

Stephen R. L. Clark

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CHANGING KINDS: ARISTOTLE AND THE ARISTOTELIANS

– Stephen R.L. Clark –

Abstract. Aristotle is routinely blamed for several errors that, it is supposed, held science back for centuries – among others, a belief in distinct, homogenous and unchanging species of living creatures, an essentialist account of human nature, and a suggestion that slavery was a natural institution. This paper briefly examines Aristotle's own arguments and opinions, and the perils posed by a contrary belief in changeable species. Contrary to received opinion even amongst some of his followers, Aristotle was not a species essentialist and his ethical theory, properly expanded, provides arguments against bioengineering human and other species without a clear view of what should count as beauty.

Keywords: species essentialism, Aristotle, teleology, genetic engineering, evolutionary theory.

Aristotle's Errors?

Aristotle, it is often still supposed, held science back for centuries. He is said to have believed that women have fewer teeth than men, that the heart rather than the brain was the principal organ of feeling and reflection, that there were “natural slaves,” that the sun travelled round the earth, that heavy things fell faster than light things, that some living things arose by spontaneous generation out of stagnant soil or water, that being female was a defect on a par with dwarfism, and that biological species were immutable. More damagingly still, he suggested that “scientific knowledge” could be assured only by demonstrative deduction from a handful of first principles, that only what happens “always or for the most part” was important for philosophical enquiry, and that working with one's hands was no proper life for a gentleman. Medieval thinkers, it is widely supposed, preferred to believe Aristotle rather than their senses, and only the glad Renaissance set us free from scholastic darkness. Scholars may dispute almost all these claims, observing that either Aristotle did not say these things at all, or – at least – he did not suppose them incontrovertible. Medieval historians especially have emphasised the long European and Islamic pursuit of truth by whatever careful means, drawing perhaps on Aristotelian texts but never simply declaiming them. Demonstrating the errors of those who thus list “Aristotle's Errors” is beyond my current

brief, except to emphasise that the “Master of them that know” was indeed a polymath, a careful enquirer, and an honest philosopher, always ready to re-assess his own and others’ convictions.

The particular issue for this paper concerns biological kinds – the notion that Aristotelian species were immutable, and that it was only with the emergence of evolutionary theory in the nineteenth century (not only, and not earliest, in Darwin’s *Origin of Species*) that we shook free of the old Aristotelian synthesis. Charles Darwin was not the first to speculate that there were forms of life before us, nor yet that all forms of life – both past and present – were genealogically related. He was not the first to try to exclude all final causes from his account of nature. He was not the only one to notice that in a Malthusian struggle for life it is generally those with some obvious superiority (of strength, or wit, or versatility) that survive to breed. Conversely, he was not himself responsible for every element of the neo-Darwinian synthesis that has come to dominate mainstream biological circles, and the mind of the chattering classes – any more than Aristotle was responsible for every element of the “Aristotelian Synthesis”. Notoriously, Darwin was himself Lamarckian in allowing for the inheritance of acquired characteristics, and pre-Mendelian in that he did not know how inheritance could pass particular characteristics down, rather than blending, and so homogenizing, variations. He was a gradualist (supposing that evolutionary change happened by almost indiscernible increments – fortuitously, in the same direction – over very many generations) and uniformitarian, rejecting the then-prevalent idea that the history of life was littered with catastrophe. Neither of these notions now seems certain. He was neither the first to find it difficult to reconcile natural evil and orthodox theism, nor as militantly atheistical as some of his disciples. There are traces in his writings of an intolerable racism, but also clear evidence that he was personally and politically humane – very much as is true of Aristotle.¹

But what was the Aristotelian Synthesis, at least so far as it concerns Biology? He argued against the Empedoclean story (which has come to be regarded as Darwinian in spirit) that present-day organisms are only the survivors of an era in which all manners of combinations and degrees of separation were tried out. On the contrary, biological form is so well adapted to need that the teleological implication could not be ignored: we don’t just happen to have hands, heart, lungs and the rest, as if those things could ever have existed separately and then – by accidental conjunction – been conjoined. Nature does nothing in vain, and whatever widespread characters and organs there may be will exist for a purpose – both the

¹ See: Clark [2000a, 2000b].

welfare and survival of the organism in question, and the continued being of the terrestrial cycle of existence. That cycle, he thought, has been going on “forever”, and the generations of humankind are infinite – though we have no record of them thanks to recurrent disaster.² Proverbs and folk-stories are “the remnants of philosophy that perished in the great disasters that have befallen mankind, and were recorded for their brevity and wit,”³ and – by the same token – we can ourselves expect that even our modern civilization will evaporate one day. There have always been human beings, and other creatures of roughly the same sort as nowadays, all struggling to maintain their species-forms despite disease and shipwreck. Not every element of this account was ever acceptable to Abrahamic believers, who insisted rather that this world had a definite beginning (not all that long ago), and that someday it would have a final end (not merely a familiar collapse and subsequent revival, but an end to temporal becoming). But at least this much remained (perhaps) a dogma: the world of living creatures we inhabit and compose is teleologically directed, and its variations are aimed at (partly) realizing the forms implicit in the Mind of God. There is something that makes for a good dog (or horse or human) because there is something that makes for a dog (or horse or human): particular examples are more or less defective, more or less deformed, by failures in their material base, or errors of their own judgement. What creatures of a given sort should be (if there is any doubt) is shown in what they generally are. “Underneath such descriptions is an idea of a singular, universal body, an idealized composite of the ‘best’ features of real bodies”⁴ – a notion given some force by the undoubted beauty of composite photographs.⁵ Hybrids, on the other hand, appear grotesque or even offensive, falling between two or more different ideals of beauty and biological propriety. Even hard-headed biologists, I have found, are somewhat disturbed even by such minimal attempts at cross-breeding as the “geep” (a hybrid of sheep and goat).⁶ Attempts to hybridize human and chimpanzee – with a view to inventing a better laboratory model for human disease – are also found disgusting, at least among the European heirs of Abraham.⁷

² Aristotle *Physics* 3.206a26.

³ Aristotle, *On Philosophy* fr.8 Rose: Ross [1952] p. 77 [fr. 10]. Everything has already been discovered, and forgotten, an infinite – or at least an indefinite – number of times: *De Caelo* 270b19-20, *Meteorologica* 339b27-8, *Politics* 7.1329b25-6.

⁴ Barcan [2004] p. 34.

⁵ See: Galton [1907] p. 240–241; Langlois & Roggman [1990].

⁶ See APC [2001].

⁷ There are of course more reasons to find the programme disgusting than merely dislike of hybrids: that anyone could seriously suppose that such a hybrid would be sufficiently like mainline

There were clear theological reasons for the Enlightenment rejection of formal and final causes: we should not suppose that we can tell what goals God may have in His creation, nor should we “idolize” particular recurrent patterns. To see and understand what actually is, we had better empty our perceptions of all easy judgements about what is “beautiful” in nature, or what “perverse”, and concentrate on simpler, even mechanical, models. Values, Forms and Final Causes should be abandoned along with fairies and vital spirits. So Thomas Sprat, in writing his proleptic *History of the Royal Society*, wrote vehemently of the Real Philosophy:

The poets of old to make all things look more venerable than they were devised a thousand false Chimaeras; on every Field, River, Grove and Cave they bestowed a Fantasm of their own making: With these they amazed the world. [...] And in the modern Ages these Fantastical Forms were reviv'd and possessed Christendom. [...] All which abuses if those acute Philosophers did not promote, yet they were never able to overcome; nay, not even so much as King Oberon and his invisible Army. But from the time in which the Real Philosophy has appear'd there is scarce any whisper remaining of such horrors. [...] The course of things goes quietly along, in its own true channel of Natural Causes and Effects. For this we are beholden to Experiments; which though they have not yet completed the discovery of the true world, yet they have already vanquished those wild inhabitants of the false world, that us'd to astonish the minds of men.⁸

He was imitating Athanasius of Alexandria (c296-373 AD):

In former times every place was full of the fraud of oracles, and the utterances of those at Delphi and Dodona and in Boeotia and Lycia and Libya and Egypt and those of the Kabiri and the Pythoness were considered marvellous by the minds of men. But now since Christ has been proclaimed everywhere, their madness too has ceased, and there is no one left among them to give oracles at all. Then, too, demons used to deceive men's minds by taking up their abode in springs or rivers or trees or stones and imposing upon simple people by their frauds. But now, since the Divine appearing of the Word, all this fantasy has ceased, for by the sign of the cross, if a man will but use it, he drives out their deceits.⁹

humans as to be a useful model, and also sufficiently unlike to have no moral or legal rights against her 'owners', speaks very poorly of the researchers' imagination and sound sense.

⁸ Sprat [2005] p. 340.

⁹ Athanasius, *On the Incarnation* (written c. 318 AD), ch. 8, para. 47.

There were at least two ways for this insight or revelation to develop. On the first, all such frauds and fancies were dispelled so that we could begin to see and listen to the *real* Logos. On the second – and (sadly) the more influential in mainstream scientific circles – was to take a nominalist and incoherently materialist metaphysics utterly for granted.¹⁰ The world of our experience, we could partly agree with Plotinus, is – in a way – a painted corpse¹¹: the forms and beauties that we encounter are our very own creations.

Postmodern nominalism and scientific materialism, rejecting the idea of universals, hold that ‘corn’, ‘goat’, and ‘human’, for instance, are merely terms possessing no existential value or metaphysical significance of their own, signifiers (with no signified) meaning only whatever we wish them to mean.¹²

The same must be true, on this account, of mathematical terms and the concepts of high physics.¹³ The underlying reality has, of itself, no human meaning, no simple boundary lines, no beauties and no defects: or at least inevitable variations are not intrinsically defective. Oddly, hardly any apologist for scientific materialism has grasped or answered the problem, that we have then no grounds for identifying or extrapolating any observed pattern in nature or the mind, and no right to be surprised by any sudden alteration, for example in biological lines.¹⁴

Aristotle himself did indeed insist on teleological explanation: we have eyes to see with, and hands to handle things. He also argued that human beings, just as such, had a characteristic *ergon*: something that only human beings did, and needed to do well in order to live well. That *ergon* was deliberate action: the problem for all human beings who have considered what is best for them to do is – exactly – to determine what is best to do, and do it. Human life is “*praktike tis tou logou ekhontos*”, a life of doing things for reasons, and to live it well we need appropriate ethical and intellectual virtues. *To anthropinon agathan psukhes energeia ginetai kat'areten, ei de pleious hai aretai, kata ten aristen kai teleiotaten*: the human good turns

¹⁰ See: Nesteruk [2003].

¹¹ Plotinus *Ennead* II.4 [12].5, 18; see also V.1 [10].2: I discuss Plotinus’s metaphors at greater length in Clark [2016].

¹² Martin [2015] p. 35.

¹³ Though practising mathematicians usually manage to maintain a proper Platonism. “The Platonistic view is the only one tenable. Thereby I mean the view that mathematics describes a non-sensual reality, which exists independently of the human mind and is only perceived, and probably perceived very incompletely, by the human mind”: Gödel [1951/1995] p. 322–323.

¹⁴ See Chambers [1844/1969], after Babbage [1837/1967] p. 34 ff. Chambers’ pre-Darwinian evolutionary theory was mocked – by T.H. Huxley amongst others – as rejecting proper scientific, inductive, method. The same charge was later made against Darwin.

out to be an activity of soul in accordance with virtue, and – if there are many virtues – then according to the best and most complete.¹⁵ What in detail that amounts to can be put aside. Here it is important to note that though only human beings have this option, not all human beings – all our conspecifics – have it. Some – as Aristotle is notorious for claiming – are incapable of making their own decisions, or acting for any other motive than immediate desire or fear. “Natural slaves” may either be like the imagined savages of northern lands, who live entirely by impulse, or the imagined, subservient subjects of the eastern empire, who do not dare to rebel.¹⁶ Others of our conspecifics – chiefly women – can reach their own decisions about what to do, but cannot be expected so to overrule their emotional impulse as to stick by a good decision.¹⁷ Manual labourers, living hand to mouth, may rarely have the luxury to cultivate good ethical and intellectual habits.¹⁸ And even the children of more favoured classes must learn good habits – by mere obedience – before they can live at their own command. The human species, in short, is not as uniform as we might suppose, and Aristotle’s advice, inevitably, is offered mainly to adult, freeborn males not ground down by banausic labour.

Our species is not uniform – and neither are other species. Aristotle’s account of reproduction does not involve the repeated imposition of a single species-form. Rather it is – at least among familiar animals – the father’s form that works on blood provided by the mother: it is the failure to reproduce that form exactly that results in female offspring, or in other familiar variations. One mare, he says, was named Honest Lady because her foals resembled the father so closely.¹⁹ So Aristotle’s biological theories are closer to the Darwinian than is usually expected. A more openly Platonic theory, supposing that there are Eternal Forms active in the world, lay at the root of Richard Owen’s preferred evolutionary theory.²⁰ By Owen’s account, resemblances within a species – or a wider taxon – were the effect of an archetype (Human, Horse or Beech Tree and the like). Darwin deliberately replaced archetypes (which he considered metaphysical) by ancestors. Human beings resemble each other so closely because we all descended from a fairly re-

¹⁵ Aristotle, *Nicomachean Ethics* 1.1098a16-18; see Clark [1975/1983].

¹⁶ See Clark [1985, 2003].

¹⁷ See Clark [1982].

¹⁸ “No one can practise excellence who is living the life of a mechanic or labourer,” Aristotle, *Politics* 3.1278a21.

¹⁹ *Ibidem*, 2.1262a.

²⁰ Hunterian professor of comparative anatomy from 1836 to 1856, and superintendent of the natural history collections at the British Museum from 1856 to 1883: see Owen [1848]; see also Hull [1973].

cent common ancestor (as pre-Darwinian theologians had also said²¹). It seems indeed that our species has endured bottlenecks, in which the human population was reduced to no more than a few thousand. Other species, even other primate species, are much less homogeneous. The record (incorporating fossils, genes and folklore) also suggests that there were other hominid species, with languages and traditions of their own²² – and likely enough to have been human in the sense preferred by Aristotle.

Aristotelian biology, in brief, was not essentialist: his taxonomies were devised for expository convenience, in that all or most of any particular taxon could be briefly described before advancing into detail. Individual creatures had their qualities because their parents did: even though the mother ‘only’ provided the stuff that was to be moulded by the father’s *pneuma*, that matter had its own influence on the outcome. Aristotelian mothers were not simply incubators, as popular Greek opinion supposed. Outcomes could be variable, and Aristotle also identified some common animals as – relatively – “deformed.”²³ It is even possible – as I suggested in *Aristotle’s Man* – that he had in mind a chronological or historical version of the descent of an original humanity described by Plato’s *Timaeus*.²⁴ The relative deformity of different biological kinds is as necessary for the ongoing life of the whole as the relative deformity of women: “deformity” establishes, and has always already established (over infinite generations), the whole array of mutually dependent life-forms. That array – perhaps – is conscious of itself, and capable of deliberate change, only within our species. Only – but not all – human beings are able to view the world objectively and consider how best to change it (if we can).

²¹ See Almond [2006] p. 168 f. Thus, for example, in 1625, the philosopher Nathanael Carpenter in his *Geography* maintained that Moses’ motivation, in writing his genealogical lists was so that all people would understand themselves to be descended from the same original “then which there is no greater meanes to conciliate and ioynne mens affections for mutuall amitie and conversation.” (Nathanael Carpenter, *Geography Delineated Forth in Two Books*, Oxford 1625, 2:207). Similarly, in 1656, the year of La Peyrère’s *Men before Adam*, John White remarked in his commentary on Genesis that the reason for God’s having created only one couple was to unite all men in love to one another so that “we cannot shut up our bowels of compassion from any man, of what Nation or Kindred soever he be.” (John White, *A Commentary upon the Three First Chapters of Genesis*, London 1656, 1:111). Some forty years later, Richard Kidder, Bishop of Bath and Wells, suggested that the origin of all people was from one man to ensure that claims of racial superiority could not arise, that “men might not boast and vaunt of their extraction and original [...] and that they might think themselves under an obligation to love and assist each other as proceeding from the same original and common parent” (Richard Kidder, *A Commentary on the Five Books of Moses*, London 1694, 1:6).

²² See Clark [2009].

²³ Lobsters, for example, are “deformed,” and use their claws for other than “their natural purpose”: *De Partibus Animalium* 684a35f: see further: Clark [1975/1983] p. 28–32; Balme [1980].

²⁴ Aristotle, *De Partibus Animalium* 686a25f; Plato, *Timaeus* 91b.

Convergence and Transformation

The post-Darwinian and Aristotelian worlds are different, but not because Aristotelian species were fixed. In the older synthesis the world is always being repopulated, from a surviving remnant, and very similar forms and functions are realized in each age. Darwinians suppose instead that there was a real beginning to all terrestrial life (though how it happened is still, at least, contentious), and that all living lines since then have travelled a more or less random course through possibility. The variations in each line are random, and which variation chances to have the reproductive edge on any particular occasion no less so. It is possible to modify this picture slightly, without entirely subverting the original Darwinian insight: maybe every genome retains successful adaptations of the past, ready to be reinvented on some environmental cue; maybe there are a limited number of possibly successful types, so that different lines converge – so that, for example, there are marsupial wolves as well as placental ones. Maybe there might even have been humans of a kind, evolved from dinosaurs in the past or in an alternate history.²⁵ Nonetheless, there is at least a bias in the post-Darwinian view against an Aristotelian (even if the latter is not exactly Aristotle's). The lines that make up a species – a set of interbreeding populations – may be changeable, and there may be no absolute division between one species and another, whether in Darwinian or in Aristotelian theory. But an Aristotelian lineage is animated, as it were, by *pneuma*, working with maternal matter to try out the possibilities of each embodied paternal form. The notion that we could breed human stock as we have also bred domestic animals and plants is easily available (and proposed by Plato as a way of securing incorruptible and clever rulers), but we cannot – on the ancient terms – expect to disengage reproduction and copulation. There is no separable seed, to be preserved or altered. In the post-Darwinian universe, there is a literal human seed, which can in principle be altered.

This strengthens Chesterton's account:

The sub-conscious popular instinct against Darwinism was [...] that when once one begins to think of man as a shifting and alterable thing, it is always easy for the strong and crafty to twist him into new shapes for all kinds of unnatural purposes. The popular instinct sees in such developments the possibility of backs bowed and hunch-backed for their burden, or limbs twisted for their task. It has a very well-

²⁵ See: Morris [1999], writing against Gould [2000].

-grounded guess that whatever is done swiftly and systematically will mostly be done by a successful class and almost solely in their interests.²⁶

On the older view – owing more perhaps to Abrahamic than to Aristotelian theory – humanity was something sacred, not to be bred or reared or engineered as if it were only “animal”. On the older view, reproduction must be tied to intimate copulation: all human beings must be born “by nature”, not manufactured to a prior blueprint. Even animals should not be bred promiscuously, though we seem much less concerned for hybridizing plants. On the newer, post-Darwinian, view, human beings are simply a transient primate species, the only current hominids: the species is bound to change over many generations, and its pathways are defined by a manipulable genome. Our descendants may be of many distinct species, perhaps incorporating genes from many other lines, whether by natural accident or by experimental genetic engineering.²⁷ The engineers may – or may not – wish that some descendant lines be ‘human’ in the sense we now prefer: comprising individual persons who must act for reasons. They may as easily require that most lines are mostly ‘slavish’, in the sense that Aristotle proposed: call them ‘domestic’ humans.

The vision is usually reckoned dystopian, whether by Aldous Huxley (*Brave New World*) or Cordwainer Smith (*The Rediscovery of Man*). Sometimes it is presented with a more challenging or even utopian twist, as by H.G. Wells (*First Men in the Moon*), Larry Niven and J.E. Pournelle (*The Mote in God’s Eye*), Frank Herbert (*Hellstrom’s Hive*) or C.J. Cherryh (*Cyteen*). An apparently obsolete idea of human “sacredness” mostly hovers in the background of all such visions. The alternative, caste-engineered society, may be modelled openly on the life of eusocial insects, or on merely manufactured, “robot” intelligence. Post-Darwinian theorists seem content: for E.O. Wilson, “morality has no other demonstrable ultimate function” than “to keep human genetic material intact.”²⁸ So that the more variant species we – or our masters – engineer for different social and physical environments, the better – if preserving elements specifically of *our* genome are really what we either want or should.

On the one hand, there seems – on post-Darwinian pretexts – no good reason not to engineer our progeny (or more probably the progeny of the poor) to

²⁶ Chesterton [1910] p. 259.

²⁷ Genetic information is routinely transmitted, even amongst eukaryotes like ourselves, “horizontally” by bacterial and viral infection, as well as “vertically” by reproduction.

²⁸ Wilson [1978] p. 167; for my usual criticisms of this silly claim see Clark [2000c, 2001]. These essays, mildly modified, are reprinted in Clark [2011] p. 115–138, 158–172.

suit 'our' needs (or rather the needs and wishes of those who control the engineers). On the other, there seems to be no reasonable ground to insist upon preferring specifically the human genome, the particular genes that are preserved in our homogeneous line. If there are advantages in incorporating 'animal' genes in the new, manufactured people, there may equally be advantages in adding 'human' genes to other lines. Yet these proposals are routinely mocked or disparaged, with a view to keeping the 'human' lineage pure. What reasoning lies behind this? After all, it seems entirely possible that the hominid line and the pongid continued occasional intercourse even after they had begun to split apart. And other hominid species – including *Neanderthalensis* – probably contributed to the *Sapiens* stock. Our present homogeneity depends on past catastrophe: the chance survival of particular human beings in East Africa before they began their trek around the coast to Asia, Europe and Australia. The lines that have been lost to us – by chance – were probably as 'fit' or as 'deserving' as our own ancestors, just as the final generations of the dinosaurs had no distinguishable faults. As Adam Sedgwick remarked, in criticism of what he took to be the moral of Darwinian talk of "survival of the fittest": "the reptilian fauna of the Mesozoic period is the grandest and highest that ever lived."²⁹ Why then preserve 'our own' – the proportionally very few that are found so far only within our lineage – rather than any others?

The answer, probably, must either be superstitious or metaphysical: 'superstitious' if it is merely a relic of an older view, a habit of anthropocentric thought that makes no sense at all in a post-Darwinian cosmos, any more than our unreasoned faith in the capacity of a chance-evolved primate to uncover fundamental truths about reality³⁰; 'metaphysical' if it rests upon some concept of a sacred form, forgotten in the modern synthesis but nonetheless of moment.

Conclusions

So what can be said on behalf of a moderately robust humanism? The genetic engineers for whom a genome is more like a loose-leaf folder than a coherent volume, an accumulation of fairly effective strategies for reproduction, have ended – as Chesterton prophesied – by denying the existence of Humanity as well as God. As Freeman Dyson has proposed: "We are moving rapidly into the post-Darwinian era, when species will no longer exist, and the evolution of life will

²⁹ As reported by Owen [1860], reprinted in Hull [1983] p. 197.

³⁰ See: Tegmark [2014] p. 5: "Darwin's theory makes the testable prediction that whenever we use technology to glimpse reality beyond the human scale, our evolved intuition should break down." Cf. Wigner [1960].

again be communal.”³¹ Genes will be shared around as easily amongst us as they are amongst bacteria (for which species-distinctions have always been moot). Dyson, it seems to me, is too optimistic in his description of the early years:

In the post-Darwinian era, biotechnology will be domesticated. There will be do-it-yourself kits for gardeners, who will use gene transfer to breed new varieties of roses and orchids. Also, biotech games for children, played with real eggs and seeds rather than with images on a screen. Genetic engineering, once it gets into the hands of the general public, will give us an explosion of biodiversity. Designing genomes will be a new art form, as creative as painting or sculpture. Few of the new creations will be masterpieces, but all will bring joy to their creators and diversity to our fauna and flora.

The current ‘human’ population is only a phase or fragment. This may perhaps lead some of us to worry about the other tribes of Earth, recalling that we are all related to each other.³² It may as easily lead many of us to treat vulnerable human beings as badly as we have always treated ‘animals’, with the added twist that manipulating or experimenting upon our conspecifics will be of greater value – to their owners. According to the Mosaic story, God made us ‘images’ of Himself rather as earthly rulers may set up statues of themselves to make their presence known, and insist that everyone pay something like the same respect to the statues as they would to the king’s own person.³³ Human beings, that is, are to be reckoned sacred, and any disrespect or injury to them is taken as disrespect or injury to God. Jesus of Nazareth drew the further inference that even neglecting people is an offence against God, not merely actively oppressing them.³⁴

This notion was never wholly supported by the Aristotelian, pagan, synthesis, which rather favoured adult, freeborn males (and especially those who reckoned themselves ‘wise’). But at least those pagans had some hope that our conspecifics were, for the most part, capable of conversation and peaceful negotiation, and that the whole cosmos where we found ourselves was oriented towards the Good, despite occasional, expectable, disasters. The Golden Age would come round again, and creatures almost exactly like us would be born and prosper. The modern synthesis gives us no reason to believe, either in our capacities for learning or compassion, or in any happy future for the world.

³¹ Dyson [2005]. Dyson takes his cue from Woese [2004].

³² See: Richard Dawkins, “Gaps in the Mind,” [in:] Cavalieri & Singer [1993] p. 81–87.

³³ Frymer-Kensky [2006].

³⁴ *Matthew* 25.31-46

Are there adequate resources in Aristotelian theory to prepare an alternative future? Aristotle did not himself endorse any notion of ‘fixed species’, but he might still be opposed to any radical reworking of the endlessly recurring ‘natural’ norms by which sublunary life, he thought, might imitate the heavens’ eternity. He accepted without much argument that “plants were for the sake of animals, and animals for humans,”³⁵ but still reckoned that there was something beautiful, and worthy of our attention, in even the least likeable of living things.³⁶ The best and most complete of virtues, the one to exercise when all else failed, was *sophia*, wisdom³⁷ – which is to say, so later theorists made clear, the intellectual enjoyment of real beauty.

All our toil and trouble is for this, not to be left without a share in the best of visions. [...] A man has not failed if he fails to win beauty of colours or bodies, or power or office or kingship even, but if he fails to win this and only this.³⁸

He thought that there were “natural slaves”, bound in fact to be slavish whatever their social standing, but did not therefore endorse cruelty or neglect, and certainly not the manufacture of such slaves. “Being once reproached for giving alms to a bad man, he rejoined, ‘It was the man and not his character that I pitied’.”³⁹ And though he found fault with some versions of the Platonic Theory of Forms, he did not deny the being and the power of such universals.

Aristotle, in fact, was more of a Platonist than modern scholars have usually acknowledged.⁴⁰ The Forms which some Platonists apparently thought were wholly separate from the phenomenal and physical world were rather to be found at work in both these latter. The stuff on which they worked was not always fully amenable to their influence – but for that very reason it was also available to other forms, each with their own powers and beauties. Seals may indeed be “deformed or damaged quadrupeds,”⁴¹ but no one can deny their beauty as the very creatures that they are. ‘Defects’, so called, are not exactly mistakes, but the very way in which the spread of living creatures is maintained. It is difficult, now, not to see –

³⁵ Aristotle, *Politics* 1.1256b15.

³⁶ Aristotle, *De Partibus Animalium* 1.645a17-23.

³⁷ Aristotle, *Nicomachean Ethics* 10.1177a12-1178a8; see Clark [1993].

³⁸ Plotinus, *Ennead* I.6 [1].7, 34f.

³⁹ Diogenes Laertius [1989] 4.17: alternatively, he gave to ‘*to anthropinon*’ not ‘*ho anthropos*’, to ‘the human’, not ‘the fellow’.

⁴⁰ See: Gerson [2005].

⁴¹ Aristotle, *De Partibus Animalium* 2.657a24.

say – a Down’s Syndrome child as ‘odd’, but if s/he were conceived not as a mainstream human but as a fine example of another, kindlier kind,⁴² we should be no more squeamish than about any other non-conspecific. In other words, we retain, at least at an emotional level, some notion of species as norm-driven, and are affected by those who stray too far from ours. Recognizing them as judged and guided by a different norm, we may see their actual excellence, and their importance for future species development. The efforts of twentieth century eugenicists to cull what they considered failures were not simply wicked (and usually illegal), but profoundly ignorant: we need diversity of goals and patterns.⁴³ On the other hand, there are still real goals and patterns – and the free-for-all that Freeman Dyson seemingly endorses would be as catastrophic in its effects as breeding domestic animals, even by more traditional means, to emphasise particular, marketable, traits. Identifying right patterns is a task for those with an eye to real beauty.

Without some such conception of ‘real beauty’, ‘real norms’, in biology as well as morals, we may at last be reduced – those, that is, who were previously subject to the Aristotelian destiny, of having to make our own minds up and act on reasons that we find compelling – to living instead by impulse, “like the northern barbarians” or in strict obedience to the dictates of our masters, like the eastern.⁴⁴ We may, in short, end up as slaves ourselves. Remembering instead the many forms of beauty we may perhaps hope both to understand the world and to endure it. Whether it is open to us to improve the world is more contentious: little

⁴² See König [1961] and Clark [2000a] p. 41–57.

⁴³ See Black [2003] for a detailed account of the ‘experts’, who imprisoned, sterilized and castrated people they deemed ‘unfit’, in defiance of law, the American Constitution and ordinary decency. It should be remembered that the book at the centre of the Scopes Trial (1925), Hunter [1914/2012] contains such passages as this (p. 263): “Parasitism and its Cost to Society. -- Hundreds of families such as those described above exist today, spreading disease, immorality, and crime to all parts of this country. The cost to society of such families is very severe. Just as certain animals or plants become parasitic on other plants or animals, these families have become parasitic on society. They not only do harm to others by corrupting, stealing, or spreading disease, but they are actually protected and cared for by the state out of public money. Largely for them the poorhouse and the asylum exist. They take from society, but they give nothing in return. They are true parasites. The Remedy. -- If such people were lower animals, we would probably kill them off to prevent them from spreading. Humanity will not allow this, but we do have the remedy of separating the sexes in asylums or other places and in various ways preventing intermarriage and the possibilities of perpetuating such a low and degenerate race. Remedies of this sort have been tried successfully in Europe and are now meeting with some success in this country” (my emphasis – S.R.L.C.). See Larson [1998] for an account of the political and economic context of the trial; Gould [1999] gives a good understanding of William Jennings Bryan’s humanitarian motives (Bryan being Darrow’s adversary in the trial). The Broadway play (1955) broadly based on this episode, *Inherit the Wind*, and the later film (directed by Stanley Kramer, 1960) are thoroughly misleading.

⁴⁴ Aristotle, *Politics* 3.1285a18f; see also 7.1327b23f.

things can be dealt with, but people with larger ambitions should, maybe, recall their limits.

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