

Telos: The Revival of an Aristotelian Concept in Present Day Ethics

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ABSTRACT *Genetic engineering is often looked upon with disfavour on the grounds that it involves ‘tampering with nature’. Most philosophers do not take this notion seriously. However, some do. Those who do tend to understand nature in an Aristotelian sense, as the essence or form which is the final end or telos for the sake of which individual organisms live, and which also explains why they are as they are. But is this really a tenable idea? In order to secure its usage in present day ethics, I will first analyze the contexts in which it is applied today, then discuss the notion of telos as it was employed by Aristotle himself, and finally debate its merits and defend it, as far as possible, against common objections.*

KEY WORDS:

I. Genetic Engineering and the Teleological Perspective

The genetic modification of living beings, including humans, animals, and plants, is something that many people object to, often with a vehemence and determination which does not seem justified on purely scientific grounds.¹ For in the main, these objections do not arise from a more or less rational risk assessment, nor from a sober, interest-based ethical assessment, but rather from an unrefined, deep-seated aversion to what is sometimes referred to as our ‘tampering with nature’.² Since ‘nature’ is a notoriously vague and covertly normative term, it is easy to see why this aversion is rarely taken very seriously by the scientists working in the field, and why

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objections based on any notion of ‘nature’ tend to be brushed aside as irrational or purely aesthetic.

However, there are exceptions. In 1995, the Banner Report of the *Committee to Consider the Ethical Implications of Emerging Technologies in the Breeding of Farm Animals*, which had been appointed by the UK ministry of Agriculture, Fisheries and Food, was issued. The committee, while seeing no *principle* objections to the genetic modification of living beings, nonetheless set a remarkable example by acknowledging that there are *some* uses which are intrinsically objectionable, namely genetic modification of a type that “can be thought to constitute an attack on the animal’s essential nature”.³ The report does not tell us, though, how we should decide in which cases an animal’s nature is being attacked and in which cases not.⁴ Instead, an example of what is believed to be such an attack is given, namely using genetic engineering in order to decrease the sentience and responsiveness of pigs, so that they will move less and accordingly acquire weight more quickly. It is obvious that the committee did not think that the pigs in this case would *suffer* as a result of the operation performed in creating them. Rather, the rationale here is that the pigs now cannot do what they are, by their very nature, *meant* to do, that they cannot live the way they are, as pigs, *meant* to live. There is, in other words, a *purpose* somewhere, not in the individual pigs, i.e. not consciously entertained by them, but notwithstanding *in* them, as part of their biological constitution which they share with other pigs. This constitution is conceived, not as something given, or static, but rather as a process directed to specific ends. When these ends are thwarted then the nature of the organism whose ends they are is said to be attacked. One could equally well say that the organism is forced to live in a way that is not *appropriate* to it, or a way that it, by its own intrinsic standards, *should* not live.

The view of the committee thus corresponds to a biocentric outlook on nature, which, according to Paul Taylor, makes us regard each organism as a “teleological (goal-oriented) center of life, pursuing its own good in its own unique way”. This is not to say that the organism’s pursuit of its own good is necessarily conscious or intentional, but rather that “a living thing is conceived as a unified system of organized activity, the constant tendency of which is to preserve its existence by protecting and promoting its well-being”.⁵ Of course, the argument here – if we assume that there is any – seems to be blatantly circular: The only reason that can be given for the claim that each organism pursues its own good is that it pursues *something*. Whatever it is towards which the tendency is directed *must* be good because, if it were not, there would not be a tendency towards it.

The same intuitive reasoning lies behind Bernard Rollin’s claim that an animal’s well-being involves “both control of pain and suffering and allowing the animals to live their lives in a way that suits their biological natures”.⁶ That there is such a biological nature is a fact that Rollin thinks

can hardly be denied. Rather, the belief that each organism has a nature that defines what it is and what it does, is held to be common sense:

As ordinary people know well, animals too have natures, genetically based, physically and psychologically expressed which determine how they live in their environments. Following Aristotle, I call this the *telos* of an animal, the pigness of the pig, the dogness of the dog – ‘fish gotta swim, birds gotta fly’. (...) Social animals need to be with others of their kind; animals built to run need to run; these interests are species specific. Others are ubiquitous in all species with brains and nervous systems – the interest in avoiding pain, in food and water, and so forth.⁷

Curiously, this passage already indicates that Rollin, after having thrown the old Aristotelian notion of *telos* into the debate, is not really willing to let anything depend on it. Instead, he immediately draws back from his original claim that an animal’s well-being involves something *besides* the control of suffering and pain, and translates *telos* back into the usual talk of “needs” and “interests”. If the notion of *telos* – the pigness of the pig, the dogness of the dog – really were the basic ethical concept as which it is introduced by Rollin, then it would have been better, at any rate more to the point, if he had written that “animals built to run are *meant* to run,” regardless of whether they actually *need* to run or have an *interest* in running. Instead, for Rollin, the notion of *telos* is clearly rather a heuristic device than a genuine ethical principle. This becomes fairly obvious when, for instance, he remarks that common sense identifies sources of suffering by “comparing the life we allow the animal to live with the sort of life it was evolved (or selected) to lead. When we know that an animal is social in nature and roams over large territories, we consider keeping it alone and in a small cage as inflicting suffering upon it, albeit not necessarily physical pain. On the positive side, common sense sees an animal that is ‘doing its thing’ – fulfilling its nature – as a ‘happy’ animal”.⁸ Taking an animal’s *telos* into account thus helps us to identify possible “sources of suffering”. Apart from that, its only other ethical function, for Rollin, is to serve as a convenient hook on which to hang the claim that we actually have some moral obligations to other living beings. To say that each animal has a *telos* is to recognize “that animals are ‘ends in themselves’, as Kant said of humans, not just means to our ends. What we do to animals matters to them, not just to us. In this fundamental moral respect, animals are like human persons, not like tools”.⁹ From this Rollin draws the debatable ethical conclusion that, for instance, “research animals are *entitled* to a living environment that suits their natures”¹⁰ (my italics.) This, however, apparently does not mean anything more than that their environment ought to agree with their basic interests. The ‘nature’ of an animal is not conceived as something that *transcends* the individual

animal and which ought to be protected as such. Telos is defined in terms of what needs and interests an animal actually has, rather than in terms of what needs and interests it *should* have in the first place, in virtue of being a pig or a dog. Hence, Rollin sees no good reason to hold that *all* genetic engineering is wrong, but only that which violates basic interests. Moreover, he believes that an animal's telos can well be altered without being violated. *Given* the telos, one should not violate the interests constitutive thereof, but that does not entail that the telos itself could or should not be changed.¹¹ "Telos is not sacred; what is sacred are the interests that follow from it".¹² So if we, for example, were able to identify the gene sequence that codes the drive to nest in chickens, and remove it, thereby creating a new kind of chicken which "achieves satisfaction by laying an egg in a cage," there would, in Rollin's view, be nothing wrong with that. Neither would there be anything wrong with decreasing the sentience and responsiveness of pigs by means of genetic engineering.¹³ On the contrary, if this was the only realistic way of making them suffer less – the last resort, so to speak – it would rather be our moral duty to use this device. This, of course, is a result that is contrary to that of the Banner Committee.

A more radical position than the one Rollin is willing to argue for is adopted by Michael W. Fox, who likewise seeks argumentative support from the notion of telos. Fox refers to what he calls the "ethical principle of the inviolability of an animal's *telos*"¹⁴ in order to justify his opposition to certain forms of genetic engineering and especially all forms that involve the creation of transgenic animals. Again, the telos of an animal is defined as "its nature or 'beingness'. In other words, the 'birdness' and unique qualities of a canary or eagle, the 'wolfness' of a wolf and the 'pigness' of a pig".¹⁵ Fox, however, is prepared to go all the way and to defend the telos itself against any kind of manipulation. Since telos is not confined to the level of the individual as the source of his interests and needs, but rather has its proper place on the level of the *species*, Rollin's suggestion to change an animal's individual nature in order to minimize the sources of suffering, is, in Fox's view, "totally to disregard the telos of an animal: its intrinsic nature and beingness".¹⁶ Fox accuses Rollin of letting himself be taken in by a false dualism between the animal and its environment: "The telos or 'beingness' of an animal is its intrinsic nature coupled with the environment in which it is able to develop and experience life. We can harm the *telos* in many ways, for example through environmental, genetic, surgical and pharmacological manipulation. To contend that we can enhance the natural *telos* of an animal – and thus by extension believe that we can improve upon nature – is *hubris*".¹⁷ More than anything else, transgenic manipulation constitutes in each and every case a violation of an animal's telos, because it entails crossing the natural biological boundaries between animal species. This is something which Fox professes has not been done before. Introducing cattle growth genes into pigs, or elephant growth genes into cattle, could so

disrupt the animals' *telos* (intrinsic nature) biophysically, metabolically, and developmentally, as to create a host of health and welfare problems".¹⁸ This host of problems, however, is not the actual reason why it is wrong to cross the boundaries between species. The actual reason is that, in doing this, we are "tampering with nature," "violating the *telos*". This is thought to be a sufficient reason to abstain from it. At the same time, Fox knows very well that the idea that each living organism has an intrinsic nature, or *telos*, is very much an absurdity to many scientists. He himself quotes statements issued by members of the *National Institutes of Health Genetic Engineering Committee* in 1985. There the microbiologist Prof. M. J. Osborn claims that the "idea that a species has a 'telos' is contrary to any evidence provided by biology and belongs rather in the realm of mysticism. That mysticism is a poor basis for sound public policy is amply confirmed by history". In the same vein, Dr Maxine Singer declares: "The notion that a species has a *telos* (a purpose) contravenes everything we know about biology. Species can have, and many in the past have had, a *telos* (an end), namely, extinction. That is the only *telos* known to exist".¹⁹ Especially this latter statement is an interesting one. It seems cynical, but only if one reads the term *telos* in the same sense as Fox, namely as natural purpose. In that case, saying that a living organism's *telos* is extinction means that it only exists *in order to die*. Hence, killing an animal presumably helps it realize its *telos*. On the other hand, if there really is no *telos* in *that* sense, in the sense of natural purpose, then the term is merely a synonym for the *final state* of an organism, or a species, and this is indeed extinction.

But are Osborn and Singer right to take it for granted that there is no such thing as a *telos* in the proper, purpose-including sense? Does it really contravene "everything we know about biology", so that the notion of *telos* may in the end be nothing else but just another of those "opportunistic flights of fancy" which are invented, as Michael Leahy once claimed with reference to Tom Regan's use of the notion of "inherent value," with the sole purpose of putting "powerful weapons of rhetoric and persuasion in the hands of the converted?"²⁰ In principle, there are actually two questions that need to be answered here. First, is there, or is there not, a *telos* to each living being? And second, if there is, what *ethical* significance does it have? In order to answer these questions it is expedient to go back to the original notion of *telos* which was introduced into biology and systematically developed by Aristotle.

II. *Telos* and Natural Good in Aristotle

The starting point for Aristotle's teleological account of living organisms is a simple, undeniable empirical fact which, come to think of it, is nonetheless quite astonishing.²¹ It is the fact that each living being produces offspring that resembles it in kind. Thus human beings always generate human beings,

pigs always pigs, dogs always dogs, and so on. It never happens that a woman gives birth to a cat, or the other way round. Although we usually take this for granted, it is actually very much in need of explanation. Aristotle, knowing nothing about genetics and genomics, nonetheless thought that this curious regularity could only be accounted for if one assumed that right from the very beginning of the process during which a certain organism is formed, the outcome must somehow be anticipated. In each stage of this process, what a thing is, has to be connected to, and has to depend on, what it is going to be. Thus the whole process of formation must be understood as being guided by the future, i.e. by something which is not yet, but which will be, provided the process is not disturbed or prematurely terminated. A human embryo, for instance, is what it is and develops the way it does, precisely *because* of what it is going to be, namely a human being. In other words, there must be some sort of a final cause at work, which Aristotle defines as “that for the sake of which” (*to hou heneka*) a particular living organism is formed.²² This final cause, which Aristotle also calls *telos* (meaning final end, or completion)²³ explains why everything has become and indeed must have become as it is. In biology, when we ask *why* an animal has this particular form and structure, why it has these organs and not others, and why they are combined and connected with other organs the way they are, we will not be satisfied, if someone gives us all the *efficient* causes that have played a role in the process. When, in reference to the form and structure of living beings, we ask ‘Why?’, what we really want to know is what this particular form and structure is *for* – we might as well say: what it is *good* for. In Aristotle’s view, the *logos* of living organisms, i.e. the real reason why they are what they are, is their *telos* (PA I.1, 640a).²⁴ Accordingly, every single part of an animal has to be explained with regard to its *telos*, or, which is the same, to its “nature” (*physis*) (Phys. II.8, 199b). This is definitely not meant to be just a heuristic device. Rather, the *telos* has *ontological* priority. It is that which sets the whole process in motion. So every part is actually formed with regard to the whole of which it is meant to be part.

There are different levels of organization: the uniform parts (e.g. bones, sinews, flesh, blood) are made for the sake of the non-uniform parts (the face as a whole, a hand, a finger) (PA II.1, 646b). But likewise is the body as a whole made as it is for some purpose (*heneka tinos*) (PA I.1, 642a). For instance, the human mouth with its soft, flexible lips is made for talking. Generally speaking, the whole point of an organism’s physical construction is to enable it to perform those actions which are natural to it (PA I.5, 645b). This is why Aristotle opposes Anaxagoras who argued – in line with modern evolutionary theory – that man is the most intelligent of all animals because of his hands. Instead, says Aristotle, it would be more reasonable to assume the contrary, namely that humans have been given hands because they are the most intelligent of all animals (PA IV.10, 687a). The underlying idea, of

course, is that our peculiar kind of intelligence belongs to our nature as human beings. It is one of the things that makes us human. This particular nature itself, however, is not subject to change. It is not thought to have evolved over time, but rather to be fixed and to precede every single instance of humanness. If this premise is granted, then it is indeed not very reasonable to assume that we are as intelligent as we are because of our hands, since this would make our nature seem a mere product of chance, as if hands and all the other particulars of our body appeared at some stage in time for no good reason at all (as Empedocles seems to have believed.) But at least on the level of the individual, that is, the ontogenetic level, we can hardly avoid the impression that hands are made for being used as hands. I will return to this topic later.

Now, for Aristotle, because every part of an organism's body is what it is in virtue of the whole whose part it is and for the sake of which it exists, it loses its identity when separated from that whole. Its identity depends completely on its function. This means that, for instance, blood is blood only in the living body, not in the dead one (in contrast to, for instance, water which is water wherever one finds it) (PA I.1, 641a). Here the integration is *essential* to that which is integrated. Therefore, the hand of a dead man is, properly speaking, not a hand. At any rate, it is not more a hand than the picture of a hand is a hand. Neither is a dead man, properly speaking, still a man. He has become something else because he has lost his defining 'form' (*eidos*) or 'soul' (*psyche*) which, again, is nothing but the telos, the final cause, that for whose sake the matter was organized the way it is (Phys. II.8, 199a).²⁵ Form, or soul, is to the body as the cutting of an axe is to the axe, i.e. as the function is to the structure. Only when the potential (*dynamis*) of the axe receives a realization (*energeia*) in the actual cutting, the axe is truly, completely, and wholly, an axe. Likewise, only when the eyes are actually seeing are they completely and wholly eyes. When not seeing they are not really eyes at all. The same holds for the body as a whole. It loses its identity when being separated from the actions for whose sake it exists. From this it follows that an organism which is prevented from performing those actions which it is natural for it to perform is robbed of its identity, or defining form, and this means nothing less than that it has been destroyed *as* this particular organism. Thus we can infer that, say, a chicken which is prevented from nesting is, properly speaking, not a chicken anymore, and a sheep that is prevented from grazing is, properly speaking, not a sheep anymore. In a certain sense both the chicken and the sheep have stopped existing. Admittedly this is a strange thing to say: since neither the chicken nor the sheep is dead, they surely do still exist. But Aristotle's point is that their existence has lost its purpose (or one of its purposes) so that its whole intricate organization, the subtle interaction of its parts, has become futile. In other words, one important aspect of what it *means* to be this

particular organism has been taken away from it, and this is, at any rate from the perspective of the organism itself, always an evil.

But why and in what sense is it an evil? In Aristotle's view the organization of every living thing is directed towards an end. However, this end is *internal*, not external.²⁶ This is to say that living beings do not exist for the sake of other living beings, but only for themselves. Their parts are organized to serve their own purposes and nobody else's. Since the whole organization of a living being, though, is directed towards the realization of these purposes, towards the achievement of the ends which are natural to it, these purposes and ends cannot be regarded as other than *good*. For how could that for the sake of which everything else in the formation of an organism happens not be good from the point of view of that organism? "That for the sake of which" is necessarily a good (*agathon*), because, Aristotle says, it is the *telos* of all genesis and movement.²⁷ And this good is, for each organism, nothing other than, in the words of J. M. Cooper, "the full and active life characteristic of its kind".²⁸

One should keep in mind here that this meaning of good is entirely independent of any subjective experience the organism might or might not have. Whether the organism *suffers* when being prevented from performing those actions which, by its physical nature, it is meant to perform, is simply irrelevant to the question of whether performing those actions is a *good* for it and being prevented from performing them, an evil. Thus we cannot only say that birds are made the way they are so they are able to fly, and fish are made the way they are so they are able to swim, but also that flying is a good for birds, and swimming is a good for fish, and accordingly, that not being able to fly is an evil for birds, and not being able to swim is an evil for fish. The general rule is that an organism's life is a good one when it achieves its goal or finds the good at which it aims.²⁹ For human beings this good life might be (among other things) a life of reason (i.e. a life that incorporates the exercise of reason), for birds (among other things) a life of flying, for sheep and cattle (among other things) a life of grazing, and so on.

Although this notion of what it means to have a good life and what it means to have a bad life, does, as I said before, not rest on the *experience* of it as good, it is nonetheless an intuitively plausible notion. We pity a human being who is mentally deficient even if she does not seem to be unhappier than we are. We pity somebody who leads a dull life full of trivial pursuits even though he does not seem to mind at all. Somehow this makes it even sadder. It seems to us that this life is somewhat deficient: that there is a good missing from this life, a good which we think *ought* to be there, for if it is not, this life does not deserve to be called fully human. We usually have no problems with a pig that lives like a pig, but if a human being lives like a pig we feel that something is wrong, that this is simply not the way a human being is *meant* to live. And if somebody suggested genetically engineering a race of mentally deficient human beings who would not mind being enslaved

and being mistreated by us, most of us would certainly find the very idea abhorrent and morally detestable. Now why should the same reaction not be appropriate with regard to animals? Take, for instance, the situation when a bird is kept in a small cage where it cannot fly. Maybe it suffers, we imagine it probably does. But the point is that even if it did *not* suffer, and we *knew* it did not, we would still feel the wrongness of keeping it in a cage. And again, it would somehow make the whole thing even worse, if we had found a way to manipulate the bird so that it did not even want to fly anymore. We would then have killed the bird in it. But what would we have got instead?

III. Teleology and Common Sense

Today we have come to believe that modern science has ruled out final causes, that there is no place for them, or at least no need for them. Aristotle's biological principles are obsolete, since we have learned to explain the world and the genesis of living organisms in it without having recourse to natural teleology. Efficient causes will do the job just as well. Or so we think. Each of us *acts*, though, as if final causes were real. In fact, we tend to *define* our humanity by the ability to act for reasons, and not just simply as a consequence of the preceding conditions. An action that was due exclusively to efficient causes would not be an action at all. Rather, it would be something that *happened* to us, or with us. Asking somebody *why* she has done something is to ask her for what *reason*, or with what *purpose*, she has done it – with Aristotle we could say: *for the sake of which* she has done it. I get into my car in order to drive to the university, i.e. *because* I want to go there, and I drive to the university in order to get some work done, i.e. *because* it is my intention to do so. An action, qua action, always has a telos. Of course, my wants and intentions are present now and function as efficient causes, but they are nonetheless directed to the future, to certain ends in the future. This future aspect is important for understanding the very efficacy of my present wants and intentions. Moreover, it is an essential part of our experience of ourselves and therefore also an essential part of what, for us, it *means* to be a human being.

However, it is still quite common to adopt a convenient dualism which neatly separates what human beings do from what happens within the rest of nature. That means, in short, final causes for humans, and efficient causes for everything else. When Francis Bacon dismissed final causes as “idols of the tribe” he argued that human nature is such that it sees final causes everywhere although they evidently belong only to human nature, and not to the nature of the universe.³⁰ But do humans then defy the nature of the universe? Are they not part of it themselves? Surely we must admit that they are, that we are. And it would be very curious indeed if with the rise of mankind a whole new, hitherto unknown kind of causation had come into the world. Also, it would be very hard to reconcile this with the idea of

natural evolution. The charge of anthropomorphism is to no avail as long as the only alternative is an unjustified anthropocentrism. Whitehead was right to point out that “any doctrine which refuses to place human experience outside nature, must find in descriptions of human experience factors which also enter into the descriptions of less specialized natural occurrences. If there be no such factors, then the doctrine of human experience as a fact within nature is mere bluff, founded upon vague phrases whose sole merit is comforting familiarity”.³¹ Of course, this is exactly what some modern biologists and philosophers who favour a mechanistic model of human nature profess to believe: If we think that we act for some future end, we only *think* we do. But in fact we are wrong. In so far as we regard ourselves as free agents capable of acting for good reasons, we are entangled in an illusion. This is probably consistent if one takes it for granted that there are no final ends in non-human nature. However, as Hans Jonas correctly remarked, the exclusion of teleology from biology is not a result of induction but an *a priori* decree of modern science.³² It has not been proved yet that living organisms can be explained entirely in terms of efficient causes: it is simply presupposed. Neither is there a real conflict between efficient causes and final causes such that there can only be efficient causes at work *or* final causes but not both at the same time. Rather, final and efficient causes can be viewed as two aspects of the same process of causation.

It may seem, though, that the Aristotelian notion of telos depends very much on the idea that species are eternal forms which are not subject to change. In contrast to Aristotle we know today – or think we know – that species are not natural kinds. Rather, the notion of species is a convenient classification, and not a biological reality.³³ It helps us to bring some order into the world of living organisms, but the “real world consists only of individuals who are more or less closely related to each other by virtue of descent from one or more common ancestors”.³⁴ Species change and evolve, with the effect that neither diachronically nor synchronically can we always determine to which species a certain individual belongs. Nor is reproduction only possible between individuals which are said to belong to the same species. Does that mean that Aristotle’s account of telos and natural good is simply out of date? That is what Stephen Clark seems to think:

A further difficulty for moralists is the rejection of norms in nature. If there is no one way of life and character which best suits all or most members of a particular kind, such that we may detect deformity, disease or deviance by comparison with that ideal type, can there be ‘a good human life’? Can we truthfully suggest that battery chickens are deprived by being denied ‘the’ life that chickens would live ‘in nature’? If species are only genealogical groups, such that members need not

especially resemble each other, we have no right to suppose that there is one way only (however vaguely defined) for any particular species.³⁵

However, even if species do not have a particular nature, the individuals of which they consist certainly do. Maybe it is not natural for all fish to swim, and not natural for all birds to fly, but it is still natural for most individual fishes to swim, and for most individual birds to fly, in the sense that they are, and not accidentally, constructed in a way that enables them to swim and fly, respectively. A normal fish is made to swim, and a normal bird is made to fly, not less than boats are made to swim and aeroplanes are made to fly. The only, if decisive, difference is that the ends to which boats and aeroplanes are directed are *external* to them, in the sense that *we* build them with these ends in view, whereas the ends of living organisms are *internal* to them, in the sense that they build themselves towards their end.³⁶ Aristotle was not so much concerned with species but with the genesis of individual organisms,³⁷ a genesis that is evidently directed to a certain goal: a state of completion in which the becoming finds its destination. This goal has something to do with this particular organism's origin, with its line of ancestors, but it does not really matter whether this line consists in multiple realizations of the same *eidōs*, or rather in realizations of a changing *eidōs*, or of various closely related *eidōs*.³⁸ At any rate, the *good* Aristotle talks about is not the good of the species, but the good of an individual. Stephen Clark doubts that we can still, after having learned that the concept of species is flawed (if taken as an absolute concept), truthfully suggest that we can deprive battery chickens by denying them 'the' life that chickens would live 'in nature.' But the Aristotelian idea of nature and telos is something quite different. It is not about how chickens would live 'in nature' and what 'the' life of chickens is like, but rather what this particular chicken is, towards which particular end it is directed, and what, in consequence, its own particular good is. Now, a chicken that is forced to live in a battery clearly does not live the life to which it is directed. And should the chicken have been genetically manipulated so that its drive to nest is gone, it would in its whole structure still be directed to a life that is denied to it when kept in a battery. One cannot change the telos of an organism (in an Aristotelian sense) by just removing or transferring a few genes in order to get rid of a particular trait. Aristotle's whole point was that the organism is just that: an organism. This means that it needs this particular trait in order to be complete, because no organ is what it is independent of the others and independent of the purposes it is meant to serve. If we could genetically design human beings lacking the possibility of living a fully human life (to use their hands as humans do, to use their lips as humans do, etc.) and, simultaneously, of all desire to live such a life – so that there would be nothing they would miss – we could still deplore their state and say that harm has been done to them,³⁹ because we perceive the gap between what

they now are and what, judging by the way their bodies are constructed (human hands, human lips), they were meant to be. And exactly the same holds for animals. It is sad to see a tiger confined to a small cage when we have the impression that he would much prefer to roam in the wild, but it might be considered even sadder to see it there and to have the impression that he does not even mind anymore, and is for all we know rather content with his lot. This impression is justified as long as we are prepared to accept, with Aristotle, that there can be evils for living beings which they themselves are not aware of. Certainly there is no conceptual difficulty here. There is no logical necessity in thinking that the only possible evil is suffering, that where there is no suffering there can be no evil. That suffering is an evil might be thought to be true in most, if not in all cases. However, we usually do not doubt that there can be other evils as well, death for instance, or permanent anaesthesia. Aristotle thought, in unison with some contemporary bioethicists,⁴⁰ that every organism has its own kind of good, and although he could give no reason for this apart from the intuition that whatever it is 'for the sake of which' all the parts that make up a particular organism are made and conjoined, *must* be good, the intuition itself is as plausible as it is possible for *any* intuition about what is good, or bad.

Of course we can, even if we accept the idea that each organism has a good of its own, always claim that this particular notion of good is in no way relevant to our concept of *moral* good. Thus we can admit that pigs have a good of their own and without contradiction deny that this puts us under the moral obligation to take this good into account whenever we deal with pigs. After all, why should a good for *them* be a good for *us*? This question, though, can *always* be raised. It is the same as to ask, Why be moral? For the whole point of morality is to take the good of others seriously and to take it into account. There is, admittedly, no *logical* need to make somebody else's good our own. It is entirely a moral need. Accordingly, whether we should grant all living organisms a *telos* and whether we should respect this *telos*, is less a matter of fact than a matter of value. It is part of a certain way of looking at the world. And looking at the world through the eyes of Aristotelian biology may, after all, be itself a *moral* decision, something which we feel we owe the living beings which happen to cross our human ways.

Notes

1. See T. R. Lee, C. Cody/E. Plastow, *Consumer Attitudes towards Technological Innovations in Food Processing* (Guildford: University of Surrey, 1985).
2. See I. A. Hamstra, *Public Opinion about Biotechnology: A Survey of Surveys* (European Federation of Biotechnology Task Group on Public Reception of Biotechnology, 1998).
3. M. Banner, *Report of the Committee to Consider the Ethical Implications of Emerging Technologies in the Breeding of Farm Animals* (UK Ministry of Agriculture, Fisheries and Food, 1995).

4. See M. Gott, 'Ethical Issues relating to transgenic animal production', *Anzccart News*, 15 (March 2002).
5. P. W. Taylor, *Respect for Nature. A Theory of Environmental Ethics* (Princeton: Princeton University Press, 1986), p. 45. Cf. especially pp. 119–29.
6. B. Rollin, *The Frankenstein Syndrome. Ethical and Social Issues in the Genetic Engineering of Animals* (Cambridge, Mass.: Cambridge University Press, 1995), p. 157.
7. *Ibid.*, p. 159.
8. *Ibid.*, pp. 168–9.
9. *Ibid.*, p. 160.
10. *Ibid.*, p. 164.
11. *Ibid.*, p. 171.
12. *Ibid.*, p. 172.
13. In his earlier book *Animal Rights and Human Morality* (Buffalo, NY: Prometheus Books, 1981), Rollin seems to at least consider a different view. "We (...) do not wish to prolong a life that is in gross and hideous violation of the creature's *telos*, even if the creature is conscious and not suffering." (p. 60) This passage suggests that an animal's *telos* ought to be respected even if violating it does not make the animal suffer.
14. M. W. Fox, 'Transgenic Animals: Ethical and Animal Welfare Concerns', in P. Wheale and R. McNally (eds), *The Bio-Revolution. Cornucopia or Pandora's Box?* (London and Winchester, Mass.: Pluto Press, 1990), p. 38.
15. *Ibid.*, pp. 31–54.
16. *Ibid.*, p. 34.
17. *Ibid.*, p. 32.
18. M. W. Fox, Superpigs and Wondercorn. *The Brave New World of Biotechnology and Where It All May Lead* (New York: Lyons and Burford, 1992), p. 26.
19. Both quoted by Fox, Superpigs and Wondercorn, p. 23.
20. M. P. T. Leahy, *Against Liberation. Putting Animals in Perspective* (London/New York: Routledge, 1991), pp. 220, 74.
21. See K. v. Fritz, 'Teleologie bei Aristoteles', in G. A. Seeck (ed). *Die Naturphilosophie des Aristoteles* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1975), pp. 243–50.
22. Aristotle, *De Partibus Animalium* (PA), I.1, 639b.
23. *Physica* (Phys.), II.3, 195a.
24. See also *Physics* II.8, 199b.
25. Cf. Aristotle, *De Anima* II.4, 415b.
26. There are in Aristotle's writings only two very short passages that might be taken to indicate such an external finality (PA IV.13, 696b26; Politics 1256b16) but they are good reasons not to take them at face value. See D. M. Balme, 'Teleology and necessity', p. 279, in A. Gotthelf/J. G. Lennox (eds), *Philosophical Issues in Aristotle's Biology* (Cambridge: Cambridge University Press, 1987), pp. 275–85; Wolfgang Kullmann, 'Different Concepts of the Final Cause in Aristotle', in A. Gotthelf (ed.), *Aristotle on Nature and Living Things* (Bristol: Bristol Classical Press 1985), pp. 169–75.
27. *Metaphysica* (*Metaphysics*) A.3, 983a. See also PA I.5, 645a. This argument is, of course, not less circular than Fox's.
28. J. M. Cooper, 'Hypothetical Necessity and Natural Theology', p. 272, in Gotthelf/Lennox, pp. 243–274.
29. See F. J. E. Woodbridge, *Aristotle's Vision of Nature* (New York: Columbia University Press, 1965), p. 79.
30. F. Bacon, *Novum Organon* I.48.
31. A. N. Whitehead, *Adventures of Ideas* (New York: The Macmillan Company, 1933), p. 237.
32. H. Jonas, *The Phenomenon of Life. Towards a Philosophical Biology* (New York: Harper and Row, 1963), ch. II.II.1.

33. Cf. J. Dupré, 'In Defence of Classification', *Studies in the History and Philosophy of the Biological and Biomedical Sciences* 32 (2001), pp. 203–19.
34. Cf. I. M. Dunbar, 'What's in a Classification?', in P. Singer and P. Cavalieri (eds), *The Great Ape Project* (New York: St. Martin's Press, 1993), pp. 109–12.
35. St. R. L. Clark, 'Apes and the Idea of Kindred', in *The Great Ape Project*, pp. 113–125.
36. P. W. Taylor, p. 124.
37. See D. M. Balme, 'Aristotle's Biology was not Essentialist' and especially the appendix 'Note on the *aporia* in *Metaphysics Z*', in Gotthelf and Lennox, loc. cit.
38. See D. M. Balme, *Aristotle's De Partibus Animalium I and D Generatione Animalium I* (with excerpts from GA II.1–3) (Oxford: Clarendon Press, 1972), p. 97.
39. That we can harm somebody without causing any suffering or pain is a common notion in legislation and in common morality. Cf. J. Feinberg, *Harm to Others. The Moral Limits of the Criminal Law* (New York/Oxford: Oxford University Press, 1984).
40. Apart from those already mentioned for instance H. Verhoog, 'The Concept of Intrinsic Value and Transgenic Animals', *Journal of Agricultural and Environmental Ethics* 5 (2), pp. 147–60; H. Rolston III, *Environmental Ethics: Duties to and Values in the Natural Environment* (Philadelphia: Temple University Press, 1988).