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Brave New Unnatural World

On some issues Christians have provided a strong prophetic witness. Historically, one thinks of William Wilberforce's fight against the slave trade and Lord Shaftesbury's campaign against the exploitation of children in factories. More recently, one thinks of Martin Luther King's crusade for civil rights and Archbishop Desmond Tutu's struggle against racism and apartheid. But there are other issues of justice where Christians speak with conflicting voices, and some issues where a Christian conscience has found hardly any voice at all. One of those issues where Christians have yet to register anything like the appropriate level of concern is over the genetic manipulation of life.

Despite fashionable talk of the "integrity of creation," when it comes to confronting precisely the issue of how far we should go in redesigning the structure of life itself, Christian voices, more often than not, grow silent. This silence indicates a vacuum in moral theology that can only be explained by the history of neglect when it comes to basic issues that should affect our understanding of animals as God's creatures. In this chapter, I appeal to our imaginations in the hope of rekindling a need for a kind of theological "back to basics."

Imagine that you are sitting at a table with a large electronic button in the middle of it. Imagine that this button is connected to all species of animal and plant life. Once pressed, it will unleash forces that will enable you to restructure and redesign all life on this planet.

Animals and plants will be redesigned into objects for our

convenience. Pigs will have human genes injected into them to make them grow faster; hairless pigs will be designed for consumer acceptability; cows will conveniently quadruple their capacity for milk; featherless chickens will be designed especially for intensive conditions in hot climates—animals tailor-made to the demands of our stomachs; animals genetically modified for our taste and convenience.

Will you press this button? Will you by this one act genetically redesign the nature of animal life? I hope that at least some would share with me a sense that this would be going too far, that such a step would *really* infringe the integrity of creation and reduce sentient life to the status of objects and things.

But I have to say that something like this button has already been pressed and is being pressed daily. And the means through which such control is being exercised is the science of genetic engineering. Research units worldwide are pioneering ways in which we can secure absolute genetic control over other creatures. The control of DNA, the very structure of life, is now within our grasp. And the examples I gave of human DNA in pigs, cows as milk machines, and hairless pigs are already a possibility, if not a fact.[1] Images of science fiction are already becoming science fact.

Indeed, I have been brought face to face with one of these new scientific marvels. I went to Israel with the BBC to film the results of the genetic modification of poultry.[2] We visited a scientist who had redesigned chickens so that they had less plumage. The purpose? Apparently thinly feathered birds are less prone to heat stress and can therefore be reared in intensive conditions in hot climates. When pressed during the interview how he viewed these creatures, his reply was as frank as it was revealing: Animals reared for meat are economic commodities, "meat machines."

But, it may be said, what's new? Haven't we always exploited other creatures—not least of all through selective breeding? It is certainly not new that we are seeking to manipulate animal life, even in especially cruel ways. Indeed we must be clear that the selective breeding of farm animals already causes them suffering. The quest for "higher efficiency" means that animals are

bred for faster growth rates. In practice this means risking the welfare of animals for profit. Examples include painful joint and leg problems in pigs, heart disease in broiler chickens, leg problems in beef cattle, and turkeys who cannot mate since their "body shape makes it impossible for their reproductive organs to come into contact." Apparently, turkeys have been "selected for huge meaty and profitable breasts, which make mounting impossible."[3]

No, it is not new that we are exploiting animals in new and cruel ways. But what is new is that we now have the absolute technological ability to reduce animals to things. Genetic engineering is one more step—yes—but also the ultimate step toward total human mastery over the animal world.

Patenting animals has become the commercial symbol of this new kind of relationship. For many years, researchers have used animals in laboratory tests, including cancer research. Many of these tests involve the artificial creation of cancer in animals. With this new technology at our disposal, we have been able to manipulate animals genetically so that they "naturally" develop cancer without human intervention. These self-creating laboratory tools—for that is what they are—are now actually patented in European law.

Patenting means that they are classified alongside other commodities, like new gadgets or consumer durables, as human inventions. The "oncomouse" (the name of the first patented animal) will ineluctably be followed by the oncopig, the oncochicken, and the oncochimp. Patenting utterly reduces the status of animals to things. Its purpose is to enable commercial enterprises to legally own their invention and to make a profit out of it. "It may be no exaggeration to say that we stand on the brink of a wholly new relationship to other creatures: no longer custodians of our fellow creatures but rather dealers in new commodities."[4]

To all these developments we can talk as much as we like about ethics committees and regulatory legislation and posses of inspectors (all of course may be welcome), but none of this is going to fundamentally thwart the forward thrust of this research—so long as we have the same basic idea of animals as resources. In

order to think imaginatively, we have to think fundamentally; we have to address the underlying philosophic conception of animal life. We have to dig deeper to the theological bottom line, and that bottom line is this: We do not own animals; they do not belong to us.

As already noted, in some ways we Christians have only ourselves to blame, for we have allowed our ancient texts, like Genesis, to be interpreted as justifying might is right. Dominion means responsibility—that we have a divine duty to care for the earth—but so often we have been silent when others (including Christians themselves) have taken it to mean that the world is ours and we can do as we like with it.

The fundamental truth then is that it is not our world; it is God's world. We are set over it—not as masters—but as stewards and servants of God's moral purpose. Our vocation is to care, to tread softly on this earth, remembering that it does not belong to us. For myself, I recoil in horror at the prospect of ever-increasing human manipulation, control, and domination of the earth. The created world is not perfect, but it does have its own integrity and worth which compels respect. Our species more than ever suffers from an overdose of hubris, pride, the perpetual sin of thinking more highly of ourselves than we should, even that we are the only species that matters before God. Scientists are changing the doctrine of human sinfulness into the doctrine of human perfectibility. Who are we to make a world in which each and every species of life has no other reason for living except that of serving the advantage and comfort and convenience of the human species?

I do not believe overmuch in conspiracies by scientists, even conspiracies by politicians. The truth about genetic engineering is altogether more simple—and sinister. Genetic engineering is simply the practical outworking of a worldview that has abandoned any notion of God the Creator. No integrity of creation. No moral limits to the exploitation of creation. Indeed the very notion that there is something called "creation," or even "nature," worthy of respect, is itself being jettisoned.

I began by asking you to imagine pressing the button that would unleash the genetic engineering of animals. Imagine now

that you sit in front of another table, with another electronic button before you. This device is connected not to animal life but to human life. Suppose that the pressing of this button would unleash the genetic manipulation of humans—suppose that by this one act you could genetically modify the antisocial behavior of the entire human race. Think about it: no vandalism, no alcoholism, no wife-beating, no child molestation, no rape, no social violence. With one act you could redesign the human species.

We are not, even here, so far away from the bounds of possibility as might be supposed. Given ten, twenty, thirty, forty, fifty years we shall have mapped all the genes—social, psychological, political, even perhaps spiritual—that make us who we are. When this happens, it cannot be long before social policy discourages the birth of certain humans with "high risk" genetic traits.

The two writers who have, in their differing ways, most understood the implications of genetic science applied to human society have been Aldous Huxley and C. S. Lewis. It was Huxley of course whose *Brave New World*, published in 1932, offered us the bleak prospect of totalitarian social control of human reproduction. Whether his book was, in the words of one commentator, intended as "a satire, a prophecy or a blueprint" is still unclear.[5] What is clear is that just weeks before its publication, in an interview with the BBC, Huxley endorsed eugenicist measures designed to prevent the "rapid deterioration . . . of the whole West European stock."[6] The Nazis' own program of eugenics put paid to early enthusiasm for such ideas in the UK, but it is worth noting that well before that time notions of state control of reproduction had a significant popular appeal.[7]

But it is C. S. Lewis, alone among theologians, who offers us the most insightful understanding of the kind of world envisaged by genetic engineers. Originally provoked by a conversation with a scientific colleague at Oxford,[8] Lewis's fantasy *That Hideous Strength*, published in 1943, narrates a conversation between Lord Feverstone of NICE (the National Institute of Co-ordinated Experiments) and the young Mark Studdock, an ambitious Fellow of Bracton College:

The second problem [argues Feverstone] is our rivals on this planet. I don't mean only insects and bacteria. There's far too much life of every kind about, animal and vegetable. We haven't really cleared the place yet. First, we couldn't; and then we had aesthetic and humanitarian scruples; and we still haven't short-circuited the question of the balance of nature. All that is to be gone into. The third problem is Man himself.

Go on. This interests me very much.

Man has to take charge of Man. That means, remember, that some men have got to take charge of the rest—which is another reason for cashing in on it as soon as one can. You and I want to be the people who do the taking charge, not the ones who are taken charge of . . .

What sort of thing have you in mind?

Quite simple and obvious things, at first—sterilization of the unfit, liquidation of backward races (we don't want any dead weights), selective breeding. Then real education, including prenatal education. By real education I mean one that has no "take-it-or-leave-it" nonsense. A real education makes the patient what it wants infallibly: whatever he or his parents try to do about it. Of course, it'll have to be mainly psychological at first. But we'll get on to biochemical conditioning in the end and direct manipulation of the brain . . .

But this is stupendous, Feverstone.[9]

Baldly put, such designs appear not so much stupendous as fantastic, but the central point—as Lewis correctly grasps—is not about the details of the techniques as such (whether they be psychological, educational, biochemical, or genetic) but rather about power. As Lewis puts it, less prosaically, in his book *The Abolition of Man*, "For the power of man to make himself what he pleases means . . . the power of some men to make other men what *they* please."[10] Note how in Lewis's scenario the conquest of humanity is preceded by the conquest of animals and plants, indeed nature itself: ". . . what we call Man's power over Nature turns out to be a power exercised by some over other men with Nature as its instrument."[11]

We still have yet to learn from Lewis's prescience in this matter. Moralists and theologians go on supposing that an absolute dividing line can be drawn between the way we treat humans and nonhumans, utterly failing to see that for many scientists that dividing line has long since disappeared. The uncomfortable truth is that the now commonly accepted use of absolute power by humans over nonhumans in the matter of genetic manipulation is only the necessary experimental precursor to subsequent genetic manipulation of humanity itself.

Not incidentally, humans also share any adverse effects of the manipulation of animals. As early as 1857, social critic W. B. Adams sagely observed, "Our artificial breeding of animals produces in them many kinds of artificial disorders which recoil on their devourers."[12] The making of herbivores into carnivores by feeding them with offal from other animals, and the subsequent crisis about BSE, or "mad cow disease," is a classic example of where contempt for the natural lives of animals has rebounded on their manipulators.

In his farewell address, President Eisenhower said famously that we must be alert to the danger that "public policy could itself become the captive of the scientific technological elite." Christians and theologians eager not to appear defensive or reactionary, or both, have overwhelmingly failed to take on this scientific technological ascendancy. Elementary theological truths are now offered in public debate as though they were only "private, personal beliefs," of relevance solely to those who happen to hold them. The result is that the radical and necessary theological critique of genetic science as applied to animals and humans has gone largely by the board. Indeed, so unaware are churches generally about the issue that it may not surprise us to learn that the Church Commissioners in the UK until recently held substantial investments in the leading American corporation at the cutting edge of genetic engineering, and apparently without any moral qualms.[13]

But theology cannot be so easily shoved aside in the longer run, even despite the unadventurousness of its practitioners. This is because theological questions about "Who owns what?" "Who is responsible to whom?" and "What moral limits should we observe?" are all fundamentally human questions which sooner or later *have* to be confronted. Despite the apparently relentless,

onward march of reproductive technologies, there remains a deep-seated public unease reflected in less than wholehearted endorsements for techniques such as transgenic animals and genetically modified foods. Surveying the evidence of discontent, one team of researchers concluded with this admirable understatement: "The prevailing focus of this ambivalence appears to be moral, a collection of anxieties about unforeseen dangers that may be involved in a range of technologies that are commonly perceived to be 'unnatural.'"[14]

Later on in 1946, Huxley said of *Brave New World* that if he were to rewrite it he would offer the Savage a "third alternative" in which "science and technology would be harnessed to serve rather than coerce humankind":

> Religion would be the conscious and intelligent pursuit of man's Final End, the unitive knowledge of the immanent Tao or Logos, the transcendent Godhead or Brahman.[15]

Interestingly enough, Lewis appeals to what he calls the doctrine of "the Tao," namely a notion of "natural law" found in all cultures and which includes respect for nature and natural objects.[16] The challenge and promise of this "third alternative" still awaits us.

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Ethical Objections to Cloning

If cloning is here to stay, as some people seem to think, so is the accompanying controversy as well. Many people feel uneasy about cloning and what the practice might mean for human beings. Indeed, most discussion has almost entirely centered on the likely effects of the development of such techniques in relation to human subjects. In one sense, this is entirely understandable since, as we have seen, nonhuman "models" have often been just that: models for later work on human subjects.

But what such discussion misses is the need to address fundamental objections to the practice of cloning animals. Utilitarian justifications which have appeared in the press[1] tend to give the impression that ethical objections have been adequately dealt with. This is far from being the case. Anyone acquainted with the ethical literature about animal welfare and rights that has emerged over the last thirty years will have been struck by how even serious discussion in the media has been conducted in considerable ignorance of ethical work in this field.

In the light of this, it seems essential to highlight some of the basic issues that have not received anything like the consideration they deserve. In this chapter, I summarize five of these basic ethical and theological objections.

1. *Cloning represents an ethically regressive view of animals.* When we think of something as "progressive" we envisage that which is genuinely advancing, enlightening, improving, ameliorative, or bettering. In precisely these

senses there *has* been progress in our moral understanding of nonhuman animals. The change of perception can be described quite simply. It is a change from the idea that animals are simply resources, commodities, machines, tools, here for our use or means to human ends, to the realization that animals are sentient beings with their own intrinsic value, dignity, and rights. This insight has been played out in a variety of ways in a multitude of books, scholarly articles, and papers[2] and, of course, various positions have been taken. But the consensus of ethical and philosophical opinion has shifted dramatically against an instrumentalist view of animals.

To give just one example: In a recent heavyweight contribution, David DeGrazia offers a comprehensive critique of current animal usage from a utilitarian perspective and concludes that "it is clear that the institution of factory farming, which causes massive harm for trivial purposes, is ethically indefensible."[3] It is no exaggeration to say that among those who have addressed the issue at length, the view that animals deserve our moral solicitude—that is, that they have a right to have their interests taken into account and that proper consideration of their interests should involve significant changes to our current lifestyle—is uncontroversial.

In this context, the notion that animal cloning represents moral progress is obviously misplaced. Animals are not bettered, or improved, or ameliorated by the act of cloning—indeed quite the reverse (see objection 2 following). What is most dominantly shown in the act of cloning is that animals *can be* cloned—that is, they are beings that can be manipulated, controlled, and exploited. To put no finer point on it: that they are here for our use. But it is precisely this instrumentalist view of animals that has undergone such relentless ethical scrutiny and been found wanting.

It is sometimes argued that if it is right to farm and kill animals for food then it must also be right to manipulate them genetically for research or farming. But the two cases are logically and morally distinct. Even

if it can be shown that we may make use of animals in specific limited circumstances occasioned by genuine human need, it does not follow that we have the right to subordinate their life entirely to human needs or to take over their life as their absolute masters. Cloning represents a new tier of exploitation—the concretization of the old view that animals belong to us and are here for our use.

2. *Cloning renders animals liable to harm.* It is frequently overlooked that cloning experiments are just that: experiments. These experiments straddle the physiological adaptability of animals. It follows that while not all these experiments may cause actual, direct harm, some undoubtedly will do so. Published accounts of the first Edinburgh experiments in 1996 failed to report significant abnormalities. In addition to death through malformed internal organs, one lamb had to be delivered by caesarean section because it had grown to twice its normal size in the womb, and all but one of the five cloned lambs were at least 20 percent larger than they should have been.[4] Researcher Ian Wilmut is reported to have said that birth weights had been omitted because "no scientific meaning could be attached to them."[5] But whether they have scientific meaning or not, they clearly have moral significance and are relevant to any proper moral evaluation. We do not yet know all the details surrounding the latest cloning experiments, but the published report this time indicates significant abnormalities.[6] We shall be told, of course, that the harm suffered was minimal or nonexistent, and in some of these experiments that may have been the case. But what we can be reasonably certain of is that these experiments *risked* such harm and, in some cases at least, caused actual harm.

   The infliction of such harm on animals is no light matter, and it is perplexing that recent discussion by the government and the media should have neglected this central issue. We should also be clear *why* it matters morally. Some people seek to justify the infliction of such harm on animals on the grounds that they are different from us. But are there any *morally relevant*

differences between, say, a newborn child and a sentient animal? By common consent we find the infliction of harm and suffering upon children morally outrageous—and rightly so. But if we ask *why* that is so, the answer is, as we have seen, that they are vulnerable, defenseless, unprotected, morally innocent, and subjects of a special trust, and these considerations apply not only to newborn infants but also equally, if not more so, to animals.

Some utilitarians will resist this line and maintain that "benefit" can justify the infliction of either death or harm, or both. In this mode, we find the Science and Technology Committee of the U.K. parliament justifying cloning on the grounds of its "potential benefits." But on closer examination these "benefits" prove to be of a largely indirect, long-term, overstated kind. Indeed the difficulty in securing adequate justification is accepted by the Committee in this rather revealing line: "It is notoriously difficult to predict the benefits which will arise from a particular piece of research."[7] Quite so, but what is lost here is the ethical realization that such unpredictability and uncertainty count *against* the risking of actual harm to animals. Even in utilitarian terms the case has simply not been made. An appeal to some putative—and indirect—future benefit does not constitute a case of moral necessity. And what, in any case, is the supposedly compelling human need represented by such genetic manipulation? Nothing other than the creation of animals as bigger and better meat machines or laboratory tools.

3. *Cloning intensifies a morally reductionist view of animals.* Journalists who were invited to see "Dolly" in her pen and who photographed her profusely for the world's press were the willing participants in a massive public relations exercise. They perhaps can be forgiven for not reflecting on the invasive experimental procedures which caused her to be or, less obviously, on the previous experimental procedures that went so badly wrong. A healthy, appealing animal makes good copy. But a moment's reflection will surely lament the triumph of image over reality.

And that reality is the institutionalized, routine use of millions of animals today for research purposes. This involves the subjugation of animal life to human purposes in ways hitherto undreamt of in human history. This realization should give us some pause. Is it really self-evident that the nature of each and every species of life should be subordinated to human need and welfare, however indirect or hypothetical? There is an important distinction to be drawn between the individual human use of animals sometimes prompted by necessity and the institutionalization of such usage on a vast scale as it is today.[8] Moreover, even if *some* such use could be justified, it must be questioned whether now is the time to deploy yet another technique—in addition to all the other techniques of manipulation[9]—that will have the effect of more permanently reducing animals to designer products.

We stand at yet another moral crossroad in our relations with animals. Perhaps the best analogy is the emergence of industrialized—"factory"—farming in the 1960s. We were assured at the time that no animal would needlessly suffer, that intensive conditions would be in the animals' "best interests," and, most deceptively, that we could have *more*—and that more cheaply—without more cost to the animals. Thirty or so years later, we now know how fully deceived we were and that the costs—and not only to the animals concerned but also to ourselves—were considerably greater than had been supposed.[10] Moreover, only now are we beginning to dismantle some of the inhumane systems —the veal crate, the sow stall, the battery cage—that were previously lauded for their technical ingenuity. Perhaps it is not going too far to say that while in the 1960s we began to *treat* animals as machines, now in the 1990s we have begun to *make* them machines.

4. *Cloning involves the commercial degradation of animal life.* In a moment of rare candor, former Archbishop John Habgood wrote of the motives behind cloning experiments:

> But should science be going down this road at all? What is the point of it? The simple answer is—money. The driving force behind most of the research in this field has come from the agricultural industry. I use the word industry deliberately. Cloning is a means of standardizing products, and that is what industry always wants.[11]

The statement is all the more remarkable because Habgood, while cautious, is not opposed to animal cloning. The gist of his article is that what we do to animals should not justify what may be done to human beings. His argument deserves some scrutiny: "Even those who do not believe in God generally recognize a quality of 'otherness' in people," he maintains. "People are not things to be controlled or manipulated; they are other beings, with their own consciousness of being, to whom we relate and respond."[12] The puzzle here is how all human subjects could be included within such a definition, and thereby protected against cloning, but not nonhuman subjects as well. To deny that we can detect "otherness" in animals, and that animals too are self-conscious, is to fly in the face of substantial scientific evidence.[13]

But note the underlying argument: Animals can be controlled and manipulated purely for money and convenience—just because they are animals. This putative total dividing line morally between how we treat animals and how we treat humans really will not stand up. Indeed Habgood's own commendable caution leads him to conclude tentatively in this direction. To assimilate living beings into "a mechanical model" might "on a superficial view promise greater freedom and prosperity." "On the contrary," he concludes, "the more we treat animal life as being manipulable for human convenience, the greater the temptation to think of human life in similar terms."[14] Indeed so. But it is so precisely because the absolute distinction (in terms of moral treatment) between humans and nonhumans previously supposed is insupportable. What we do to

animals—as sentient, self-conscious, intelligent beings—does influence our understanding of moral limits, or lack of them, in relation to other sentient, self-conscious, intelligent . . . human subjects. The stark moral truth must be unmasked: Not satisfied with simply exploiting animals, we now presume to change their nature in order to do so more profitably. In the chilling words of one research scientist, ". . . we can design the whole carcass, if you like, from embryo to plate to meet a particular market niche."[15]

5. *Cloning represents a spiritually impoverished view of animals.* Perhaps the most disturbing aspect of recent discussion has been the attempt to relegate to the sidelines, or even silence altogether, theological objections to cloning.[16] This is disturbing because while sometimes presented as considerations only relevant to the narrow confines of religious believers, they often raise wider issues that desperately need a hearing in order to gain some perspective on scientific developments. Let me give three examples.

   First, while proponents of cloning often appeal in a straightforwardly utilitarian way to "benefit," their understanding of what benefits the human species is often remarkably narrow. What informs the Science and Technology Committee's defense of cloning is *inter alia* a sense of "scientific vistas," the likely profits of the pharmaceutical industry and, of course, an appeal to medical spin-offs.[17] These considerations are more or less worthy ones, but they are not the only ones. What is not addressed, for example, is the debit side involved in developing techniques that treat animals as machines, or the likely social and institutional effects of so doing. Are humans really benefited by a wholly utilitarian and instrumentalist understanding of other sentient creatures? At least it is a question worth addressing.

   Second, the Science and Technology Committee rightly points out that the regulatory framework governing animal experiments applies to the Edinburgh cloning experiments. The regulatory system is intended to ensure that no "unnecessary suffering" is

caused to animals.[18] But beyond this bland assurance is the seldom addressed issue of moral limits. That issue is persistently sidestepped by reference to the regulatory system, whereas anyone with any knowledge of regulatory systems knows that they invariably *manage* rather than *address* ethical questions. Hence the illusion is created that the issue of moral limits has been adequately faced when in fact it actually has been bypassed.

The issue is this: Is it right to manipulate animals genetically—that is, to change their God-given nature—in order to increase profitability and convenience? That issue was pinpointed in a recent address on industrialized farming by an unlikely advocate of animal rights, the Prince of Wales. On genetic manipulation, he questioned, "What actual right do we have to experiment, Frankenstein-like, with the very stuff of life?" He continued:

> We live in an age of rights. It seems to me that it is about time our Creator had rights too. I believe we have now reached a moral and ethical watershed beyond which we venture into realms that belong to God, and to God alone.[19]

Some will find this line unconvincing or alarmist, or both, but it contains the germ of an important theological truth. I have expressed it elsewhere by arguing that animals have rights because God their Creator has the right to see that creation is treated with respect.[20] This insight is not just available to those who believe in God or the rights of God's creatures. The essential point is that there are moral limits to what humans may do to change the intrinsic nature and integrity of other sentient beings—even in pursuit of apparently worthy ends.

Third, reference has already been made to the notion of the "intrinsic value" of animals. Such an idea does not explicitly require a theistic view of the world, but it is clearly consonant with it, and obviously makes sense within it. For if God is the loving Creator of all,

> everything created—especially beings with sentience and intelligence—has value in itself because God made it. From this standpoint, the value of other living beings is tied up with the confession of a Creator God who guarantees the objective value of what is created. All this is not to deny that theists generally, and Christians in particular, have historically anything other than a poor record on animal protection but, equally, we should not overlook how the same tradition can provide a positive, theologically grounded, defense of animals.

Failure to grasp these points has meant that commentators—even, and especially, Christian ones—frequently lapse into a kind of moral parochialism when it comes to discussions about animals, as if God only cared for one of the millions of species in the created world. This, in turn, has led to a practical form of idolatry. By "idolatry" I mean here the deification of the human species by regarding human beings as the sole, main, or even exclusive concern of God the Creator.[21] The treatment of animals often appears a small issue to Christians, but if the doctrine of God the Creator is taken seriously, it means, at the very least, that an estimate of our own needs and welfare is not the only basis on which we should judge our relations with the animal world.