. However, this argument is wrong in two respects: First, evolution does not aspire to achieve complexity. Instead, evolution results in diversity and variety and therefore complexity is only a by-product. Furthermore, more complex beings are not privileged by evolution. Some evolutionarily successful beings are very simple and are in no danger of extinction (Gould, 1995).

But secondly, the argument that evolution strives towards this or that and that therefore one or the other concept is "good" is a confusion of categories. What "is" (evolution) is used to draw conclusions on the completely different category of what "ought to be" (value), without these categories being linked in any way. This conclusion, called a naturalistic fallacy, is therefore incorrect (Hume, 1978, p. 211).



Further typical examples of commonly used naturalistic fallacies in ethics are the following. Often it is stated that it is natural for humans to eat meat. Or it is natural that the stronger individual dominates the weaker individual, or that individuals of one species prefer members of their own species to other beings etc. And therefore it is ethically right that humans eat meat, dominate other animals and use them to the advantage of their own species, e.g. for medical experiments. But this line of argumentation is not rational. It is a naturalistic fallacy.

5 Consciousness, from the perspective of the natural sciences

One reason why one might think that religion should be called upon to consider ethical questions lies in the phenomenon of consciousness. I use the term consciousness to mean that which vanishes when I become unconscious. When I am fully unconscious I have no sensations. Therefore, consciousness is the ability to have sensations. Consciousness requires a conscious subject that experiences these sensations. As long as I am conscious I have continuous sensations and experience them in a subjective manner.

On first inspection it seems appropriate to separate matter and mind, body and consciousness, into different categories. While the matter, i.e. the body, underlies the laws of nature described by the natural sciences, the mind, i.e. consciousness, being immaterial, is not. It therefore must be religiously determined. But on closer inspection this division does not bare up to scrutiny. Consciousness is clearly controlled by physical or, to be more exact, by neurobiological factors. Consciousness can be influenced physically and chemically: it can be literally turned off using anaesthetics, or personality or character can be affected or changed as a whole, or momentary emotional states can be changed by direct intervention in the brain. There is no reason to suppose that consciousness should not be comprehensible in scientific terms. In any case, there is no alternative but to try to do so.

The body of any being is separated from its surroundings by its skin, within

which an internal environment is created; this internal state must be maintained for the being to continue to exist. In order to achieve that, the body has automatic regulatory processes controlled, for example, by the neuronal network. This self-regulation works more effectively when there is a central control centre: the brain. Such a nervous system is called a central nervous system.

It is not only the nerve pathways from all parts of the body that come together in the brain, the whole body is also represented in different brain regions. When the body interacts with the environment, this action is "simulated" in the brain. Consciousness, according to neurobiology (Damasio, 2000), is a non-verbal commentary on these happenings, an assessment and evaluation, i.e. an understanding of the action, being facilitated by yet other parts of the brain.

My ability to be conscious must have developed in the course of the evolution of my ancestors. In order for consciousness to evolve, it must have a measurable effect on the actions of conscious beings (Balluch, 2005). How does a conscious action differ from a non-conscious action?

A computer, blindly and without consciousness, follows the commands given by its software. It receives an input that it processes according to the software rules and converts into an output, e.g. solving a mathematical problem. I could simulate this computer activity by taking the same input and following the same operational commands, thereby manipulating the input. I would then be able, albeit slower than the computer, to arrive at the same output. In order to do this I need not understand what I am doing. I need not know anything about mathematics or even the problem at hand, let alone how to solve it. If I follow the set procedure, as the computer does, consciousness plays no role. Since consciousness has evolved, it must be something different than merely following computational commands. Consciousness must have an effect on an action over and above that of a computer programme operating on a set scheme of operational commands. And this effect of consciousness on actions corresponds with the ability to make decisions based on values (Balluch, 2006).

6 Values, the ability to suffer and autonomy

In the course of my daily life, I am continuously confronted with decisions I have to make; whether I should do this or that, what I should give priority to, what I should ignore, and what importance I should give to my personal gains in relation to how those gains may affect others and, in a wider perspective, society. In other words, I evaluate. When I give some things priority over others, I am giving them a higher value than the others. When I give, in this case, higher priority to my own gains than to society, I am valuing my own gains higher than those of society, and so on. In this way we can see that I have certain values and they determine my decisions and in turn, my behaviour.

Values form the cornerstones of my decisions, but, where do they come from? Let us imagine that on my right I have a tomato salad and on my left a potato salad. Which one do I reach for? Maybe I am not hungry or do not fancy salad and I therefore ignore them both. Or maybe I associate tomato salad with being ill because the last time I ate tomato salad I was ill, and therefore I reach for the potato salad. Or I might have an unconscious association with the pleasant social occasion on which I last ate tomato salad, which influences my choice. It could just as well be that I have found out that the tomatoes have been grown using pesticides or that they have been transported huge distances to reach me, and I therefore make a conscious decision to take the potato salad.

I can, therefore, have conscious and unconscious reasons for my decisions and in turn, my values. They have in common the fact that they form the basis for my decisions. This basis can, therefore, be unconscious, although the decision itself is conscious. Values develop in our consciousness and trigger a conscious decision there. This is autonomy, the freedom to be able to decide and act on the basis of understanding (for example that one does not like this specific salad), and not only on the basis of reactions to stimuli and of conditioning. Thus, the ability to evaluate stands and falls with the ability to decide, i.e. autonomy, and



is directly associated with consciousness. Autonomy is the fundamental characteristic of consciousness (Balluch, 2005). However, autonomy is not to be taken as the ability to see oneself as an entity of freedom, but in its most simple form as the ability to derive intentional actions from the estimation, evaluation and understanding of the interactions of mental objects with the mental picture of oneself (Damasio, 2000).

The ability to suffer is a special case of this characteristic of consciousness to evaluate and autonomously decide on the basis of values. To stay with the above discussed example: if the tomato salad is rotten and eating it would make me ill, then I would reach for the fresh potato salad. The suffering that I would experience through being ill is valued by me as negative. Not to suffer is a positive value. Therefore, suffering is one of many possible reasons for a valuation which determines my decisions. Accordingly, the ability to suffer is dependent on consciousness.

7 Why, some argue, there should be no right to life

The capacity for suffering, which is the most obvious and perhaps the most easily proven form of valuation – suffering is bad, happiness is good -, is currently used as a pivotal point of further argumentation in ethics (pathocentric approach, Mayr, 2003). However, this approach does not consider that the capacity for suffering is only a special case of the ability of consciousness to be autonomous and thus to evaluate. Yes, autonomous beings can decide to rather be free and suffer more than to be forced to live without suffering. Some autonomous beings could even decide to want to suffer. Suffering that is obvious to the outside must therefore not necessarily be considered negative by the autonomous being experiencing it. The subjective will of a conscious being determines its values, not its suffering. Pathocentrism is therefore too narrow; autonomy is the deciding criterion for values.

As an animal can be killed by a, for it, absolutely surprising and painless death,

pathocentrism as such cannot give a direct (i.e. without consideration of the suffering of others due to this death) justification for a right to life. Under this concept, only beings that can consciously value their own life as positive, i.e. that have a concept of life and death, would even be damaged by a painless death. And such beings with a concept of life and death supposedly are exclusively more or less only adult, mentally "normal" humans (Cigman, 1981).

On the other hand, the interests and preferences of a being that has a concept of death are not damaged by a sudden and unexpected, painless death. Before death, nothing has yet happened. After death, the being is no longer alive and therefore neither its interests nor preferences can incur damage. From this point of view there is no possibility to argue for a right to life on the basis of interests or preferences, whether with or without a concept of death (Luy, 1998).

In this ethical construction of a "life preference" of beings that have a concept of death, mentally retarded persons and children are usually only indirectly attributed with a right to life. Because their further life is of great value to and in the interests of many "normal" persons, they would indirectly be attributed with a right to life. Thus, these beings are represented by a powerful interest group, wich claims their right to life by an ethical contract (contractionalism) (Leahy, 1991).

Alternatively, one may argue with a general psychological fear, which would develop among "normal" persons if humans without the understanding of the concept of life and death had no right to life. Especially, because some of the "normal" humans could drop out of the "normal" category as a result of an accident or age related dementia (Birnbacher. 2006).

According to my opinion, these theses, though, are not convincing for the following reasons:

1. Autonomy is the primary function of consciousness. The capacity to suffer is a secondary quality. For the autonomous being autonomy determines subjective values; the capacity to suffer is only one possible criterion. Neither the capacity to suffer, nor the suf-

- fering itself nor the feeling of happiness are suitable as central ethical measures as each is too narrow.
- 2. A balance of the feelings of suffering and happiness between different beings, as suggested by pathocentric utilitarianism, is a confusion of categories similar to a naturalistic fallacy. I can only value in relation to a fixed preference system. However, there is no such higher preference system within which the suffering of a being with his or her own preference system could be substracted from that of another being with his or her own preference system. The suffering of entity A does not lie in the same category (or algebra) as the suffering of entity B, which would be a prerequisite to be able to form a sum of both sufferings. By analogy, in the case of the naturalistic fallacy what is and what should be are also wrongfully taken to be in the same category and put into relation to each other.
- 3. The conscious will is not the only basis for valuing something as good or bad. Everything that is beneficial towards what a being consciously wants is implicitly valued positively by this being, even if it is not conscious of this. Therefore, a being need not have the concept of life and death or need not consciously have the wish to continue living, to be damaged by his or her death. The autonomous being's life is of very great instrumental value and its death is a big loss.
- 4. In the case of many non-human animals a distinction must be made between the fear of pain and the fear of death. A rat that is irregularly subjected to, for it, unpredictable electric shocks, is in fear of pain. It behaves quite differently when it faces a direct threat of death or is made to fear imminent death by watching other animals being killed. In the first case, the rat is quiet and expectant, in the second case loud and in panic. These animals can thus clearly display a specific fear of death, which differs from the fear of pain.
- 5. Every being with a consciousness also has some form of self-consciousness, in which it discriminates between itself and its surroundings. Even in the simplest form of consciousness, in core



consciousness, the being must live in time, have a conscious short-term memory and, at least for a short time, keep its identity. Then it has, if only for a short time period, a preference to continue living (Balluch 2005).

- 6. If certain beings are to be granted the right to life in form of an ethical contract or a compromise, then that is not the basis of a rational, scientific consensus, which alone can lead to justice.
- 7. The psychological argument that people live in fear if persons defined as "non-normal" enjoy no right to life in society, is not convincing. In the Third Reich, in which far-reaching "euthanasia" was practiced, and so-called "burdens of existence" but also politically unsuitable or ethnically unwanted persons were rigorously killed, most people still did not live in fear. Often, contemporary witnesses speak of having felt a subjectively greater sense of security than in today's society. On the other hand, psychological arguments can be brought against the killing of non-human animals, e.g. basic sympathy or the psychological contradiction between giving loving care and simultaneously considering the life of the cared for animal ethically irrelevant. A person, who lovingly strokes an animal and then simply kills it from behind, is scarily ambivalent and unpredictable. The sudden killing of an animal without its knowledge of this can only succeed by delusion. It is first made to feel safe and then suddenly killed.
- 8. If acting wrongly from an ethical point of view is seen only consequentially as thwarting the interests of beings, even if it is their interest to live on the basis of an understanding of the concept of life and death, then painless, unexpected killing is not ethically wrong. As long as the being is alive, none of its interests are thwarted. When it is dead, it no longer has interests that could be thwarted. However, this argument only applies to consequentialistic ethics. Deontological ethics do not orient themselves on the consequences of an act, but value the act itself as good or bad. A right to life based on deontological ethics therefore does not face the problem that a being no longer exists after it is dead and therefore has no

disadvantage, and thus this counterargument does not apply.

8 From values to animal rights

Every being that possesses consciousness is able to act autonomously or intentionally, meaning, that it can decide whether it wants this or that. Exactly this is the evolutionary function of consciousness. And in order for this being to be able to decide between different options, it must make conscious evaluations. These evaluations are necessarily subjective. They correspond to the particular value system of the evaluating being. And this value system is determined through many different things, for example its genetic make-up and its prior experiences. "Good" and "bad" are relative, i.e. things are good or bad always in relation to the (unconscious) interests or the conscious aims of a being with consciousness.

Does that mean that all ethics, since they are based on values, have to remain subjective? Yes and no. Most values certainly remain subjective, but some values have a categorical existence, which is by necessity the same for every being that is able to have values and therefore such values are in that sense objective. Only categorical values can form the basis for deontological ethics, in which one does not deal with ethically good or bad consequences, but with ethically good or bad acting as such. And only non-consequentialistic ethics, such as deontological ethics, can evade the Epicurean argument that the unexpected painless death cannot be ethically bad since the being that would suffer from such bad consequences no longer exists.

When I want to play chess, for example, I need to find someone to play with, a chess board and pieces, time and so on. But, aside from these obvious things, there are also certain other basic requirements, which are needed implicitly, for example, my heartbeat. I cannot play chess without a heartbeat – I would simply die. For all activities that I could wish to do, three basic requirements are always necessary: I must be alive, I must be free to act and I must be unharmed. These three basic requirements – life, lib-

erty and freedom from harm – are categorically necessary, implicit conditions for being able to act intentionally.

Let us distinguish the conscious will of a being with consciousness from its unconscious interests, i.e. all those requirements that the being is not conscious of, which nevertheless must be fulfilled in order for the being to be able to exercise its will. It is then in the interest of every being with consciousness to be alive, to have liberty and to be free from harm. Every being with consciousness values its life, liberty and bodily integrity as good. Life, liberty and bodily integrity are, therefore, categorically good values because every being that is capable of evaluating them, values them as good, and in this sense they are objectively good (Balluch 2005).

9 The right to life

In a society like ours, there is an institution with a monopoly on violence. The reason for this is that through the existence of an all-powerful institution, such as the police force, all individual acts of violence can be prevented, because they do not stand a chance of defeating this all-powerful institution. Thus, this allpowerful institution has a monopoly on violence in society. With this monopoly on violence comes a great responsibility. After all, the all-powerful institution is in the position of implementing all manner of values. Accordingly, society has invented rights of the individual to certain things, which guarantee that the institution will respect those things and insure that others within society will respect

I have consciousness and therefore I have a will. Hence it is in my categorical interest to have life, freedom and bodily integrity. That this interest is categorical ensures that it leads to an objective value and as such to deontological ethics. So, on the basis of these objective values, I, as a being able to reflect ethically (moral agent) demand rights to life, liberty and bodily integrity from the all-powerful institution in society, because I have consciousness. When I now want to be rationally consistent or, in other words, want to follow rational ethics, then I must



simultaneously demand the same right to life, liberty and bodily integrity for all beings with consciousness (moral patients). These beings also fulfil the same requirements that I have for validating my own demands, wich are based on categorical values.

The same universality applies in the following instance: Let's say, for example, that I demand a pay rise because I have a PhD. After all, it proves I have had a better education than those who haven't got a PhD, I argue. Even when it is subjectively of no interest to me whether others with the same education also receive a pay rise, I must nevertheless, if I wish to be rationally consistent, also simultaneously, at least implicitly, demand the same pay rise for others holding a PhD. This is the difference between acting on an objective-rational rather than a subjective-emotional basis.

The form of universality used here can also be formulated as a categorical imperative according to Immanuel Kant: The maxims of an ethical demand must be valid as a basic law, for all cases in which the conditions for its justification are fulfilled.

As living is a necessary prerequisite for autonomy, its instrumental value is infinitely high for the respective being. Death is therefore the worst harm that can be done to a living being, completely independent of whether it has a comprehension of the concept of life and death and whether it consciously wants to live or not.

All beings, who, firstly, have consciousness, secondly, act on a rational basis and, thirdly, understand that because they are conscious, they have a categorical interest in their life, freedom and bodily integrity, and hence demand rights for those interests from society (moral agents), must of necessity demand the same right to life, freedom and bodily integrity for all beings with consciousness (moral patients). The basis for this is autonomy. The basic rights to life, freedom and bodily integrity are instrumental to safeguard the autonomy of the being that has them. But this right to

autonomy is different from the pathocentric view to minimise suffering. Sometimes, an autonomous life means more suffering. But we all still prefer autonomy than having others decide for us, what we must do, even if that might mean less suffering.

This conclusion is not a naturalistic fallacy. The basis for the conclusion is the fact that all beings, which are able to value (i.e. have a will) must absolutely and necessarily (categorically) deem their own basic freedoms to be good. Therefore, neither intuitive basic nor objective values are simply ad hoc introduced, and what "ought to be" is not being derived from what "is".

This so derived right to life is based on rational, scientific arguments and can therefore become consensus, and it is generally valid in society. That means that the monopoly on violence in society is obliged to respect and to defend this right to life of all conscious beings. This right to life is deontological on the basis of categorical interests and is not based on consequentialism. It is therefore irrelevant that after a sudden, violent but painless death the dead organism neither suffers nor experiences the damage done to its interests. Instead, it is the action of killing which is ethically wrong. Already today the animal protection law condemns the painless, sudden killing of animals and deems it punishable unless there are good grounds for this action.

10 Who has a right to life?

What remains to be done is to find empirically which beings possess consciousness and which don't. There must be empirical ways to find this out, as consciousness is a phenomenon that is part of natural science, since conscious beings must act differently to non-conscious beings, otherwise consciousness would not have evolved.

To find that a being responds to a stimulus or shows pain is not enough to prove the existence of consciousness, since those processes can take place without consciousness, by simple nervous or physiological reactions. It is known that a pain reaction of the body does not have to be accompanied by the conscious experience of pain. Also, instinctive actions or learning by conditioning does not suffice for a proof of the existence of consciousness, since such things can be simulated by neuronal networks that can be programmed on a computer. But, conversely, the fact that a being sometimes acts instinctively or according to its conditioning does not prove that it has no consciousness. After all, I have consciousness, and I do sometimes act instinctively and I most definitely can be conditioned.

Empirical criteria for consciousness are not straightforward to come by, since we have to look for an activity that cannot be simulated by computer programmes. But every single action taken alone can be simulated. Only if we do not know in advance the sort of problems we will encounter, will it be impossible to write a programme that can fully simulate a conscious being. Also, a defining characteristic of consciousness is that it does not always react the exact same way to the same problem; hence its actions cannot necessarily be reproduced under the controlled conditions of a scientific experiment.

Still, we can find criteria for consciousness, which can convince us of its existence in a being, if those criteria surface sufficiently often and under changing circumstances. Such criteria could be that we find a being is learning through comprehension instead of through conditioning, or that it shows, through adequate flexible reactions to different problems, that it has understood those problems, or that it orders its perceived world through sensible concepts and categories, or that it develops true culture in a group and so forth. Ethological studies prove this way that at least all vertebrates and cephalopods fulfil such criteria in a convincing way. Correspondingly, for reasons of rational consistency, those beings deserve the same rights to life, liberty and bodily integrity that we award ourselves.

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