



# “Removed from Nature”

## The Modern Idea of Human Exceptionality

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**Abstract** In the context of current concerns within the environmental humanities to challenge the idea that humans are somehow *irreducible* to nature, this article takes up the much-neglected history of the idea of human exceptionality itself. According to now familiar accounts, metaphysical assumptions about the unique status of the human are considered to have persisted—including to the present day—*despite* evolutionary contentions that the human should be understood as a purely physical being. Such, largely Christian and Cartesian, metaphysical notions of a human soul or mind doubtlessly endure. But in this article we consider the—largely ignored, yet now arguably more prevalent—idea that humans are exceptional because of their physicality. Here, then, we outline the emergence of the scientific claim that a uniquely human condition of nature transcendence is owed not to some immaterial quality of mind or soul, but rather to the distinctiveness of human anatomy. It was, we will argue, the body—and, above all, the head—which provided the basis of a modern attempt to establish that humans were creatures of a categorically different order from all other animals. More precisely, it was as human cultural differences were correlated with variations in the size and shape of the head that the human body, in its upright stature, came to provide an explicitly materialist—and, as we shall see, potently ethnocentric—foundation for the claim that human beings are exceptional. The modern idea of human exceptionality is thus shown to be based in large part on a scientifically dubious, and culturally specific, argument about the nature-transcendent quality of beings that walk upright. This is a particular form of humanist discourse that often forgets its own contingencies and instabilities, as well as its comprehensively violent inheritances.

**Keywords** humanism, posthumanism, intelligence, comparative anatomy, materialism, ethnocentrism, colonialism

### Historicizing Humanism: The Idea of the “More-than-Animal” Human

In the context of comprehensive efforts within the environmental humanities to overcome the legacy of a narrow, humanist conception of culture as something elevated above the natural world, this article takes up the largely overlooked history of the idea

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that humans are *more than merely human animals*. Given the urgency of our current ecological situation, we interrogate the still curiously pervasive assumption in Western cultural traditions that humans are in some sense irreducible to nature. This is the idea that, as the philosopher Simon Glendinning puts it, “Man is only man insofar as he is essentially *more than a human animal*?”<sup>1</sup>

Countering the idea that humans occupy a separate and privileged place among other beings has of course been the central aim of a now well-established posthumanist agenda: an agenda inspired above all, perhaps, by Bruno Latour;<sup>2</sup> and one that is now evident across a range of theoretically related areas, including for example, actor network theory, naturecultures, and, by now, not so “new materialism.” Work in these areas has drawn on numerous disciplinary and interdisciplinary fields of enquiry. The evidence of ethologists regarding the capacities of nonhuman animals for tool use, language, reason, digital dexterity, and other traits once considered exceptional to the human, is often a starting point in countering the perpetual differentiation of culture from the realm of animal kind. Relatedly, an ever burgeoning field of animal studies has restored a sense of agency and singularity to the life and minds of animals themselves, and their various forms of interrelation with humans across time periods and cultures. Multispecies ethnographies that inscribe “other-than-human” animals as cultured beings have also gained traction. Meantime, more object-oriented theorists and semiotic materialists mobilize, analytically, the materiality of nonhuman entities, from implants to viruses to insects, in a field that puts “things” at the core of its study. More generally, one notes a sustained impulse, since at least Val Plumwood’s 1993 book *Feminism and the Mastery of Nature* through to the likes of Rosi Braidotti’s *The PostHuman*, published in 2013, and well beyond, to disrupt the anthropocentrism of a worldview that centers *human* needs, agencies, and desires. Yet for all this increasingly urgent concern about humanity’s place on a planet under threat of ecological catastrophe, and even at a time when the familiar Western notion of the human appears to be unravelling, it is surprising to note so little critical, or indeed historical, attention to the problematic and confused idea itself of human distinction from nature.

This article is sympathetic to the ambition of the likes of scholars Gay Hawkins and Emily Potter, who some ten years ago sought to “decentre . . . the thinking human subject.”<sup>3</sup> As above, the effort across the environmental humanities and beyond to elicit the messy entanglements, vitalities, and materialities of human and nonhuman life has continued to be a transformative project for a more inclusive and sustainable world.<sup>4</sup>

1. Glendinning, “From Animal Life to City Life,” 24 (emphasis added).

2. See, for example, Latour, *Politics of Nature*.

3. Hawkins and Potter, “Naturecultures: Introduction,” 37.

4. For indicative examples of key thinkers’ works (beyond Latour, Braidotti, and Plumwood), from a few disciplines, of what is a sufficiently well-established agenda as to engage entire journals such as *Environmental Humanities* and book series such as *Posthumanities*, see Haraway, *When Species Meet*; Wolfe, *What is Post-humanism?*; Bennett, *Vibrant Matter*; and Whatmore, *Hybrid Geographies*.

And our interest here in critically informing that same environmental project via a route—through the pathways of race historiography—should not be characterized as “all too human,” even as it focuses on an iconic site of human differentiation, that of the human head and brain. Indeed, as it turns out, and as we hope to demonstrate, there is productive ontological bridgework to be undertaken across the critical concerns of race “identity politics” and the nonhuman. Here, however, we want to supplement the orthodox historical claim that contemporary ideas about the exceptional status of the human can be traced to a tradition of metaphysical thought emanating from Descartes, and beyond him to Christian doctrine. While of course beliefs in human uniqueness and superiority are variously common today, often circulating as “unthinking” premises, if not always conceits, we question a preoccupation with that particular lineage of humanist thought for overcoming those beliefs in the present day. That is, we wish to query how far the characterization of humanism as, in Jane Bennett’s words, an enduring “fantasy of human uniqueness in the eyes of God,”<sup>5</sup> helps us to comprehend—and to counter—a still-prevalent belief today in human exceptionality.<sup>6</sup>

With the aim of elucidating the very basis of the contemporary humanist discourses outlined later in this article, our focus is the *post*-Cartesian history of the idea that humans are more than merely human animals. As signaled above, we historicize precisely an idea of human distinction that, arguably, no amount of rejection or dismissal by critics as metaphysical belief, vain fantasy, naive myth, or conceited delusion has, as yet, served to fundamentally disturb. Furthermore, we hope to demonstrate that the details of this idea’s variable formulation over time are of far more significance to the environmental humanities (and beyond) than the clarification of their own historical mutation. Certainly, as above, we hope to show they are of more relevance to this field’s core concerns than their “all-too-human” rendering here might at first blush suggest. For, notably, such details can be shown to intersect with a cultural bias—indeed, ethnocentrism—that has shaped not only Western attitudes and conduct to nonhuman

5. Bennett, *Vibrant Matter*, ix.

6. This overly simplistic story about Western metaphysics/religion has been one of the main stories told about human exceptionalism. Yet, here, too, we acknowledge certain complexities. For example, Tim Ingold, in “Epilogue: Towards a Politics of Dwelling,” has considered the way in which Marx and others may have provided one of the most important foundations for this thought through the notion that humans act *on* nature, while all others act *in* nature. Such action, for Marx, was itself a product of the singularly human capacities for cognition and acting outside of mere habit/instinct. Likewise, for Plumwood, the human/nature distinction was part of a much larger set of mutually reinforcing dualisms, interacting with more comprehensive political structures. To quote her, “The idea that human life takes place in a self-enclosed, completely humanized space that is somehow independent of an inessential sphere of nature which exists in a remote space ‘somewhere else’ might be seen as the foundational delusion of the West. A dangerous doctrine, strongly implicated in the environmental crisis, this framework of self-enclosure is the love-child of the old dominant narrative of human mastery and centrality mated with the much younger circumstance of human experience of commodification in the global city.” See Plumwood, “Nature as Agency,” 26.

animals, but also the frameworks through which non-Western, and especially indigenous, cultures have been represented and, more often than not, reviled.<sup>7</sup>

Like Bennett, John Gray, in his book *Straw Dogs*, maintains that the still-dominant “fantasy” that “we are not like other animals” is “a secular religion thrown together from decaying scraps of Christian myth.”<sup>8</sup> The claim that human exceptionality is an essentially theological belief and one that has, as Lynn White argued in his influential paper “The Historical Roots of Our Ecological Crisis,” simply persisted “despite Darwin,” has informed posthumanism more generally.<sup>9</sup> On this reading, the idea of human exceptionality is usually traced back from recent conceptions of culture as a distinct realm of human agency, to Descartes’s identification of the human being’s unique “mental” capacities with an immaterial mind, and then further back still to Christian ideas about the soul. As Erica Fudge has noted, Descartes is usually taken to be “the poster boy for current representations of humanist ideas.”<sup>10</sup> This is insofar as he is understood as having “fused the Christian concept of an eternal soul (the image of God in humanity) with the more secular concept of the rational mind.”<sup>11</sup> So whether it is identified with Christian doctrine or Cartesian dualism, posthumanism has routinely set itself against a conception of the “thinking [human] subject” as, in Diana Coole and Samantha Frost’s words, something “ontologically other than matter.”<sup>12</sup> For example, the “monism” advocated by the editors of *New Materialism: Interviews and Cartographies* is explicitly opposed to “Cartesian dualism.”<sup>13</sup> Similarly, and in its reliance on what he calls an “inescapably theological” idea of mind, the cultural theorist Richie Nimmo rejects a humanist understanding of culture. In a sustained critique, but one that can also leave us with a weary, even defeated, sense of humanism’s inexhaustibility, Nimmo challenges the humanist notion of culture as “Cartesian ‘mind’ collectivized.”<sup>14</sup>

It is, therefore, according to a classical separation of the human, considered as essentially immaterial, from the nonhuman, considered as irremediably material, that humanism itself has often been considered, and contested, as some kind of immaterialism.

7. Anthropologists, perhaps especially, have long since sought to “decolonize” the referential frameworks beneath which indigenous peoples’ epistemic worlds have been muted. See, for example, Wolf, *Europe and the People without History*; Fabian, *Time and the Other*; Viveiros de Castro, “Cosmological Deixis and Amerindian Perspectivism”; and, in the Australian context, Rose, *Reports from a Wild Country* (among her many works) and more recently (also in cultural studies) Neale and Vincent, “Mining, Indigeneity, Alterity.” More generally, in anthropology, Tim Ingold’s “What Is Human Being?” suggests the sense in which indigenous modalities of being and becoming-human are not merely forms of “worlding” to be catalogued as “different,” but—in all their diversity, and as also suggested by the argument of this article—multiply the very referential points of the human’s own narration.

8. Gray, *Straw Dogs*, 31.

9. White, “The Historical Roots of our Ecological Crisis,” 1205.

10. Fudge, “The Animal Face of Early Modern England,” 182.

11. Peterson, *Being Human*, 38. See also Goetz and Taliaferro, *A Brief History of the Soul*, 67.

12. Coole and Frost, “Introducing the New Materialisms,” 8 (emphasis added).

13. Dolphijn and van der Tuin, “Introduction: A New Tradition in Thought,” 86.

14. Nimmo, *Milk, Modernity, and the Making of the Human*, 3 (emphasis added).

Equated with the belief that the human mind (or soul) is something more than just an aspect of our biology, the idea that humans are exceptional is considered to be a kind of fantasy, or metaphysical delusion: the remnant of an archaic, and determinately prescientific, worldview. But here we are moved to query and disturb that too-easy equation and ask: can the still-lingering conceit that human beings are more than just animals be wholly identified with the free-floating persistence of a theological conception of the human? In turn, is it so simply and elegantly the case that, as Plumwood claims, “modern exceptionalism . . . just shifted ground, from body to mind,”<sup>15</sup> or that, as Latour observes, “we haven’t moved an inch since Descartes . . . [such that] the [human] mind is still in its vat, excised from the rest, disconnected, and contemplating . . . the world”?<sup>16</sup>

There is no doubt that metaphysical ideas about the human have persisted, and that critiques of human exceptionalism’s various threads are foundational to an environmental humanities agenda. However, such a sweeping declaration of humanism’s continuity—as if some idea of human distinctiveness has remained essentially unchanged for four hundred or more years—obscures a significant, even substantial, development in the history of that idea. For, as we elaborate here, beyond arguments elsewhere,<sup>17</sup> it was with the emergence of a “science of man” at the very beginning of the nineteenth century, that Descartes’s understanding of the human, and what was more generally considered to be its exalted place in the so-called great chain of being, was largely supplanted. A new account—indeed, ontology—of the biological distinctiveness of human beings steadily gained credibility and influence.

Our description of the emergence of a distinctly modern figure of human exceptionality centers on the epistemic shift that Michel Foucault identified, at the very start of the nineteenth century, from the classical to the modern age; and most relevantly for us, in the displacement of natural history by comparative anatomy.<sup>18</sup> Following Linnaeus’s infamous classification of the human alongside “other” animals, this shift has been widely understood as one in which metaphysical assumptions about the unique and exceptional status of the human were marginalized by scientific contentions that the human was “part of the order of nature” and could be understood as a purely physical, rather than metaphysical, being.<sup>19</sup> No doubt the appearance of an explicitly materialist “science of man” at the beginning of the nineteenth century,<sup>20</sup> as well as evolutionary theory later on, was anathema to those who continued to insist that humans were ontologically distinct from nonhumans.<sup>21</sup> And, of course, as numerous accounts of

15. Plumwood, “Human Exceptionalism.”

16. Latour, *Pandora’s Hope*, 8.

17. See Anderson and Perrin, “Thinking *with* the Head”; Anderson and Perrin, “Up from the Ape”; and Anderson, “Mind over Matter?”

18. Foucault, *Order of Things*, chap. 5.

19. Carson, *Measure of Merit*, 79.

20. See, for example, Williams, *Physical and the Moral*.

21. Bowler, *Theories of Human Evolution*, 150.

Western attitudes to nature have described, many did. But to assume that humanism has just endured, as White, among others, would have it, *despite* these developments is to overlook the struggle to place human exceptionalism itself on a different—that is, a materialist—foundation.

It is this strenuous intellectual struggle that provides our focus here, as we trace the emergence of the claim that the unique mental capacities of humans are owed not to some metaphysical quality of mind or soul, but rather to the distinctiveness of human anatomy.

It was, we will indicate, the human body—and, above all, the human head—that provided the basis of a modern attempt to establish that humans were creatures of a categorically different order from all others and, most immediately, from the great apes. As metaphysical speculation about the human was being displaced by what Nancy Stepan has referred to as the “new biology,”<sup>22</sup> the beginning of the nineteenth century witnessed the appearance of what we have described as an explicitly *anatomical* humanism.<sup>23</sup> More precisely, our argument here will be that it was to the bodies—and again, above all, the heads—of different “races” of people that comparative anatomists like George Cuvier, in France, and William Lawrence, his follower in England, turned in an effort to determine the exceptional nature of the human *without* invoking, as Linnaeus and other eighteenth-century naturalists had done, an ontological separation of the human mind from the human body.<sup>24</sup> For as Lawrence himself asked, “Where shall we find proofs of the mind’s independence [from] the bodily structure? Of that mind, which like the corporeal frame, is infantile in the child, manly in the adult, sick and debilitated in the diseased, frenzied or melancholy in the madman, enfeebled in the decline of life, doting in decrepitude, and annihilated by death?”<sup>25</sup>

Linnaeus’s assertion that he could find no physical way to categorically distinguish between humans and the great apes had been premised on the belief that orangutans walked upright.<sup>26</sup> As we will indicate in the next (second) section of this article, it was the overturning of this belief, following the French anatomist Louis-Jean-Marie Daubenton’s comparison of the heads of humans and those of orangutans, that opened

22. Stepan, *Idea of Race*, 14. See also Price, “Do Brains Think?”

23. Anderson and Perrin, “Up from the Ape.”

24. We do not, of course, aim here to provide a comprehensive account of the historical development of this strand of “anatomical humanism.” In this respect, however, Cuvier is an exemplary figure, who was central to Foucault’s description of an historical shift from the classical to the modern age; see Foucault, *Order of Things*, 287–304. Stepan, moreover, refers to him as the acknowledged “pioneer” of comparative anatomy; see Stepan, *Idea of Race*, xiii. Moreover, as Blankaert and Meijer both point out, it was Cuvier who first maintained what we will indicate here to be the crucial link between physiognomy and mental capacity that was to prove so influential during the course of the nineteenth century; see Blankaert, “Vicissitudes de l’angle facial,” and Meijer, *Race and Aesthetics*, 176. See also Staum, *Labelling People*, 28.

25. Lawrence, *Lectures*, 7.

26. The term *orangutan* was used generically up until around the middle of the nineteenth century to refer to chimpanzees and other great apes.

up the prospect of an account of human distinctiveness that could avoid recourse to either Cartesian or Christian metaphysics. For the comparative anatomists of the late eighteenth and early nineteenth centuries, it was bipedalism that came to be regarded as a distinctively human trait. What still remained to be determined, however, was exactly how the uniquely upright posture of human beings could explain what Cuvier, for example, saw as the “vast . . . difference” that separated humans from (other) animals.<sup>27</sup>

The third section of this article demonstrates how it was through the notorious practice of racial craniometry that Cuvier and others sought to establish a correlation between human anatomy and human mentality.<sup>28</sup> It was the Dutch anatomist Petrus Camper who formalized Daubenton’s work comparing humans and apes into a measure of the facial profile.<sup>29</sup> It was, though, Camper’s extension of his so-called facial angle to different human “races” that Cuvier drew on to develop his notion of an intelligence that was qualitatively different in beings that walked upright. As patently ethnocentric, and now widely discredited, colonial descriptions of the “inferiority” of certain peoples—moral, cultural and, perhaps above all, technological—became linked to variations in the size and shape of their skulls,<sup>30</sup> it was this supposed inferiority that came to provide vital support for Cuvier’s claim that the unique, but now variable, mentality of humans could be traced to their anatomy.<sup>31</sup>

In this respect, the central argument of this article turns on something of an inversion of the familiar critique that craniometry was a practice designed to “biologize” long-standing racial prejudices.<sup>32</sup> According to that claim, the craniometric attempt to

27. Cuvier, *Lectures*, 125.

28. The practice of craniometry was not, of course, limited to “race.” And although our claim here is that race occupied an unenviably privileged place in the elaboration of an anatomical notion of “intelligence,” craniometrists also studied the heads of “geniuses,” scientists, philosophers, and artists, as well as those who were considered to be idiots, madmen, and, a little later in the nineteenth century, criminals. See, for example, Hecht, *End of the Soul*; and Rafter, *Origins of Criminology*. Also, on the gendered character of craniometry—a subject as complex as its racialized foundation, and which therefore requires its own study—see Fee, “Nineteenth-Century Craniology,” and Schiebinger, *Nature’s Body*.

29. See Blanckaert, “Les Vicissitudes de l’angle facial”; Meijer, *Race and Aesthetics*, 171; and Schiebinger, *Nature’s Body*, 150. Formulated by Camper in the late eighteenth century, the facial angle was a measure of the facial profile, calculated at the intersection of a line drawn from the lowest point of the ear to the nostril and a line drawn from the upper jawbone to the most prominent part of the forehead.

30. See Anderson, *Race and the Crisis of Humanism*, chap. 4, for a preliminary outline of the argument more fully developed below, which supplements critical race accounts of later, more openly invidious, racist commentators like Samuel Morton in the 1840s.

31. To be clear, our aim is focused on eliciting a modern elaboration of the idea of the nature-transcendent human. While we acknowledge the valuable critiques of the racial, gendered, and imperial basis on which a more general Western notion of the human, as a supposedly universal category, was formulated (for example, in the black feminist writings of Sylvia Winter; see McKittrick, *Sylvia Winter*), our concern here is with the details of a modern invocation of the human who “stands” above nature.

32. See, for example, Stepan, *Idea of Race*, 14; and Gould, *Mismeasure of Man*, 56–57. As will become clear, our point here is not to contest the claim that craniometry was racist, only to suggest that the racialized “knowledge” it purported to produce played a key role in the development of a particular—culturally specific—

correlate the perceived developmental levels of certain peoples with their physical characteristics “appropriated . . . the vision of a hierarchy of species associated with the great chain of being, and with it the chain’s key criterion for distinguishing species, an organism’s overall level of intelligence.”<sup>33</sup> Here, though, we want to challenge the claim that a notion of intelligence was just assumed by the comparative anatomists of the early nineteenth century, and then simply applied to race. In that claim, some key developments in the exceptionalist idea of human mentality are glossed over, as if that idea remained essentially unchanged ever since the classical age. This all-too-familiar critique of craniometry also appears to presume that the folding of humanism into racism was so inevitable and orderly as to not require its own problematization. As we elaborate later, the perhaps more far-reaching argument to advance is the constitutive role of the race idea in the very formulation of a new humanist interpretation of the more-than-animal human.

As Foucault has pointed out, it is with the transition to modernity that “the possibility of deploying a great natural order which would extend continuously from the simplest and most inert of things to the most living and the most complex disappears.”<sup>34</sup> For William Bynum, too, with the emergence of biology early in the nineteenth century, a new “science of living bodies” displaced “the chain of being [that] had been a part of [the] natural history tradition.”<sup>35</sup> And, indeed, Cuvier himself considered what he called the “pretended chain of beings as applied to the whole of creation” to be “erroneous.”<sup>36</sup> It is, therefore, far from clear that comparative anatomists such as Cuvier simply drew on, and applied, the hierarchical principle expressed in the conception of a great chain of being. Rather, their concern, we will argue here, was precisely to elaborate a new basis for such a hierarchy. The third section of this article, then, pursues an alternative account of the logic of Cuvier’s—and also Lawrence’s—recourse to Camper’s racial physiognomy. For, we will argue, it was precisely in the *rejection* of the great chain’s essentially theological “principle of gradation” that “race” was called on to substantiate a determinedly physical, rather than metaphysical, account of the intellectual superiority of humans over all (other) animals.<sup>37</sup>

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idea of the human. It is, furthermore, clear that in the later nineteenth century work of those such as Samuel Morton, racial craniometry became a classificatory project that—in the context of North American debates around slavery, as well as colonial policy more generally—was more straightforwardly and ruthlessly informed and/or appropriated by racist interests. See, for example, Gould, *Mismeasure of Man*; and Fabian, *The Skull Collectors*.

33. Carson, *Measure of Merit*, 83. In addition to Stepan, *Idea of Race*, chap. 1, see Goldberg, *Racist Culture*, for whom a biological conception of race was based upon a “principle of gradation” derived from “Aristotle’s ‘hierarchy of being’” and then “adopted later as a fundament of Christian thought,” 50.

34. Foucault, *Order of Things*, 292.

35. Bynum, “Great Chain of Being,” 20.

36. Cuvier, *Animal Kingdom*, 7.

37. In this respect, our argument here also challenges the commonsense claim—pursued, for example, by Justin Smith—that “the fragmentation of the species into races” was “a consequence of a forceful rejection of an older and time-honored conception of humanity.” See Smith, *Nature, Human Nature, and Human Difference*, 19.

Of course, racial craniometry never managed to fix a concept of intelligence to the different heads of the world's people, and the practice of head measuring fell into disrepute by the late 1800s. Our contention here, however, is that in its anatomical derivation of an idea of intelligence—understood, in culturally specific terms, as an innate, but variable capacity for what was referred to as “civilizability” or “perfectibility”<sup>38</sup>—racial craniometry was constitutive of a highly influential account of the more-than-animal nature of the human. It was, moreover, this account that was taken up within some strands of evolutionary theory; and, as we will indicate in the final (fourth) section of this article, it is an account that is still widely accepted today.<sup>39</sup> For it is not, in general, a Christian or Cartesian notion of the subject that contemporary humanism recalls. Rather, it is a resolutely modern figure of the exceptionally human—as upright, two handed, and large brained—that informs the still insistent view today that we are, as the prominent humanist philosopher and neuroscientist Raymond Tallis has put it, “fundamentally different from other creatures.”<sup>40</sup>

We turn now, therefore, to the emergence of racial craniometry, and with it to the detail of accounts of human verticality in the shift from the human's exalted place in the great chain of being to a more modern formulation of human exception from animal nature.

### The Emergence of Anatomical Humanism

European discovery of the great apes from around the middle of the seventeenth century turned the massive gulf that Descartes had asserted between humans and (other) animals into a problem. “Surely,” Linnaeus wrote in the margins of his *Systema naturae*, “Descartes never saw an ape.”<sup>41</sup> Linnaeus's infamous assertion that he could find no physical basis on which to distinguish categorically between humans and the great apes was premised on the widely accepted assumption that orangutans “often go erect.”<sup>42</sup> In their seventeenth-century studies (of, respectively, a chimpanzee and a bonobo) both Nicholas Tulp and Edward Tyson had stressed the physical similarities between humans and orangutans and again their “fully erect gait.”<sup>43</sup> For them, as for Linnaeus, the

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For Smith, “so long as the human soul was thought to be something independent of the body, physical differences between human beings could not be taken as markers of essential difference” (18). Our argument here, however, is that the elaboration of race as biology is owed less to the rejection of an older conception of humanity than to the attempt to recast this conception in physical, rather than metaphysical, terms. On this point, see Perrin and Anderson, “Up from the Ape.”

38. Williams, *Physical and the Moral*, 263.

39. Again, we are not aiming to present a comprehensive account of the nineteenth century discourse on the human here, and our own discussion will be limited to uncovering an exceptionalist strand in nineteenth-century materialism.

40. Tallis, *Aping Mankind*, 214.

41. Linnaeus, cited in Agamben, *The Open*, 23.

42. Linnaeus, cited in Greene, *Death of Adam*, 185.

43. Corbey, *Metaphysics of Apes*, 41. See also Greene, *Death of Adam*, 177; and Zacharias, *Construction of a Primate Order*, 40.

impossibility of physically establishing the distinctiveness of human beings was—in a characteristic seventeenth-century argument—taken to support the Cartesian (and Christian) idea that, as Bynum puts it, there was “an immaterial principle . . . unique to man.”<sup>44</sup> As environmental historian Harriet Ritvo has pointed out, for other animal species Linnaeus included within his classification an indication of their physical particularity; but “with regard to Homo he identified no distinctive physical feature, and merely commented ‘*nosce te ipsum*’ (know thyself).”<sup>45</sup> Toward the end of the eighteenth century, however, and with the arrival into Europe of many more apes, including actual orangutans, claims that apes walked upright were increasingly called into question.

Rejecting earlier accounts of apes that could walk, it was the German physiologist Johann Friedrich Blumenbach who first distinguished humans as bimanal, or two-handed, creatures from apes as four-handed creatures.<sup>46</sup> The “natural position” of “man,” Blumenbach argued, is an “erect one,” and it is this that “separate[s] him from the apes, especially from the orang-outang.”<sup>47</sup> But although Blumenbach took the inability of earlier naturalists to distinguish the human from the orangutan as “a challenge,”<sup>48</sup> for him human exceptionality was still traced to the fact that “Man” is uniquely endowed with “Reason.”<sup>49</sup> So, maintaining that “the endowments of the mind” and “the bodily structure” have “not . . . the slightest relation to each other,”<sup>50</sup> Blumenbach was not particularly interested in the anatomical distinctiveness of human beings; even if it is this possibility that his own emphasis on human uprightness was to open up. He nevertheless went on to list numerous physical differences between humans and animals—referring to the foot, the pelvis, and so on—to support his own claim that “Man . . . is the only biped.”<sup>51</sup> His first reference, however, was to what he called “those common arguments for the erect position of man, deduced from the position of the great occipital foramen.”<sup>52</sup>

Blumenbach is here referring to Daubenton’s *Memoir on the Different Positions of the Occipital Foramen in Man and Animals*, which was published in 1764, and which directly anticipates Camper’s formulation of the facial angle (to be discussed in more detail below). Daubenton describes the occipital foramen as “fixing the place of the joint of the head with the neck.”<sup>53</sup> In his own comparison of humans and orangutans, Daubenton found that, in contrast to the ape, in which he noted that the occipital foramen is located at “the posterior part of the head,” in “man” it is placed “at about the center of the

44. Bynum, “Anatomical Method,” 447.

45. See Ritvo, “Humans and Humanists,” 70.

46. Blumenbach, *Anthropological Treatises*, 86.

47. *Ibid.*, 94.

48. Zacharias, *Primate Order*, 101.

49. Blumenbach, *Anthropological Treatises*, 81.

50. *Ibid.*

51. *Ibid.*, 87.

52. *Ibid.*, 85.

53. Daubenton, “Memoire,” 4.

skull's base."<sup>54</sup> Daubenton then went on to explain this difference with reference to what he described as "man's . . . vertical direction,"<sup>55</sup> and the necessity that the head is kept in "a sort of balance on the neck" so that, he added, "his face [is] in front when he is standing up."<sup>56</sup> As Claude Blanckaert has pointed out, it is as Daubenton makes this link between "the head's shape" and "the body's posture"<sup>57</sup> that the practice of craniometry is inaugurated precisely in the attempt to determine "an objective criterion by which to distinguish between men and quadrupeds (and in particular, the great apes)."<sup>58</sup> It was, however, Camper's further development of Daubenton's study of the occipital foramen that was to prove much more influential.

Extending Daubenton's discovery of a cranial difference between humans and animals into a formal measure of the "verticality" of the facial profile, Camper was the first to use cranial variations to distinguish racial "types." It was, then, after Camper that the image of a "hierarchy of skulls passing progressively from lowliest ape to loftiest Greek"—with the skull of the "negro" (attributed a facial angle of 70 degrees) placed closest to that of the ape (with a facial angle of 58 degrees), and farthest from the Greek statue of Apollo (with an idealized facial angle of 100 degrees)—acquired what Laura Schiebinger has referred to as an "iconic" status in nineteenth-century thought.<sup>59</sup> Camper himself, however, refuted the argument that his own physiognomy implied that the "negro" was in any way inferior.<sup>60</sup> Writing at the end of the eighteenth century—and so, according to Foucault's periodization, in a classical episteme in which interest was limited to "visible differences"<sup>61</sup>—Camper's hierarchy was not intellectual. Rather, as Stepan has pointed out, he "looked only to the shape of the skull and ignored . . . mental capacities."<sup>62</sup> So, although Camper formulated the facial angle as the index of an uprightness according to which humans could be physically distinguished from animals, for him racial differences in this angle fell within a distinctly human range of variation.<sup>63</sup> As we will see now, however, it is as Cuvier drew on the facial angle in support

54. *Ibid.*, 7.

55. *Ibid.*, 12.

56. *Ibid.*, 6.

57. *Ibid.*, 1.

58. Blanckaert, "Vicissitudes de l'angle facial," 417 (our translation).

59. Schiebinger, *Nature's Body*, 149–50. These figures are Camper's own. See Meijer, *Race and Aesthetics*, 108. Note that Schiebinger's primary interest in such hierarchical representations is framed in terms of the race, gender, and class differentiations of colonial "identity politics." Here our more ecological concern with humanist formulations of the human place in nature is also, and more closely, aligned with critical historiographies of the role of animals in human self-definition and regard. See, for example, and only very indicatively here, Ritvo, *Animal Estate*; Fudge, *Perceiving Animals*; and Lestel, "The Infinite Debt."

60. Staum, *Labelling People*, 26–7. Indeed, Camper maintained that his "comparison between the African and orang-outang was only meant to dispel the popular myth of the black's apparent likeness to the ape." See Meijer, *Race and Aesthetics*, 124.

61. Foucault, *Order of Things*, 158.

62. Stepan, *Idea of Race*, 10.

63. Meijer, *Race and Aesthetics*, 124.

of his own attempt to establish an anatomical understanding of human distinctiveness that Camper's racial physiognomy came to acquire a radically new significance.

With the discursive shift that Foucault describes, from natural history to comparative anatomy, it was "the unities underlying the dispersion of visible differences that replaced those differences as the object of the natural sciences."<sup>64</sup> Succinctly, comparative anatomy emerged as a science of life rather than a classification of beings. Instead of just describing and comparing variations in their appearance, it sought to clarify the relationship between their constituent elements—their "organization"—and in so doing to determine the "internal logic" of what could then be referred to as different "organisms."<sup>65</sup> Comparative anatomy thus inaugurated the possibility, not merely of describing, but indeed of explaining, the anatomical variations between different beings. It was this possibility that presented anatomists like Cuvier and Lawrence with a means and method of overcoming the difficulty that Linnaeus and other natural historians had encountered in their attempts to discover an adequate physical basis on which to distinguish human beings.

Premised on his analysis of an increase in the organizational complexity and centralization of beings as one moved up through the animal kingdom,<sup>66</sup> Cuvier is often understood as having considered the human as "merely another animal."<sup>67</sup> But although Cuvier saw the human as a purely physical being, for him "the distinction between brute and human mind was absolute."<sup>68</sup> Indeed, Cuvier himself asked, "With so much resemblance in the structure of the nervous system . . . why is there so vast a difference as to the total result, between man and the most perfect animal?"<sup>69</sup> Echoing earlier naturalists, Cuvier states explicitly that such a question lies beyond the proper domain of anatomy.<sup>70</sup> But, we want to suggest here, it is exactly in order to answer this question that Cuvier draws on Camper's facial angle. For he seeks to account for the distinct character of human mentality, not with reference to what Lawrence disparagingly referred to as "immaterialist" conceptions of mind or soul,<sup>71</sup> but by linking it to human uprightness.

Like both Blumenbach and Camper, Cuvier identified the physical distinctiveness of humans with their upright posture. "Man" he argued, is "the only animal truly bimanous and biped. The whole body of Man is modified for the vertical position."<sup>72</sup> Again

64. Foucault, *Order of Things*, 158.

65. See also Zacharias, *Primate Order*; she notes how "the concept of organization brought about an understanding of the living being in terms of itself," 79.

66. See Figlio, "Metaphor of Organisation."

67. Coleman, *Georges Cuvier*, 65.

68. Carson, *Measure of Merit*, 79.

69. Cuvier, *Lectures*, 125.

70. *Ibid.*, 126.

71. Lawrence, *Lectures*, 83.

72. Cuvier, *Animal Kingdom*, 45.

like Blumenbach, Cuvier notes the various physical features that support this fact, including larger feet, stronger leg muscles, a wider pelvis, and so on. It is, however, the head in its “vertical position” and, now recalling Daubenton, in its “articulation . . . exactly under the middle of its mass” that Cuvier emphasizes.<sup>73</sup> In “man,” he writes, “the plane of the foramen magnum is nearly perpendicular to that of the eyes, and parallel to that of the palate; on which account the eyes and the mouth are both directed forward when we stand upright.”<sup>74</sup> If, Cuvier adds, the “eyes and mouth” of “man” were “directed towards the ground, [then he] could not see before him”; and as such, Cuvier concludes, “Man . . . is designed to be supported by the feet only.”<sup>75</sup> The fact of uprightness is not, however, sufficient to explain the “vast difference” that, for Cuvier, sets the human species apart from all others. Here, we want to suggest, it is Camper’s racial physiognomy that Cuvier invokes to formulate an account of its significance: precisely by relating mental faculties to bodily structure.

### Head Measuring, Race, and the Idea of Human Exceptionality

Cuvier first considered Camper’s facial angle in 1795 when, with Etienne Geoffroy Saint-Hilaire, he compared different kinds of apes. As we have indicated, for Camper the facial angle had nothing to do with mentality, or even with the brain;<sup>76</sup> but it is in seeking to make this connection that Cuvier presents two related theses. First, that as a measure of the inverse ratio between the size of the face and cranial—and hence cerebral—capacity, the facial angle may be taken as a measure of the predominance of the “internal faculties” over the “external senses.” And second, that the facial angle may thus be understood as “a *physiological* measure of intelligence,”<sup>77</sup> where intelligence is equated with cerebral capacity and understood as the extent to which a more sensory, and for Cuvier a *more animal-like*, existence has been superseded. As Cuvier was to write in his slightly later, and more detailed, *Lectures on Comparative Anatomy*: “The two organs which occupy the greatest portion of the face are those of smell and taste. In proportion as the organs of these two senses are developed, the magnitude of the face, and its proportion, with respect to the cranium, is increased.”<sup>78</sup> And so, inversely, “as the brain is enlarged, the cranium which contains it augments in capacity, and becomes more considerable when compared with the face.”<sup>79</sup> Cuvier then goes on to suggest that: “The relative proportion of the cranium and the face, which indicates immediately that of the brain, with respect to two of the principal external senses [smell and taste], is . . . a

73. *Ibid.*

74. Cuvier, *Lectures*, 232.

75. Cuvier, *Animal Kingdom*, 45.

76. Meijer, *Race and Aesthetics*, 176. As Meijer notes, Camper himself traced the facial angle to the “jaw form, not the brain skull” (*Ibid.*, 172).

77. Blanckaert, “Vicissitudes de l’angle facial,” 434 (our translation and emphasis).

78. Cuvier, *Lectures*, 2.

79. *Ibid.*, 2–3.

mark of more or less perfection in the internal faculties.”<sup>80</sup> This “perfection” thus rests on what, for Cuvier, is the dominance of “the brain, the common centre of all the nerves . . . the instrument by which the mind . . . reflects and thinks” over those “two senses [again, smell and taste] . . . which,” he then adds, “act with the greatest force on animals.”<sup>81</sup>

As Karl M. Figlio has pointed out, the crucial feature of Cuvier’s general concern with the organization of the nervous system in different animals was its culmination in “the large and complicated brain of man.”<sup>82</sup> More precisely, though, in Cuvier’s account, “man is the animal which has the largest cranium, *and* the smallest face.”<sup>83</sup> As he relates brain size to face size, for Cuvier it is the uniquely upright posture of human beings, and so the unique verticality of their faces, which means their brain is not just quantitatively, but qualitatively, different from that of (other) animals. But the argument Cuvier is trying to get to here, namely that the “vast difference” between humans and animals can be accounted for with reference, not to some immaterial conception of mind, but exactly to the “large and complicated” nature of the human brain, is not yet established. Although he has—via the facial angle—argued that uprightness is linked to brain size, the significance of this link still remains to be determined. Cuvier has yet to get from the first to the second of the theses indicated above. And it is precisely to do so that he comes to invoke what later came to be widely critiqued as the dubious and pernicious idea of race.

In Cuvier’s paper with Geoffroy, and straight after their contention that the facial angle can be understood as a measure of the inverse ratio between “sensibility” and “brutality,” “there follows,” in Gustav Jahoda’s words, an “immediate jump to humanity.”<sup>84</sup> Cuvier and Geoffroy write: “In the various races of man, one observes the same series of relationships as in the various species of animals, between the projection of the skull and that degree of intelligence . . . which constitutes perhaps the principal basis of the differences which exist between man and man,” adding immediately, “None of the peoples with a depressed forehead and prominent jaws have ever furnished subjects generally equal to Europeans in the faculties of the soul; and we are so well used to the link between the proportions of the head and the quality of the mind, that the rules of physiognomy, which are based thereon, have become a commonplace notion.”<sup>85</sup> But while this shift from apes to human beings has, in the familiar critique of racialized craniometry mentioned earlier, been taken as evidence that Cuvier and Geoffroy were “apply[ing] a characteristic used to assess animal species—overall intelligence—to humans,” here we want to propose another possibility in a critique inspired at the juncture

80. *Ibid.*, 4.

81. *Ibid.*

82. Figlio, “Metaphor of Organisation,” 24.

83. Cuvier, *Lectures*, 4 (emphasis added).

84. Jahoda, *Images of Savages*, 77.

85. Cited in *ibid.*

of ecological concerns and the “identity politics” of human differentiation.<sup>86</sup> For what this “jump to humanity” indicates, we want to suggest now, is the fundamental, if not founding, role of race in the very formulation of Cuvier’s account of ‘intelligence’.

Cuvier and Geoffroy’s appeal to the “commonplace” indication of a “link between the proportions of the head and the quality of the mind” recalls the more popular work of Johann Casper Lavater, as well as Camper’s own physiognomy.<sup>87</sup> As Cuvier was to write in his *Lectures*, and again immediately after his claim that the facial angle may be understood as a measure of the predominance of the “internal faculties” over the “external senses,” “The ancients . . . made this [facial] line incline somewhat more forward than it does in man, in figures to which they were desirous of giving a *more than human* air, as the statues of their gods, and those of their heroes.”<sup>88</sup> He continues: “It seems they were desirous of placing man between beings of this sort, of a more perfect order, and brutes; and that they wished to indicate, by the opposite inclination of the forehead, that their heroes were still more removed than common men from the forms or the nature of the inferior animals.”<sup>89</sup>

Here, then, physiognomy again provides support for the argument that the facial angle may be understood as an anatomical index of how “removed” certain beings are from some inferior, and animal-like, nature. But, again, it is to race that Cuvier turns to “prove” his claim that, as an index of brain size, the facial angle may also be understood as a measure of intelligence. Directly after the above citation, he writes (and without any elaboration), “The facial angle being determined in the manner I have pointed out, which is that of Camper, we find that in European heads this angle is usually 80°, in Mongols 75°, and in Negroes 70°.”<sup>90</sup> Elsewhere, however, and echoing his earlier work with Geoffroy, he announces his rationale for doing so: “It is not for nothing that the Caucasian race has gained dominion over the world and made the most rapid progress in the sciences, while the Negroes are still sunken in slavery.” It is, he maintains, because “the shape of their head related them somewhat more than us to the animals.”<sup>91</sup>

Through travelers’ and colonists’ almost always ethnocentric accounts of indigenous societies, as well as the more general circulation of racial stereotypes, the ranking of “which [racial] groups were superior . . . and which inferior” was already “known” at the end of the eighteenth century.<sup>92</sup> As Michael Adas has noted, it was “differences in material culture” and perceived “levels of sophistication in social organization and

86. Carson, *Measure of Merit*, 85.

87. As Martin Staum notes, Lavater’s *Essays on Physiognomy*, first published in the 1770s, “went through fifteen French editions by 1810.” Staum, *Labelling People*, 30.

88. Cuvier, *Lectures*, 6 (emphasis added).

89. *Ibid.*

90. *Ibid.*

91. Cited in Coleman, *Georges Cuvier*, 166.

92. Carson, *Measure of Merit*, 83.

cultural development generally” that informed “the emergence of a hierarchy of non-Western peoples that began to take shape in the minds of European observers from the very first decades of expansion.”<sup>93</sup> By the beginning of the nineteenth century, however, this hierarchy had acquired not just a sociological, but—as Blanckaert puts it—a “philosophical” status, which is to say that it became both “constitutive and foundational of a [new] order of rationality.”<sup>94</sup> As such, we are suggesting, Cuvier’s reference to those “peoples with a depressed forehead and prominent jaws” cannot be understood as just assuming, and then applying, some pre-given notion of intelligence to “racial” variations in appearance. Rather, it is precisely the “known” inferiority of such peoples that Cuvier is drawing on as proof of the relationship he is trying to establish between head shape and what is an obviously highly contingent and culturally specific notion of intelligence.<sup>95</sup> Without this “known inferiority,” Cuvier’s argument that the facial angle can be taken as a measure of intelligence would remain not just insubstantial but unsubstantiated. It is, then, his recourse to an apparently self-evident racial hierarchy that provides the very basis on which Cuvier is able to contend that certain anatomies are more intelligent, and hence superior to, others.<sup>96</sup>

In this respect, Cuvier’s English follower, William Lawrence, was even more explicit in his methodological use of “race” to demonstrate that a distinctive human mentality is the product, not of some immaterialist principle, but rather of a being’s physical “organisation.” Lawrence wrote: “If the physical frame and the moral and intellectual phenomena of man be entirely independent of each other, their deviations will exhibit no coincidence . . . if, on the contrary, the intellectual and moral be closely linked to the physical part, if the former be the offspring of the latter, the varieties of both must always correspond.”<sup>97</sup> To this he adds, immediately, “The different progress of various

93. See Adas, *Machines as the Measure of Men*, 65–68.

94. See “Vicissitudes de l’angle facial,” 420 (our translation).

95. Something of the argument we are proposing here is discernible in the phrenological claim that the mind was situated in the brain. Comparing what he referred to as the “conspicuous” difference in the forehead of the skull of Raphael and that of “a native of New Holland,” the Scottish phrenologist George Combe contrasted the acknowledged “genius” of the former with accounts of the “ignorance” of the latter to conclude, “We have now arrived, by a fair and legitimate induction, at strong presumptive proof in favor of the grand principle of Phrenology, viz. that the brain is the organ of the mind.” See Combe, *System of Phrenology*, 5. And, earlier, Johann Gasper Spurzheim maintained that “the heads of different nations offer a study of great importance” precisely insofar as they are able to verify [the] general assertion that the brain is the organ of the mind.” See Spurzheim, *Phrenology*, 99–100. Later, moreover, the French craniometrist Paul Broca not only defended his own results with the argument that “they were fully in accord with ordinary assessments of the intellectual superiority and inferiority of the races,” he also advocated “choosing, for the comparison of brains, races whose intellectual inequality was wholly evident.” See Williams, *Physical and the Moral*, 264, citing Broca. Again, in all of these instances, mind or intellect obtains its content from the apparently self-evident, but of course culturally specific, criteria that inform the assumption of a hierarchy of races.

96. On the argument implied here, that race is a discourse on, and measure of, the human, see Perrin and Anderson, “Reframing Craniometry.”

97. Lawrence, *Lectures*, 475.

nations in general civilisation, and in the culture of the arts and sciences, the different characters and degree of excellence in their literary productions, their varied forms of government, and many other considerations, convince us beyond the possibility of doubt, that the races of mankind are no less characterised by diversity of mental endowments, than by . . . differences of organisation.”<sup>98</sup> For Lawrence, as for Cuvier, the human “predominance of the organ of thought and reflection over the instruments employed in external sensation” is linked, again via Camper’s facial angle, to the “peculiar distinction of the erect attitude.”<sup>99</sup> Lawrence then goes on to distinguish “the Negro structure” from “the Caucasian model,” arguing that in the former “the intellectual characters are reduced [and] the animal features enlarged and exaggerated.”<sup>100</sup> He then writes: “This inferiority of organisation is attended with corresponding inferiority of faculties; which may be proved . . . by every fact in the past history and present condition of Africa.”<sup>101</sup>

It is, therefore, the ethnocentric criteria embedded in racialized stereotypes and colonial accounts of non-Europeans that, via the practice of craniometry, founds the modern contention that a uniquely human mentality is the product of a uniquely human anatomy. Premised on human uprightness and traced to cerebral capacity, for both Lawrence and Cuvier the exceptionality of the human is attributed not to some immaterial idea of mind, but to the distinctive, if variable, nature of the human body. Clearly, then—and with the appearance of what Kristen L. Zacharias has identified as an entirely new idea of “the intelligence of the being”—the mind is, recalling Latour, no longer in its vat.<sup>102</sup> And, indeed, if, as Cuvier insisted, “intelligence . . . is in constant proportion to the relative size of the brain,”<sup>103</sup> for him, this was quite literally because “the more elevated the nature of the animal, the more voluminous is the brain.”<sup>104</sup>

### **Evolutionary Humanism: The Human’s “Unique Path,” from Wallace to Neuroscience**

Although the further elaboration of “anatomical humanism” was to exert a massive influence throughout the nineteenth and early twentieth centuries, and especially with regard to race, Cuvier’s interpretation of the facial angle was eventually refuted.<sup>105</sup> The identification of human exceptionality with a certain quality of intelligence, understood as a physical attribute of the brain, and usually related to human bipedalism, has, however, endured. Tracing its (hitherto neglected) history through the period of evolutionary theory and up to today’s arguments for human exceptionality, is a task that we

98. *Ibid.*, 475–76.

99. *Ibid.*, 166.

100. *Ibid.*, 363.

101. *Ibid.*, 364.

102. Zacharias, *Primate Order*, 119–20.

103. Cuvier, *Animal Kingdom*, 30.

104. *Ibid.*, 5 (emphasis added).

105. See Blanckaert, “Vicissitudes de l’angle facial,” 447.

cannot, of course, take up in a single article. Here, however, we offer a brief indication of the trajectory of such a history, to signal varying investments in the same modern humanist idea that the human is more than just a human animal. Furthermore, we can note only in passing that such investments in a humanist thesis of intelligence were not abstract iterations of fantasies of human supremacy. Instead, during turbulent experiences of culture contact, and after Tim Ingold's account of the privileging of the use of the hands in conjunction with the brain in evolutionary thought, they were intensely fraught efforts to adapt the thesis of human exceptionalism to the explicitly secular thinking of evolutionism.<sup>106</sup>

As Peter Bowler has pointed out, nineteenth-century opposition to evolutionary theory tended to stress "the unique nature of our mental and moral faculties" and "to defend the traditional belief that they could only have arisen by divine intervention."<sup>107</sup> Evolutionists themselves, however—notwithstanding their significant differences—did not in general relinquish the belief that such faculties were unique to human beings as a species. Indeed, the history Bowler himself traces is largely that of the series of arguments that were proposed exactly to try to account for the intellectual "gap" that many evolutionists perceived between humans and (other) animals. These arguments involved various configurations of those distinctly human attributes—uprightness and greater brain development, but also two-handedness—on which Cuvier's own account of human distinction had focused. In this respect, the distinct path of human evolution has regularly been characterized as a movement "up" from the ape.<sup>108</sup>

Before his turn to spiritualism, and his own recourse to an argument that the human was a product of supernatural intervention,<sup>109</sup> it was the codiscoverer of evolution, Alfred Russell Wallace, who provided one of the most influential arguments for a distinctly human evolutionary path. In his 1864 paper, "The Origin of the Human Races and the Antiquity of Man Deduced from 'Natural Selection,'" Wallace extended the argument, traced here to Cuvier, that the human brain, and with it intelligence, developed in the surpassing of a sensory, and animal-like, existence. Reconciling what he considered to be "the intellectual chasm which separates man from the apes" with "recognition of the striking resemblances to them which exist in other parts of its structure," Wallace proposed that at a certain point in his development, "man" would have "ceased to be influenced by natural selection" because "the power that had hitherto modified the body, transferred its action to the mind."<sup>110</sup> Wallace's argument here is that with the emergence and exercise of "his superior intellect," through the arts of tool making and soil cultivation, the provision of clothing and of weapons, "man's body

106. Ingold, "Culture on the Ground."

107. Bowler, *Theories of Human Evolution*, 50.

108. See, for example, Landau, *Narratives of Human Evolution*.

109. Wallace, "Limits of Natural Selection."

110. Wallace, "Origin of Human Races," clxviii.

will have remained . . . the same” while “his *head* and *brain* alone will have undergone modification.”<sup>111</sup> More specifically, for Wallace, “his brain . . . would have increased in size and complexity and his cranium will have undergone corresponding changes of form.”<sup>112</sup> Wallace thus proposed an account of how “man,” “raising himself by his intellect,” came to “escape . . . the influence of those laws which have produced unceasing change in the animal world.”<sup>113</sup> His argument thereby outlines a distinct form of human mental evolution, which itself provided the basis for a new anthropological account of the relative autonomy of human culture.

The type of argument proposed by Wallace, that human evolution was distinct from that process to which all other animals were subject, was widely taken up. For the American ethnologist, Henry Bates, for example, “man’s development” was characterized by a distinctively human form of “mental in place of physical evolution.”<sup>114</sup> As John Haller has indicated, Bates, “like so many of the late nineteenth century ethnologists, assumed that cultural development involved a corresponding brain development.”<sup>115</sup> In this respect, Haller also mentions the anthropologist, W. J. McGee, who “saw advancements through culture gradients from savagery to civilization as indicative of a corresponding cranial development,”<sup>116</sup> as well as Louis Henry Morgan, who maintained that, with cultural development, “the human mind necessarily grew and expanded,” such that there was a “gradual enlargement of the brain itself, particularly of the cerebral portion.”<sup>117</sup> Wallace’s linking of cultural development and the physical development of the brain thus provided, in his own words, “a new argument for placing man apart”: “not only”, he wrote, as “the head and culminating point of the grand series of organic nature, but as in some degree a new and distinct order of being.”<sup>118</sup>

For the most part it is not to Christian doctrine or Cartesian dualism, but rather to the nineteenth-century arguments we have described here, that today’s human exceptionalists have turned to maintain their insistence on the qualitatively distinct character of the human. As Nikolas Rose and Joelle M. Abi-Rached have noted, “for at least the past century” humanism has been premised on the argument “that human beings are freed from their biology by virtue of that biology.”<sup>119</sup> Even though it is still the unique “mental” abilities of humans that provide the basis for contemporary claims of human distinctiveness, it is usually in physical rather than metaphysical terms that these abilities now tend to be explained.

111. *Ibid.*, clxix.

112. *Ibid.*, clxvii.

113. *Ibid.*, clxxxiv.

114. Haller, *Outcasts from Evolution*, 101, citing Bates.

115. Haller, “Race and the Concept of Progress,” 710.

116. *Ibid.*, 714.

117. *Ibid.*, 718, citing Morgan.

118. Wallace, “Origin of Human Races,” clxvii.

119. Rose and Abi-Rached, *Neuro*, 2.

Kenan Malik, for example, argues that it is in our very nature as humans to transcend nature.<sup>120</sup> Tallis also contends that, although “we humans have transcended our biology,”<sup>121</sup> nevertheless “we are all products of natural processes” (6). He is, then, explicit that his own position owes nothing to “a belief in Cartesian dualism, or the notion that we are immaterial ghosts in the material machine of the mind or the body” (11). Rather, what he, along with other contemporary human exceptionalists propose, is “a biological explanation of how it is that we have taken a unique path” (228–9). Tallis’s own account of “how we came to be fundamentally different from other creatures” is traced to the uniqueness of human anatomy (214), and to the now familiar argument that: “Although other animals assume the upright position from time to time, only man is overwhelmingly bipedal” (216). As he goes on to note, however, “most explanations of our differences tend to hinge” more fundamentally “on the fact that we have bigger brains” (215).

In this respect, contemporary claims for human exceptionality are regularly linked to an argument that “the size and complexity of the brain have evolved more rapidly in humans than . . . in any other species, including apes.”<sup>122</sup> In his book *The Tell-Tale Brain: A Neuroscientist’s Quest for What Makes Us Human*, the neuroscientist V. S. Ramachandran, for example, writes: “Although [h]umans are apes, we are still . . . something unique . . . unprecedented . . . transcendent.”<sup>123</sup> “Any ape can reach for a banana,” he tells us, “but only humans can reach for the stars.”<sup>124</sup> Again, though, for Ramachandran, as for Tallis, the argument that “the human . . . is indeed unique and distinct from that of the ape by a huge mental gap . . . is entirely compatible with [the] claim that we are biological.”<sup>125</sup> Finally here, Marilyn Robinson, in her critique of the “parascientific” reduction of humans to animals in fields such as evolutionary psychology and sociobiology, asks, “What grounds can there be for doubting that a sufficient biological account of the brain would yield the complex phenomenon we know and experience as mind?”<sup>126</sup> She then continues to argue—and in direct opposition to a Cartesian understanding—that “the mind, like the body, is very much placed in the world.”<sup>127</sup>

### Conclusion: Decolonizing Human Exceptionality

The threat of ecological catastrophe continues to provoke a wide-ranging reconsideration of the human relation to nature. Where this threat hasn’t been simply denied by those espousing human exceptionality, however, it has prompted a renewed commitment to

120. Malik, “Materialism, Mechanism, and the Human Mind,” 2.

121. Tallis, *Aping Mankind*, 6. Subsequent citations to this work are cited in the text by page number.

122. Starr, “What Makes Us Exceptional?”

123. Ramachandran, *Tell-Tale Brain*, 4.

124. *Ibid.*

125. *Ibid.*, 12.

126. Robinson, *Absence of Mind*, 119.

127. *Ibid.*, 112.

the humanist idea that we possess a unique capacity to “control our environment.”<sup>128</sup> This is evident, most spectacularly, in what Clive Hamilton has referred to as the “techno fix of geo-engineering”: attempts to address the ecological threat via grand—and arguably reckless—technological interventions, such as obstructing solar radiation with space-based mirrors, whitening clouds to increase their reflectivity, and covering deserts and glaciers with plastic sheeting.<sup>129</sup> As Latour points out, “there is something deeply flawed in the hubristic tone of so much hype about technological solutions to ecological crises.”<sup>130</sup> Clearly such grandiose projects of geoengineering risk inflecting evolutionary narrations of the Anthropocene as “the age of humans” with all-too-familiar intimations of human mastery. Moreover, as this article has attempted to demonstrate for earlier time periods, this new thesis of the “reign of man” as a unified technological force risks construing the human in terms writ large across the globe—as if a singular Eurocentric formulation of humanity and history can be made to stand as a universal species-being.<sup>131</sup> As Dipesh Chakrabarty argues of this troubling illusion, all humanity becomes implicated equally in the production of a geophysical era that was, in historical terms, asymmetrically produced under conditions of modern colonialism.<sup>132</sup>

So while the arrogance of geoengineering can no doubt be traced to the conceit that human beings can free themselves from “the limits that frame the lives of other animals,”<sup>133</sup> we have sought in this article to pay more detailed attention to the historical bases and distinctive forms of today’s reinvigorated investment in human exceptionality. Of those who would deny the threat of ecological catastrophe, Latour asks: “What use is it to save your soul if you forfeit the world? Do you by any chance have another Earth to go to?”<sup>134</sup> But while this may be a useful point to make against those who are still clinging, in John Gray’s words, to “decaying scraps of Christian myth,”<sup>135</sup> clearly in projects such as geoengineering, human intelligence is invoked precisely in an acknowledgment that human beings don’t, after all, have a “planet B” to go to, in the words of Emmanuel Macron’s recent appeal to the US Congress.<sup>136</sup> It is a manifestly postmetaphysical idea of human exceptionality that would appear to sustain the still widely held view that what is essential or most valuable about human beings is an intelligence that sets us apart from all (other) beings on earth, and so removes us from nature.

128. Gray, *Straw Dogs*, 4.

129. Hamilton, *Earthmasters*, 200.

130. Latour, “Will Non-humans Be Saved?” 5.

131. For “reign of man,” see Stengers, “Matters of Cosmopolitics.”

132. See Chakrabarty, “Climate of History.” More generally, and for “reparative” stances that read for (and with) multiple forms of “difference” (rather than “dominance”), see Taylor and Instone, “Thinking about Inheritance”; and Gibson, Rose, and Fincher *Manifesto*.

133. Gray, *Straw Dogs*, 4.

134. Latour, “Will Non-humans Be Saved?,” 6.

135. Gray, *Straw Dogs*, 31.

136. Mindock, “Macron Rejects Trump’s Agenda.”

Tracing the distinctive emergence of this idea in the early nineteenth century, we have sought to demonstrate how humanism has not simply endured as some kind of naive Christian mythology or eternal human vanity. Such a characterization, we argue, does little to progress today's urgent task of rethinking humanism for a planet under pressure. That is, it does little to elicit the vulnerability and susceptibility of humanism to the hard work of its own reenvisioning. For as Joanna Bourke has recently observed, "To understand the *instability* of definitions of the human, we need history."<sup>137</sup>

Rather than resort to characterizing and homogenizing humanism, then, we have suggested here that physical understandings of human exceptionality can be traced to the arguments initiated by nineteenth-century comparative anatomists such as Cuvier. For it was in the attempt to correlate supposed knowledge about the inferiority of certain peoples with their physical—and, above all, cranial—features, that an anatomical notion of intelligence came to supplant an earlier, immaterialist, conception of mind. In the epigraph to his preface, Ramachandran cites the Victorian natural historian Edward Blyth: "There is not, within the wide range of philosophical inquiry, a subject more intensely interesting to all who thirst for knowledge, than the precise nature of that important mental superiority that elevates the human being above the brute."<sup>138</sup> But the assumption of this elevated status, this nature-surpassing capacity of human beings, is, we have argued, now much more likely to be articulated with reference to biology than theology. No longer based solely on Christian doctrine or Cartesian dualism, it is, then, the enduring colonial assumption that certain peoples are superior to others that remains embedded in the concept of an intelligence considered to be qualitatively different in beings that walk upright.

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137. Bourke, *What It Means to Be Human*, 5.

138. Ramachandran, *Tell-Tale Brain*, ix.

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