

Modern Science, Philosophical Naturalism, and a De-Trivializing of Human Nature

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INTRODUCTION

Are humans exceptional in the animal kingdom? Both ‘yes’ and ‘no’ may be correct answers to this question. According to ordinary intuitions, we are special: (apparently) no other living organism uses smartphones or holds academic conferences. Our life seems to be by far the most complicated and sophisticated of all of the lives lived on Earth. Yet, according to the Darwinian theory of evolution through natural selection and random genetic variation, it is not differences of kind, but of degree, that exist between humans and other living creatures. Humans are a biological species with genetic inheritance that behaves within the confines of physical laws: we are no more special than, say, bats or elephants are in this sense.

In many contemporary societies, priority is assigned to scientific evidence rather than intuition. Empirical findings in natural-scientific disciplines increasingly lend credence to the theory that humans lie on a continuum with other animals, thereby making it seem arrogant, idiosyncratic, or extremely religious to believe that we, by virtue of human nature, differ in kind from non-human animals. Instead of identifying ourselves with human animals or the species *Homo sapiens*, philosophers often employ alternative terms such as “persons,” “subjects,” “selves,” “individuals,” “agents,” and “rational animals” to highlight the essential nature of humanity that cannot be explained in natural-scientific terms, which press us to see ourselves as only genetic and biological species.¹ In the eyes of many contemporary natural scientists and their followers, however, this “cannot” does not indicate a logical contradiction but simply a sign of the empirical limitation of the achievements of past generations. With the continuing development of research methods and techniques, practicing scientists in such fields as evolutionary biology, genetics, behavioral genetics, cognitive psychology, neuroscience, genomics,

ethology, and epigenetics may claim that they pay heed to not only “human animality” but also “animal humanity” without any question-begging argument that human nature clearly differentiates humans from other living species.

In sum, we now live in an age when an explanatory burden falls on *philosophers*. The Wittgenstein scholar Meredith Williams pithily describes the present context:

The problem of how we can be both animals living in a causal world and agents acting through norms, principles, and rules in that same world persists. Many have understood this as a clash between science and our ordinary ways of talking. For many, this clash has been resolved in favour of the scientific image . . .²

Two issues are represented here. The first concerns how we should appreciate that human beings do not live in a *simply* natural environment. The second concerns whether philosophers are really left with no substantial role to play in matters of human nature, in the face of the ever-growing advancement of modern science.

I recognize, of course, that human beings can be appropriate objects of scientific and empirical investigation and that their findings should be taken seriously. However, I do not think the natural sciences have “all the answers,” for the extraordinary development of modern science and its understanding of nature have understandably but unduly disjoined the domain of *the human* from the domain of *the natural*, making the concept of human nature extremely hard to understand, as if it were an oxymoron. In this article, therefore, I will, in a philosophical manner, explore and illuminate a conceptual space between what the science writer Kenan Malik terms “scientific naturalism,” which denies “the exceptional qualities of being human,” and “human exceptionalism,” which celebrates them.³

In what follows, I first look to the modern natural-scientific conception of nature and, accordingly, of human nature and to the tremendous impact of this conception on the world of education. I next turn to how “scientific naturalism” has (not) been received in the worlds of philosophy and philosophy of education. Then, by introducing the Aristotelian concept of second nature, which John McDowell vivifies, I aim to dissolve the tension between the human and the natural. This article ends by noting one of the educational

implications of locating the concept of nature itself within a larger framework.

HUMANITY, ANIMALITY, AND MODERN SCIENCE

Exploration of the nature of humanity is a desideratum for education, for if we do not have a proper understanding of human nature, the means by which to (best) educate our children could not even take a clear shape. And yet, the task of explaining human beings both as those who are part of an evolutionary tree and as those who have stepped outside it (in the sense that we adapt our inborn abilities through cultural practices) appears to be intractable. After all, there seems to be something paradoxical about this “dual” character of human beings. This serious problem of our having both natural and unnatural being at one and the same time has come along with the advent of modern science and its understanding of nature. Malik tersely characterizes the plight:

The very development of science expresses this paradox of being human, because in order to understand nature objectively, it is necessary to make a distinction between nature which is the object being studied and humanity which is the subject doing the studying.⁴

Many current natural-scientific disciplines present empirical findings that explain, or at least seem to, that human beings, like other living beings, belong to the order of nature. And, that the species *Homo sapiens* is part of nature is often interpreted as the thesis that there is no such thing as a human nature that totally distinguishes our species from all other living species.

As the last sentence quoted from Williams correctly reveals, appealing to natural-scientific findings is a currently dominant attempt to resolve the tension of our dual character, and if such appeals are counted as sufficient for that purpose, the lines of thought fall under what Malik calls “scientific naturalism.” Along these lines, for example, the experimental psychologist Steven Pinker emphasizes:

Primatologists have shown that our hairy relatives are ... outfitted with *many complex faculties that used to*

be considered uniquely human, including concepts, a spatial sense, tool use, jealousy, parental love, reciprocity, peacemaking, and differences between the sexes.⁵

The ever-increasing empirical findings on, say, the cognitive capacities of non-human animals have surely put into question the idea that there is such a thing as human nature in the sense of the real “essence” of human beings that makes us what we are in a way completely different from other animals. It is crucial here to recognize that this seeming lack of human nature is by no means equivalent to the so-called “blank slate” view of the human mind, the idea that has long underlain the Enlightenment project of education. Rather, the view that what has counted as “the uniquely human” is actually *not* unique to humans threatens to undermine the blank slate view. We need to undo the complex knot that ties together theories about human nature and education.

The blank slate view is usually associated with John Locke’s famous reference to “white paper”⁶ in the then-prevalent (epistemological) dispute between rationalism and empiricism on the innate/acquired distinction, but it has often been taken, in the context of the nature versus nurture debate, as the doctrine that the mind is a *tabula rasa* or blank slate, that is, a blank sheet of paper waiting to be written on by experience. The core idea of this view that nurture outweighs nature in human development has made the role and importance of education salient, and with its moral and political connotations, the idea has been so widely received that, as Pinker puts it, “the Blank Slate has become the secular religion of modern intellectual life.”⁷

What Pinker challenges, with the current natural-scientific evidence available, especially that from the sciences of mind, brain, genes, and evolution, is this received theory of human nature—“namely, that it barely exists.”⁸ He aims to show that the human mind is *not* a blank slate and to convince the reader to properly acknowledge “human nature.” It is not wise, I think, to dismiss this line of challenge as reactionary or irrelevant to the human practice of education by labeling it genetic or biological “determinism” as in the cases of, say, Konrad Lorenz’s and Edward Wilson’s biology-based analyses of human nature. I am not advocating the claims of these natural scientists,

but I think they pose a pressing issue for philosophers (of education) who may not be scientists, as the issue is concerned with the human-nature divide and thereby with how (best) to educate our children in a “posthumanist” age.

Few philosophers (of education) would deny the *results* of good natural-scientific investigations *per se*; it is no longer disputed therefore that our mind is not a blank slate. What is in dispute, however, is how we should best understand the fact that “nature” plays a greater role in human development than ever assumed. In other words, despite a general agreement that the nature-nurture dualism is unhelpful, there is no consensus about how the outdated dualism is to be overcome. The primatologist Frans de Waal nicely depicts our circumstance:

In the last couple of years, the pendulum has swung away from nurture (or environmental effects) back to nature, leaving behind a number of bewildered social scientists who thought the issue had been settled. The current fascination with human biology, however, has created the opposite problem of people so obsessed with genetics that they ignore the other half of the question.⁹

In the field of education, for example, interested biologists, educational researchers, and cognitive and developmental scientists launched in 2007 what was to become a successful journal called *Mind, Brain, and Education*, which has earned a relatively high “impact factor.” I want to stress again that we must take seriously such natural-scientific findings themselves, but at the same time we need to closely examine the ways in which and the extent to which their supposed insights and implications are drawn before committing ourselves to “science-worship,” precisely because to place “natural” facts and phenomena in a proper context is not as straightforward as it seems (to the worshippers), especially when human nature is on the table.

As implied, the impasse of this issue is plain to see, for “nature” in the modern (natural-scientific) sense excludes values, reasons, purposes, meanings—i.e., normative phenomena. As Malik describes:

Whereas the pre-scientific world viewed the universe as full of purpose and desire, the scientific revolution

transformed nature into an inert, mindless entity. At the heart of the scientific methodology is its view of nature, and of natural organisms, as machines ...¹⁰

Once the modern natural sciences rule out our higher-order behavior such as knowing, thinking, and judging as *norm*-laden, it follows then that lower-level sciences that study our bodily (e.g., physico-chemical) components as *natural* objects have flourished, and as a result, the features of human beings that are the focus of those sciences have come to be seen as the *de facto* elements that explain and determine what humans are. Many such “natural objects” in our bodies are of a type shared with other animals, especially with other great apes. Accordingly, the marvelous achievements of natural science in investigating the “animality” of human and non-human organisms (such as physical properties, nervous systems, and brain regions) show, or so it seems, that what has been considered “uniquely human” is in fact not unique to humans, even if the difference of degree may be great.

In many contemporary societies, thus, the standard intellectual view is that a large number of other animals also have, for instance, culture, the capacity to reason, and a sense of morality. This view does not strike me as implausible, but I think a more delicate analysis is needed to reach the conclusion. The assumption at work in the standard (natural-scientific) view is either 1) that if human and non-human animals have the same bodily components or lower-order attributes, then both human and non-human beings are supposed to have the same, or at least similar, higher-order behavior and characteristics; or 2) that normative elements that are to be excluded from the realm of “nature” are presupposed because of our habitual anthropomorphizing other animals and their behaviors.

Although Malik notes that “[t]he tension between scientific naturalism and human exceptionalism remains unresolved,”¹¹ I think we can properly dissolve this tension by extracting a way of *not* setting up a false dichotomy between the natural and the human. Before sketching that way, however, it would help to take a brief look at how “scientific naturalism” has (not) been received in the philosophical community generally and in the philosophy of education community more specifically. This is because how philosophers have received “scientific naturalism” has to do with addressing the possible

role of philosophy and also because such reception is exactly a watershed that has divided “general philosophy” (in the analytic tradition) and philosophy of education (despite its origin in the so-called “analytic philosophy of education”) in some Anglophone countries for the last few decades.

PHILOSOPHICAL NATURALISM

The modern view of nature and of natural organisms has developed in tandem with the progress of the natural sciences, as a result of which exploring the relationship between the human and the natural has long been on the agenda for modern *philosophy* (typically in the form of the relationship between the human subject and the natural object). Connectedly, in confrontation with the development of the natural sciences, philosophers have faced the challenge of (re)considering the relationship between philosophical inquiry and scientific investigation. The issue of what philosophy can and need not learn from the natural sciences centers on the issue of whether and how (philosophical) naturalism¹² is plausible.

Mario de Caro and David Macarthur have edited two important collections of essays on naturalism,¹³ and their introductions to these volumes are helpful guides to the issue in question. They criticize “scientific naturalism,” which enjoys the privilege as “the current orthodoxy” (in Anglophone analytic philosophy), and propose an alternative view of naturalism they call “Liberal Naturalism” (a version of which we will see in the next section). There are, according to de Caro and Macarthur, two core themes of scientific naturalism by which to distinguish variants of naturalism: ontological and methodological (which also entails epistemological). They formulate these themes in the following way:

Ontological doctrine of Scientific Naturalism. The world consists of nothing but the entities to which successful scientific explanations commit us.

Methodological doctrine of Scientific Naturalism. Scientific inquiry is, in principle, our only genuine source of knowledge or understanding. All other alleged forms of knowledge (e.g., a priori knowledge) or understanding are either illegitimate

or are reducible in principle to scientific knowledge.¹⁴

Accepting the ontological thesis is tantamount to committing oneself to a “scientism” that alleges “not only that modern (or post-seventeenth-century) natural science provides *a* true picture of nature but, more contentiously, that it is the *only* true picture.”¹⁵ In this picture, the conception of nature is nothing more than that of the natural sciences. Accepting the methodological thesis brings us to “a reconception of the traditional relation between philosophy and science according to which philosophical inquiry is conceived as continuous with science.”¹⁶ The conventional aspiration of modern philosophers to establish a philosophical discipline of epistemology (in pursuit of *a priori* norms), by which to ground and evaluate empirical claims against the available evidence, is doomed to fail. If the methodological doctrine is right, in other words, the (Cartesian and Kantian) dream of “First Philosophy” is to be discarded.¹⁷

No philosopher has played a more decisive role than W. V. Quine in the growth and flourishing of scientific naturalism in analytic philosophy, so much so that de Caro and Macarthur write as follows: “Often scientific naturalists give the impression of thinking that *philosophy began with Quine*, and that to read earlier texts is to leave philosophy behind for the study of the history of ideas.”¹⁸ Quine’s project to “naturalize” epistemology emphasizes the continuity of philosophy with science, and his thinking is well captured in the following remarks:

... my position is a naturalistic one; I see philosophy not as an *a priori* propaedeutic or groundwork for science, but as continuous with science. I see philosophy and science as in the same boat—a boat which, to revert to Neurath’s figure as I so often do, we can rebuild only at sea while staying afloat in it. There is no external vantage point, *no first philosophy*. All scientific findings, all *scientific conjectures* that are at present plausible, are therefore in my view as welcome for use in philosophy as elsewhere.¹⁹

I applaud Quine’s ambition to set out a non-foundational account of knowledge and understanding by an appeal to the parable of Neurath’s boat. But I do not see his “naturalistic” position as convincing for two related reasons.

First, it is simply hard to resist the temptation to say that Quine's naturalized epistemology is no more than the project to reverse the positions between something foundational (*explanans*) and something to be explained (*explanandum*). While the aspiration of First Philosophy was to base science on (epistemology-oriented) philosophy, the aim of Quine's naturalized epistemology appears to construe epistemological issues by means of scientific research. Quine's preference for science over philosophy is obviously at odds with the image of Neurath's boat that implies *mutual*, not one-way, commitments to each other. Second, "scientific conjectures" are not as scientific or naturalistic as Quine seems to assume, for something normative is always already smuggled into such conjectures. This is the point that the late Hilary Putnam was at pains to make in his later years, which is to say: "Science depends on what is not fully scientific at every point."²⁰ The point is echoed in one of his very last pieces:

It is true that the notion of a reason, for example, is not the subject matter of a special science, but ... that notion is presupposed by all science as well as by fields like history and politics and criticism (including philosophical criticism) that are not sciences, because in all of them one has to decide what there is *reason* to consider and even what there is reason to test. (Notions like 'plausibility', 'simplicity', and 'elegance' figure in the *reasons* scientists give for testing certain theories at all. They are not scientific notions, but the activity of science presupposes a *reasonable* command of them.)²¹

Quine's "naturalized epistemology" and "full-blown scientific naturalism" that many contemporary analytic philosophers embrace stumble because the attempt to explain our higher-order behavior by means of natural-scientific findings of our lower-order components misses the point that the studies of the latter already presuppose the former (something normative).

In contrast to the unparalleled influence of Quine's naturalism in the analytic tradition, the philosophy of education community has paid scant attention to his work.²² It is not surprising that for many philosophers of education, the scientific naturalist discourse that Harvey Siegel calls "non-normative naturalism"²³

sits uncomfortably with educational theories. After all, education is a self-evidently normative enterprise. Nonetheless, given that the education community in general is now under the sway of the (natural) scientific ethos, along with the buzz about “evidence-based education,” philosophers of education shall have something to say about how the philosophical study of education could contribute to our better grasp of what education is and does. I thus try to show that the stalemate of First Philosophy need not be conceived as signing up for scientific naturalism.

THE ARISTOTELIAN NOTION OF SECOND NATURE

We have difficulty finding the proper ontology for human nature. The source of difficulty lies, to borrow Kate Soper’s words, in “a dualistic conception of ourselves as creatures who are both ‘cultural’ (i.e. ‘non-natural’) and yet subject to ‘natural’ functions and possessed of ‘purely animal’ properties.”²⁴ To make best sense of our “dual” character, I want to draw attention to the Aristotelian notion of “second nature,” which has been reinvigorated mainly through the work of the contemporary philosopher John McDowell.

What McDowell resists by invoking the notion of second nature is the modern temptation to restrict nature to the realm of law or natural-scientific understanding. He claims:

[W]hat the modern scientific revolution yielded was clarity about the realm of law, and that is not the same as clarity *about nature*. [Wilfrid] Sellars’s contrast is between the space of reasons and the realm of law, and it need not imply that the space of reasons is alien to the natural.²⁵

McDowell considers our higher-order behavior such as thinking and knowing to be neither supernatural beyond our reach nor completely integrated into the realm of law or natural-scientific understanding. Instead, he stresses:

Thinking and knowing are part of our way of being animals. Thus the fact that we are knowers and thinkers does not reveal us as strangely bifurcated, with a foothold in the animal

kingdom—surely part of nature—and a mysterious separate involvement in an extranatural realm of rational connections.²⁶

On McDowell's view, the workings of the mind, such as thinking and knowing, are a *natural* part of the way we human beings live. It is notable, however, that for the human individual, the naturalness is not innately equipped; it is *acquired* though "initiation into conceptual capacities, which include responsiveness to other rational demands besides those of ethics."²⁷ It is in this regard that the naturalness of, for instance, thinking and knowing in our lives is *second-natural*. Yet, this ordinal number should never be taken as a sign of inferiority as to its naturalness, for, as McDowell puts it, "[s]uch initiation is a *normal* part of what it is for a human being to come to maturity."²⁸ It is not a simply natural environment but the space of reasons that we inhabit with phenomena of second nature, and there is nothing wrong with casting this fact as *natural*.

With the notion of second nature, I think McDowell revives a sort of "specialness" of human nature that the modern view of nature has *trivialized*. He writes:

At least the old Cartesian thinking registers, in its confused way, the intuition that thought and talk about the mental are *special*. The modern version avoids immaterialism and the pineal-gland mystery by taking as its subject matter something that is *not special* at all, but just a more or less ordinary part of nature.²⁹

What McDowell aims to do is maintain a *sui generis* character of the human but does not stop doing full justice to our *naturalness*. Noteworthy here is that McDowell's line of thinking is not offensive to non-human animals because other animals also have their second nature: "the idea of second nature fits any propensities of animals that are not already possessed at birth ..."³⁰

CONCLUSION

The idea of second nature reveals a way that doesn't lapse into either "scientific naturalism" or "human exceptionalism" (of the problematic sort) as it does not create a tension between the human and the natural. The moral to draw from this

idea is that in the field of education, in both practice and research, where normative elements cannot be eliminated, we do not need to start with the first-natural that is in fact permeated by the second-natural. We should not be afraid to start with a sensitivity toward the second-natural phenomena with which we lead our lives.

1 In this article, I often use the term “human beings” as something relatively, though not absolutely, neutral.

2 Meredith Williams, “Normative Naturalism,” *International Journal of Philosophical Studies* 18, no. 3 (2010): 355-375.

3 Kenan Malik, “What Science Can and Cannot Tell Us about Human Nature,” in *Human Nature: Fact and Fiction*, eds. Robin Headlam Wells and Johnjoe McFadden (London: Continuum, 2006), 164-183.

4 Kenan Malik, “Science and the Human Animal,” in *What Scientists Think*, ed. Jeremy Stangroom (London: Routledge, 2005), 51-65.

5 Steven Pinker, *The Blank Slate: The Modern Denial of Human Nature* (New York: Penguin, 2002), 55 (emphasis added, note deleted).

6 John Locke, *An Essay Concerning Human Understanding*, abridged and ed. Kenneth P. Winkler (Indianapolis: Hackett Publishing Company, [1689] 1996), 33.

7 Pinker, *The Blank Slate*, 3.

8 *Ibid.*, 2.

9 Frans de Waal, *The Ape and the Sushi Master: Cultural Reflections by a Primatologist* (New York: Basic Books, 2001), 7.

10 Malik, “What Science Can and Cannot Tell Us about Human Nature,” 165.

11 *Ibid.*, 180.

12 I here employ the term “philosophical naturalism” to cover the range of “naturalization” projects in philosophy, including “scientific naturalism” that is the primary focus of this article.

13 Mario de Caro and David Macarthur, eds., *Naturalism in Question* (Cambridge, MA: Harvard University Press, 2004), and Mario de Caro and David Macarthur, eds., *Naturalism and Normativity* (New York: Columbia University Press, 2010).

- 14 Mario de Caro and David Macarthur, "Introduction: Science, Naturalism, and the Problem of Normativity," in *Naturalism and Normativity* (New York: Columbia University Press, 2010), 1-19 (emphasis in original).
- 15 Mario de Caro and David Macarthur, "Introduction: The Nature of Naturalism," in *Naturalism in Question* (Cambridge, MA: Harvard University Press, 2004), 1-17 (emphasis in original, note deleted).
- 16 De Caro and Macarthur, "Introduction: The Nature of Naturalism," 3.
- 17 Although the proponents of these two theses are not coextensive, advocating the methodological doctrine *ipso facto* entails advocating the ontological doctrine. See De Caro and Macarthur, "Introduction: The Nature of Naturalism," 6.
- 18 De Caro and Macarthur, "Introduction: The Nature of Naturalism," 17 (emphasis added).
- 19 W. V. O. Quine, "Natural Kinds," in *Naturalizing Epistemology*, ed. Hilary Kornblith (Cambridge, MA: The MIT Press, 1988), 31-47 (emphasis added).
- 20 Hilary Putnam, "Naturalism, Realism, and Normativity," *Journal of the American Philosophical Association* 1, no. 2 (2015): 312-328.
- 21 *Ibid.*, 326-327 (emphasis in original).
- 22 For example, in contemporary philosophy of education, "Rorty and Derrida are much more likely to be discussed than Goodman, Quine, or Davidson." See Andrew Davis and Kevin Williams, "Epistemology and Curriculum," in *The Blackwell Guide to the Philosophy of Education*, eds. Nigel Blake, Paul Smeyers, Richard Smith, and Paul Standish (Oxford: Blackwell, 2003), 253-270.
- 23 Harvey Siegel, "Naturalism and the Abandonment of Normativity," in *The Philosophy of Psychology*, eds. William O'Donohue and Richard F. Kitchener (London: Sage Publications Ltd, 1996), 4-18.
- 24 Kate Soper, *What is Nature? Culture, Politics and the non-Human* (Oxford: Blackwell, 1995), 81.
- 25 John McDowell, "Naturalism in the Philosophy of Mind," in *Naturalism in Question*, eds. Mario de Caro and David Macarthur (Cambridge, MA: Harvard University Press, 2004), 91-105 (emphasis in original).
- 26 *Ibid.*, 94.
- 27 John McDowell, *Mind and World* (Cambridge, MA: Harvard University Press, [1994] 1996), 84. McDowell generalizes the point Aristotle made about the formation of ethical character.

28 Ibid. (emphasis added). This is part of the reason the discovery in the animal sciences that non-human animals, for example, use tools and show mathematical abilities does not deny human beings the status of being “special,” for such higher-order “intelligence” is not *normally* displayed by non-human animals unless it is “a consequence of intensive human training” (to use Soper’s expression). See Soper, *What is Nature?*, 52.

29 McDowell, “Naturalism in the Philosophy of Mind,” 99 (emphasis added).

30 John McDowell, “Responses,” in *John McDowell: Experience, Norm, and Nature*, ed. Jakob Lindgaard (Malden, MA: Blackwell, 2008), 200-267.