

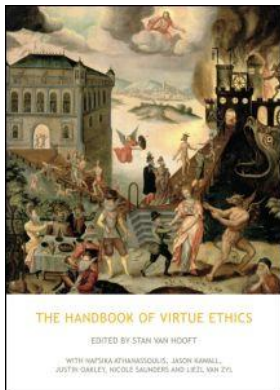
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## **The Handbook of Virtue Ethics**

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### **Naturalistic virtue ethics and the new biology**

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## Naturalistic virtue ethics and the new biology

Richard Hamilton

### INTRODUCTION: A VERY PECULIAR NATURALISM

Spinoza ([1677] 1996: 68) famously criticized those who, when writing about human affairs, “treat not of natural things, which follow the common laws of Nature, but of things which are outside Nature”. If a naturalist is someone who endorses this criticism, most Anglo-American philosophers are naturalists. Ethics, however, represents something of an anomaly, for here the dominant tone is, if not supernaturalist, then decidedly non-naturalistic. The selfsame considerations which prompt philosophers to be naturalistic realists in their metaphysics seem to urge anti-realism in ethics. The dominant image has us projecting our values onto a disenchanted landscape.

Most of the key figures in the now familiar story of the renaissance of virtue ethics would consider themselves naturalists, and yet their naturalism is very different from that found in metaphysics, epistemology or the philosophy of mind. Aside from debates about character, there is little serious engagement with empirical science. My aim in this chapter is to evaluate the peculiar form of naturalism that is found in virtue ethics rather than in ethical naturalism more broadly. I will argue that while there are good reasons to distance virtue ethics from scientistic naturalism, we should be wary of “conceptual purism”: the idea that philosophy should have no truck with empirical matters. While such a position does insulate virtue ethics from some fairly devastating criticisms emanating from the biological sciences, it concedes too much to scientistic naturalism in its conception of what an engagement with the sciences must look like. I will defend an alternative naturalism which is liberal and pluralistic, and stands in a dialogic relationship with other disciplines.<sup>1</sup>

Philippa Foot is a towering figure within naturalistic virtue ethics. In a seminal article, John McDowell (1998a: 167) endorses her rejection of “supernaturalist rationalism and the various forms of subjectivism”. We cannot, however, fully appreciate Foot’s position unless we rid ourselves of the desire to found ethics on the facts of disenchanted nature. Only bad metaphysics support such “bald naturalism”. Any plausible ethical naturalism

requires an account which can rebut subjectivism and supernaturalist rationalism without recourse to scientism.

### EVOLUTIONARY ETHICS

One form of scientific, bald naturalism is evolutionary ethics, which would derive ethical conclusions from our evolutionary history. It would preclude certain forms of life as biologically unsustainable and endorse others as more conducive to survival, and therefore more fitting for us. Its most notorious incarnation was Herbert Spencer's Social Darwinism. In this form it was radically inegalitarian and emphasized concepts such as the "struggle for existence" and "survival of the fittest", supplying questionable justification for rapacious capitalism and for eugenics. The horrors of Nazism should have sounded its death knell but it has remained a leitmotif of secular conservative thought. The main objection to such an evolutionary ethics seems to be its pernicious moral consequences. Of course, much would turn on whether it involved a correct reading of the evolutionary record. But let us suppose it did. Surely the fact that we dislike its consequences cannot provide robust philosophical grounds for opposing it.

Let us therefore consider the different form of evolutionary ethics foreshadowed by Thomas Huxley, one that sees nature as a source of evil inclinations to be overcome. Richard Dawkins (1976) ends *The Selfish Gene* with a paean to culture's ability to tame our genes. Dawkins's descendants, the evolutionary psychologists, produced a raft of books which detailed our propensity for rape, genocide, infanticide and capitalism, urging us to understand and vanquish our dark evolved psychology. The more sophisticated Peter Singer has encouraged us to understand how our evolutionary history forms a formidable but surmountable barrier to the impartial benevolence which is the proper goal of ethics (P. Singer 1981, 2000).

The trouble with this view of nature "red in tooth and claw" was identified by Pyotr Kropotkin, who suggests that Huxley's grim prospect is as value-laden as Rousseau's naïve depiction of a pastoral idyll, and that neither "can be accepted as an impartial interpretation of nature" (Kropotkin 2006). Nature contains both struggle and competition and, in Kropotkin's eminently sensible view, ecological conditions determine which predominates. Kropotkin highlights the deeper philosophical problem which confronts ethical naturalism: nature is neither wholly good nor wholly bad; it is varied. Thus, if someone were to propose that we take nature as our guide, it would be entirely appropriate to ask: which nature?

The traditional appeal to nature came with substantial cosmological baggage. The Stoics had their rational universe while Christians and Muslims their benevolent deity. In his essay, "On Nature", J. S. Mill (1904) rejects these possibilities. He notes an equivocation in the concept of "nature". Its first sense is as follows: "a collective name for all facts, actual and possible; or (to speak more accurately) a name for the mode, partly known to us and partly unknown, in which all things take place". Such an appeal derives power from self-evidence: if "nature" is simply everything that happens, then we cannot defy nature. There is, however, another sense of "nature" at play in ethical and political discussion, and that is the one which contrasts the natural with human art. As Mill notes, human endeavour remains within the broader realm of nature under the first definition. And he adds, "nearly

all the things which men are hanged or imprisoned for doing to one another are nature's every-day performances". By contrast, many goods of human life – health, sanitation, safe food – are artificial. There can thus be no easy identification between the natural and the good. Any ethical evaluation requiring a contrast between the natural and the artificial cannot also claim to be naturalistic in that other, more pregnant sense of the term. Mill's argument poses a formidable challenge to any form of ethical naturalism.

More recently, the philosopher of biology Philip Kitcher has joined the fray. His criticisms apply to any form of naturalist realism. He takes objectivism about the good life to be any theory which refuses to equate it with desire-satisfaction. He distinguishes between "bare" and "explanatory" objectivists. A bare objectivist asserts that certain items are necessary human goods and, when confronted with dissent, very quickly encounters an argumentative impasse. An explanatory objectivist offers arguments to justify her chosen goods. The explanatory objectivist, however, faces a further obstacle, which Kitcher dubs "The Reductive Challenge". To avoid bare objectivism's argumentative impasse, the explanatory objectivist must offer an explanation of why (say) friendship is a good, which does not rely upon a prior evaluative commitment. So, it would not do to assert that friendship is good because it promotes loyalty and solidarity, since we have no independent criterion for determining whether they are good. Thus "in order to improve on bare objectivism, explanatory objectivism must apparently pick out some property whose ascription can be made in a value-free fashion, seeing this as a criterion for human well being" (Kitcher 1999: 60). A biological theory of human nature, according to which human life requires certain essential goods, might answer the Reductive Challenge. Here, however, biology becomes problematic. Roughly stated, there are no good Darwinian candidates for the human biological essence. Darwinism introduces a fundamental shift away from defining species in terms of a cluster of essential phenotypic properties, expressed during normal development, to a view of species as lineages unified only by common descent. Slight changes in environmental conditions can significantly modify phenotypic expression. Moreover and most crucially, a trait which can be disadvantageous in one environment can be advantageous in another. Elliott Sober illustrates this with the example of a stud bull whose body is distorted by hormones but which is massively successful in reproductive terms. He concludes that, from an evolutionary perspective, health is no more natural than disease (Sober 1980).

If ethical naturalism attempts to base ethical norms on a supposedly objective biological account of human nature, the prospects look bleak. The Darwinian conception of normality is simply too thin. The theory of evolution by natural selection both requires and explains the dazzling diversity that we encounter in the natural world. Once we include cultural diversity, it is hard to avoid Bernard Williams's rather pessimistic conclusion that we are "to some degree a mess, and that the rapid and immense development of symbolic and cultural capacities has left humans as beings for which no form of life is likely to prove entirely satisfactory, either individually or socially" (B. Williams 1995b: 109). If nature is diverse, any attempt to derive ethical principles from it risks illicitly importing evaluative premises. Ethical naturalism in anything like the traditional sense is dead. Let us therefore consider how well Foot's naturalism responds to this challenge.

### THE IMPORTANCE OF CULTURE

Since biological criteria will not do the necessary work, we need to look elsewhere. Here is a possible candidate: although we acknowledge diversity, that diversity is only relevant to the extent that it exists within a common form of life. Diversity is ethically significant precisely because it is diversity within a shared framework. Since we are a species that is partly defined by our capacity to acquire a culture, it is clear that no account based purely on our “first nature” will be adequate. The starting point then is not biology, but recognizably human patterns of acting and responding, some of which we share with other animals but others of which are distinctly the product of our ability to act in the light of reasons. This ability is largely shaped by our acquisition of what has been called a “second nature”.

The boundaries of our common form of life are conceptual; they concern what we can intelligibly describe as “human”. Were we to encounter a being which was biologically identical to us but which did not act and respond in characteristically human ways, we would not consider it human. This logical insight is Foot’s starting point. Contrary to prevailing orthodoxy, she suggests that ethical evaluation is nothing mysterious but utterly ordinary. The evaluation of human action occurs in the same logical tone of voice as our evaluation of any living thing. We evaluate a person’s character by reference to the human form of life, in the same way that we would evaluate a wolf or a cactus with reference to their forms of life. Our question is whether each is a good example of its kind. Herein lies the affinity between our ethical evaluations of human beings and those of organic life more generally. But herein also lie the significant differences, because in making our evaluation of human action we make reference to characteristically human forms of life, all of which are marked by a capacity for practical reason. A person who routinely makes wise choices is doing well while someone who routinely reasons badly is defective as a human being.

Even survival is “more complex for human beings than for animals; even for the animals closest to us”. A person in despair may decide to struggle on in the “hope that something may yet turn out well in the future” (Foot 2001: 29). Compare this to a horse desperately struggling to get out of a flooded ditch. Both can broadly be understood as pursuing biological survival. Nevertheless, the possibility of reflection alters even the most basic biological capacities. Foot’s stress on the distinctiveness of human practical reason enables her to counter some of the criticisms that have been levelled against her work. She is not attempting to rest virtue ethics on some set of bald biological facts; for, in a species with conceptual capacities, there are no such facts that bear on ethics. As John Hacker-Wright has argued, it is therefore misleading to view Foot as some sort of failed socio-biologist. Her repeated invocation of terms such as “function”, “species” and “survival and reproduction” are not intended to track standard biological uses, for Foot uses these terms for “entirely different theoretical goals” (Hacker-Wright 2009: 316). To fully understand her position, we must appreciate the concept of “natural normativity” which she employs. Her purpose is not to give a quasi-empirical account of any particular organism but to articulate a “logical theory ... of statements about living things” (*ibid.*).

Foot is not attempting to create an alternative empirical basis for virtue ethics, since her theory is not empirical at all. But is she not perhaps open to a different kind of objection? In quarantining ethics so much from the empirical, does she not rely upon an implausible conceptual purism, according to which concepts are sempiternal? This view owes more to Plato and the early Wittgenstein than it does to his later counterpart and to Aristotle,

both of whom she claims as influences. A central insight of the later Wittgenstein is that concepts gain their sense through their role in our lives. Thus concepts do not simply defer to scientific progress. The dynamic is much more complex and subtle. Nevertheless, only dogmatism asserts that they are entirely quarantined from science.

Just as philosophers redefine vernacular concepts at their peril, it would be reckless to offer terminological revisions of established scientific concepts such as “species” and “function”. To avoid this problem, it would be better to dispense entirely with such biological sounding terms and focus instead on the central Aristotelian claim that there is a distinctively human form of life, distinguishable by a set of characteristic activities, most notably the exercise of practical reason. The proper exercise of these capacities is required for a fully human life. Since the question of whether or not we are properly exercising our practical reason is not entirely ours to decide but requires public criteria, we defeat subjectivism about value. Moreover, as practical reason has a necessary but complex relationship to our organic existence, we also defeat supernaturalist rationalism. The question that remains is whether Foot is surreptitiously importing evaluative premises into her account of what it means to be human. It depends.

Kitcher would have the objectivist silence all disagreement. By contrast, virtue ethicists have more modest goals. Our aim is reasonable consensus. It is not the task of an ethical theory to answer the moral sceptic. Virtue only speaks to someone immersed within an ethical life. In Foot’s terms, only someone with a “proper upbringing” can see that virtue supplies reasons for acting. But clearly, a “proper upbringing” means *inter alia* that a person is appropriately responsive to moral demands. Someone, for instance, who saw a person’s suffering not as furnishing reasons to assist them (or at least show sympathy) but as an opportunity to exploit or humiliate them has been badly brought up. Such a person would either be psychologically damaged, and thus fall outside the domain of moral evaluation, or else would be defective in respect to practical reason. They would therefore be defective *qua* human. Such a claim is unlikely to satisfy a critic who seeks to build ethics from the bottom up, but as McDowell (1998a: 187) insists, just like the epistemologists in Neurath’s boat, we only ever construct our ethical thought on the high seas. Our conception of what it means to be human already includes the capacity to acquire a second nature which enables one to discern moral reasons for acting. Kitcher asks us to step outside the human form of life and pass judgement on it externally. Lurking behind the scenes here are the temptations of a shallow empiricism which would require us to found ethics on a metaphysical picture of a world without humanity.

However, the very possibility of imaginatively standing at one remove from our nature is afforded by our prior acquisition of a second nature. Just because ethics is rooted in practical reason, it must be genuinely alive to alternative possibilities. For that reason, the danger of sceptical doubt is omnipresent. McDowell illustrates this thought with a parable of a wolf that acquires reason and in doing so ceases to recognize the natural requirement that wolves should hunt collectively. He can acknowledge the Aristotelian categorical: “wolves hunt in packs”. Indeed, it is a necessary condition if he is to free-load; yet he cannot see its force, when applied to himself. This, roughly speaking, is our predicament: in acquiring conceptual capacities, we open ourselves to sceptical challenges. The natural requirements of human life cannot acquire an overriding authority over a rational will. For, “[r]eason does not just open our eyes to our nature; it also enables and even obliges us to step back from it, in a way that puts its bearing on our practical problems into question”

(*ibid.*: 172). In a similar way, Christine Korsgaard (1996: 15) asks us to imagine someone sheltering a fugitive from the Nazis at great personal risk. Learning that her instinct to do so is bound up with preservation of the species may lead her to judge that she has no good reason to preserve a species capable of producing Nazis.

Any theory which *per impossibile* founded ethics on biological facts would threaten the critical reasoning which lies at the core of ethical thought. Virtue ethics' great attraction is that it has never pretended to supply a decision procedure which would substitute for the hard work of deliberating *in situ* about moral problems. We commence deliberation with an inchoate sense of what virtue requires and refine this through reflection. Someone who had no appreciation, for instance, that a human being's peculiar vulnerability to humiliation provided *pro tanto* reasons not to humiliate her would be incapable of participating in moral deliberation.

Foot's ethical naturalism does not involve making up biology as she goes along, in a desperate attempt to evade the Darwinian challenge. Nor is she disregarding the important criticisms of ethical naturalism which philosophers and biologists have offered over the last century. On the contrary, Foot grants that the traditional forms of ethical naturalism are untenable. Her starting point is that there is no position outside the human world we can adopt from which to evaluate it, no objective facts of the matter which will settle moral disputes to the satisfaction of the moral sceptic.

Several questions remain. First, is Footian naturalism truly naturalistic? With such a heavy emphasis placed upon the capacity for practical reason and, by implication, our distance from other animals, is it not vulnerable to Spinoza's criticism? Second, eudaimonistic forms of virtue ethics can provide powerful resources to criticize any particular culture. As Foot and McDowell place such heavy emphasis upon our immersion in a particular form of life, does this not lead to moral (or even political) conservatism? Third, even if we reject the need to found ethics in the natural sciences, is it really necessary to quarantine ethical thought from any contact with the empirical? After all, virtue ethicists have rightly criticized other normative theories for their implausible assumptions about human nature. Conceptual purism imperils the very worldliness which makes Aristotle's ethical thought so attractive.

### THE PERILS OF CONCEPTUAL PURISM

Does Footian naturalism concede too much to bald naturalism? The dangers of a shallow empiricism loom large and as the discussion of evolutionary ethics should have shown, we must be wary of any attempt to found ethics on biology. Nevertheless, the grounds for suspicion do not lie with biology *per se* but with that conception of a foundation, one which pretends to appeal to a perspective not already immersed in ethical life. If we rid ourselves of this temptation, we would also rid ourselves of the accompanying anxieties. A sensible engagement with empirical disciplines can enrich rather than threaten the critical space which ethics requires.

Some would disagree. John Hacker-Wright suggests that,

The view of human nature that Foot wants to put at the foundation of her ethical naturalism is a normatively-laden interpretation of human nature that is not

identical with a biological account of the species *Homo sapiens*. Hence, for the purposes of working out our views on ethics, *we do not need to engage in empirical studies of human nature*. (Hacker-Wright 2009: 319, emphasis added)

Hacker-Wright's interpretation highlights some of the problems associated with a position I have referred to above as "conceptual purism". Consider his claim that "we do not need to engage in empirical studies of human nature". If he means that philosophers should not attempt to conduct empirical investigations for which we are poorly equipped, he is surely right. Nevertheless, there is a huge difference between engaging in empirical studies and engaging with them.

The rest of his article evinces a deeper suspicion towards the empirical, one which he apparently finds support for in Foot. Unlike those who engage in empirical studies, Foot offers us an interpretative view of human beings, which we learn is "not identical with a biological account of *Homo Sapiens*". Our first response should be that there is no such thing as "a" biological account of this, or any other species. As there are numerous ways of doing taxonomy, the adoption of any particular one involves taking an interpretative stance (Richards 2010).<sup>2</sup> However, Hacker-Wright's point might be that the account of human nature Foot offers is normatively laden and therefore cannot be biological, as if these were mutually exclusive. Naturalistic virtue ethics, however, proceeds from a qualified rejection of the fact-value dichotomy. There is no way for adult human beings to step outside normativity; it impinges upon us from every direction.

As Foot insists, the very possibility of identifying something as a living being requires us to adopt a normative stance towards it. One fundamental distinction between animate and inanimate objects is that living beings undergo characteristic patterns of development and decay. Once we come to see something as developing, we necessarily adopt a normative stance. Development entails timeliness: it is not sufficient for certain events to occur, they must occur at the right time and in the right order, and in this light we talk of something developing well, or of development going awry. It often takes initiation into a scientific practice to recognize development, and what counts as development for a botanist may not overlap with the assessment of the horticulturist. This may raise suspicion that talk of development is merely a projection of human interests onto the natural world. But without a concept of development all that we would have is measurable change over time, and we lose the most distinctive feature of the living world. On this impoverished view, the growth of an organism would be indistinguishable from the growth of a volcano.

It makes sense, however, to regard certain characteristic forms of growth as development in ways which are unintelligible when applied to inanimate objects. Consider a cancerous cell. From a certain perspective, in its rapid division, it is developing well. But for the whole organism that development may be disastrous. Similarly, a foetus can technically be considered as a parasite and is sometimes recognized as such by the mother's body. Yet, when viewed in terms of the characteristic good of reproduction, the rapid growth and differentiation of cells inside the foetus counts as development. This issue closely parallels debates about health (Hamilton 2010). No candidate for a value-free conception of health and disease is adequate. The attempt to root conceptions of health and disease in an evolutionary conception of functions fails for the sorts of reasons Elliot Sober spells out: at the level of generality required by evolutionary explanation, the distinction between health and disease becomes occluded.



Evolutionary theory is the framework which unifies all particular biological explanations, but it is not a substitute for them. Although Ernst Mayr's famous distinction between ultimate (phylogenetic or evolutionary) and proximate (ontogenetic or lifecycle) explanations can be clarifying, there is a danger of succumbing to what Lickliter and Berry (1990) call the "phylogeny fallacy". This is the fallacy of supposing, *inter alia*, that natural selection can entirely explain development. The idea that evolution creates developmental trajectories rather than selecting between them has been surprisingly resilient. It emerged most recently in evolutionary psychology's questionable claim that evolution has created a uniform psychological architecture, a claim devastatingly refuted by David Buller (2005).

A revolution is currently occurring in biology which is captured by the subtitle of a recent book: *Taking Development Seriously* (Scott Robert 2004). In place of the view that evolution encodes developmental pathways in the gene, we now take seriously the fact that biological form emerges in the course of development. Simply put, development does not just happen. In Susan Oyama's words,

What comes of the chemical, mechanical, and social-psychological resources an organism inherits depends on the organism and its relations with the rest of the world. It makes its own present and prepares its future, never out of whole cloth, always with the means at hand, but often with the possibility of putting them together in novel ways. (Quoted in *ibid.*: 78)

"All well and good," one might respond, "but what relevance does this have for ethics?" My response owes as much to Spinoza as to Aristotle. When we talk about the process of ethical formation, the acquisition of a second nature, we are not talking about a separate process from normal human biological development. It is the same process, albeit under a different description. As Alasdair MacIntyre argues,

No account of the good, rules and virtues that are definitive of our moral life can be adequate that does not explain – or at least point us towards an explanation – how that form of life is possible for beings who are biologically constituted as we are, by providing us with an account of our development towards and into that form of life. That development has as its starting point our initial animal condition. (MacIntyre 1999: x)

Annette Baier makes a similar set of observations the context of profound reflections upon human vulnerability. Bemoaning the ways in which many (mostly male) moral philosophers have treated personhood as a given, she reminds us that "persons are born of earlier persons and learn to be persons from other persons" (Baier 1991: 5). Baier stresses the ways in which personhood is a fragile accomplishment, sustained only in an atmosphere of mutual trust and constantly imperilled by the brute biological facts of human frailty.

The danger of focusing on the end product at the expense of the process is that we lose the ability to attend to the various ways in which we are responsible for each other's development. We end up with a flat all-or-nothing account of second nature. Either one has successfully acquired a second nature or one has not. This leads to a number of problems. First, it is hard to see the critical work that the concept does, other than the minimalist

task of rebutting those philosophers who believe that we must silence the moral sceptic. Second, one of the great attractions of ethical naturalism is that it provides us with a set of critical resources to examine cases where ethical formation goes awry. What matters is not simply acquiring a second nature but acquiring the right kind of second nature, one which makes us both appropriately responsive to the demands of virtue but also able to maintain the right critical distance from the mores of our culture. If the acquisition of a second nature amounted to nothing more than imbibing a tradition along with our mother's milk, then the bar is set pretty low. The psychopath and Hume's sensible knave seem fully capable of acquiring traditions. But if the emphasis is placed upon the capacity for critical reflection, then it is hard to see what work the concept of "natural" is doing.

Another vital aspect of Aristotelian thought – its rich cognitivist account of the emotions – enables us to see where the psychopath and sensible knave go wrong. On this account, emotions are not simply visceral grunts, they are "upheavals of thought" which "involve judgements about important things, judgement in which, appraising an external object as salient for our own well-being, we acknowledge our own neediness and incompleteness before parts of the world we do not fully control" (Nussbaum 2001: 19). Here again biology, particularly developmental biology, fills in important details in the story. Despite the bravado of many (mostly male) philosophers, we are a spectacularly needy species. For reasons related to our complex natural history, we are born displaying "secondary altriciality": that is, our gestation continues outside the womb for at least six months. We lack bladder and bowel control and only really develop it around eighteen months, much later than comparable animals. Even speech – that much vaunted capacity – is acquired haltingly and we only reach fluency around seven years of age, although acquiring the vocabulary necessary to participate in most societies takes much longer.

We learn to respond to others' needs by being brought up in an environment where our needs are reliably met. Through this we develop the physiological and intellectual capacity for arousal regulation, and ultimately the self-control which makes acting ethically possible. Children who do not receive appropriate care fail to develop this capacity. But it is a mistake to see the process of care as entirely top-down. The evidence is now overwhelming that children play a key role in initiating and maintaining care – they are not merely its passive recipients (Shanker 2008, 2009, 2010). What takes place is a dance between child and caregiver with each taking turns at leading. As we move towards adulthood that dance becomes an ever broadening circle.

In other words, acting ethically is a complex skill and like all skills, it is learnt first by imitation and overt instruction, then by trial and error, until we arrive at a stage where we are competent or even proficient and able to reflect upon our skill and perhaps teach others. The fact that we must learn to act well provides an intuitive basis for feeling that it cannot be natural. Like Huxley, many believe that we act ethically only by mastering our pre-existing natures. The new biological thinking, which above all challenges the nature–nurture dichotomy, offers us a way of thinking beyond Huxley.

To illustrate this, Tim Ingold (1995: 187) asks the puzzling question: why could Cro-Magnon man not ride a bicycle? The standard response, reflecting generations of philosophical and anthropological orthodoxy, is that the explanation is primarily cultural. Cro-Magnon man was just like us biologically and had he been born today he might have ridden a bicycle. This is why it makes sense to describe Cro-Magnon as an "anatomically modern human", whereas it would sound odd to talk about an "anatomically modern

sheep". Ingold asks us to ponder the contrast between walking, which is considered entirely biological, and cycling, which is a culturally acquired skill. Both presuppose bipedalism, which is a feature of our natural history. But walking is supposed to emerge organically in the course of our development, while cycling must be learnt.

Nevertheless, the contrast is false. A child only learns to walk in a cultural context, given the routine provision of reliable care, such that every non-impaired child who survives infancy learns to walk. She also learns always and everywhere in a cultural context which prescribes and proscribes certain ways of walking so that, as Marcel Mauss (1973) says, there really is no "natural way of walking" for an adult person. This has profound implications for our musculature and bone structure. The way we walk changes our bodies, as does cycling. Indeed, any palaeontologist attempting to determine the age and gender of human bones must make certain assumptions about their characteristic life activities.

Ingold is keen also to challenge the complacent "interactionist" picture in which both biology and culture are considered "important". This view is expressed by E. O. Wilson's slogan of "genes holding culture on a leash", although it is often expressed the other way around. But what any such formulation misses is that genes do not interact with culture at all, since at most genes interact with their immediate bio-chemical environment. Indeed, genes do not replicate themselves and to suggest otherwise is profoundly misleading (Lewontin 2000). They are replicated in the course of a series of immensely complex bio-chemical processes, the staggering complexity of which we are only starting to appreciate. The gene-centric view of evolution was a useful heuristic device for navigating some of those complexities, but it has now outlived its usefulness.

It is striking that when moral philosophers reject a biological contribution to understanding ethics, they typically reject one which identifies the biological with the genetic. Were this account correct, it would be possible, at least in principle, to find human beings who are biologically identical with us but who lacked a second nature. Such a being would be mitochondrially indistinct but would not act and respond in characteristically human ways. They would be ethically and culturally defective perhaps, but not biologically. The new biology shows us what is wrong with such a view. We pass on more than DNA to our offspring. In Oyama's words (1985: 43), "what is passed on, or made available, in reproduction, is quite literally a genome and a segment of the world". A human being develops biologically only in an environment created largely by the activities of other human beings, an environment which is simultaneously physical, bio-chemical, socio-cultural and moral. Our specific problematic is, to coin a phrase, the "ontogeny of ethical form". How is it that, despite all the various vicissitudes we confront, intra-generationally we can stably reproduce certain ethically desirable character traits such as courage, justice or temperance? Posing it in these terms will strike terror into the hearts of moral philosophers. By treating it as a biological problem, am I not reducing our hard-won ethical gains to mere biology?

The simple response is that there is no such thing as "mere" biology. The virtues are not encoded in the genes, ready to spring forth when appropriately triggered. On the contrary, they emerge like all other characteristics, in the complex and fragile process of development. We are all responsible (individually and collectively) for bringing them into being. Which virtues predominate will depend to some extent upon the circumstances we confront, but this makes them no more a matter of arbitrary preference than our desire to see our children well fed, well educated and free from disease. The new biology offers us

a way to situate all the distinctive features of human ethical life within the natural world. Such a prospect might let Spinoza sleep soundly in his grave.

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#### NOTES

1. Two recent collections outline such a liberal naturalism: de Caro & McArthur (2004, 2010).
2. My own preference is for the promiscuous or pluralist realism defended for instance by John Dupré (1996: 441–4).