

# Plato Meets Polygeny: Louis Agassiz's Defense of Southern Medicine and the Anglo-American Race Debate

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## Abstract

This essay reviews Louis Agassiz's advocacy of polygeny (the theory of multiple creations or "many Adams") and how this was woven into States' Right Medicine and used as a "scientific" apologetic for slavery. It also examines Agassiz's and Richard Owen's Platonism, and how each was expressed very differently between the two. It further juxtaposes the anti-evolutionist stance of Agassiz and the evolutionary theory expressed in Darwin's monogenism (common descent) and shows that the rivalry between monogenist Darwinists and polygenists like Agassiz and Southern physicians really made little difference in the end. Only a very few contemporaries advocated for racial equality on a scientific basis; one of those was Platonist Richard Owen, whose structuralist approach to evolution was quite different from Darwin's functionalism. In the end Owen represents a road not taken in the discussion of science and race in Anglo-America.

Keywords: Louis Agassiz, Thomas Henry Huxley, Richard Owen, Platonism, Polygeny

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## Platonism-Turned -Polygeny

Alfred North Whitehead once said that all of Western philosophy consists of a "series of footnotes to Plato .... His personal endowments, his wide opportunities for experience at a great period of civilization, his inheritance of an intellectual tradition not yet stiffened by excessive systematization, have made his writings an inexhaustible mine of suggestion."<sup>2</sup> They certainly were for Louis Agassiz. In fact, the general popularity among Harvard students and faculty for this naturalist from Neuchâtel who arrived in 1846 to become a permanent—and indeed an illustrious—fixture at that institution is in many ways explained by the surprising but compelling connection between the erudite *bon vivant* and the classical Greek sage. Whether in their classroom

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I would like to thank emeritus professor of history and medical humanities at Southern Illinois University, John S. Haller Jr., for reading an earlier version of this essay, and the peer reviewers for their helpful comments and suggestions.

2. Alfred North Whitehead, *Process and Reality: An Essay in Cosmology*, corrected ed. (New York: The Free Press, 1979), 39.

seats or behind the lectern, Harvardians had fed themselves on a steady diet of Platonist writings from Plato's *Works*, Philo's *De Opificio Mundi* (20 BCE to 50 CE), Ralph Cudworth's *True Intellectual System of the World* (1678), and John Norris's *Essay towards the Theory of the Ideal or Intellectual World* (1701-04), just to name a few. So nearly everyone would have understood a man who carefully collected and compiled observational data, but whose "empiricism . . . was entirely subordinate to apprehension of divine ideas, which alone deserved to be called science."<sup>3</sup> This insight is essential in understanding Agassiz's approach to science, scripture, and special creation. It also, as we shall see, explains Agassiz's regrettable descent into polygenism, the idea of "multiple Adams" or plural origins of races. All of them might be considered "footnotes to Plato" as only Agassiz applied them. Moreover, these were the ingredients of his peculiar defense of Southern medicine.

David K. Nartoris explains that Georges Cuvier in France, Richard Owen in England, and Louis Agassiz all based their biology on forms. Although each are different in their examinations of the flora and fauna around them, all of them were philosophical spelunkers as naturalists, moving inexorably into Plato's cave to witness the Forms marching before them. In particular, Agassiz and Owen would play very different roles in the Anglo-American race debate. But Agassiz captures our immediate attention. Nartoris writes:

For Agassiz, every material eye is modeled after an ideal eye just as every material triangle is modeled after an ideal triangle. Furthermore, Agassiz taught that the student of nature has direct access to these ideas in the divine mind. Thus we see that when Louis Agassiz arrived at Harvard, he reinforced the synthesis of observation and intuition found in Harvard's official text-books, but added to them a Platonist creation story . . . and made God and creation more fully known.<sup>4</sup>

This essay will extend Nartoris's thesis further by arguing that Platonism explains much of Agassiz's subsequent career, and especially those views that would relegate the once famous paragon of science into shame and ultimate obscurity. At the very least, this is significant for historiographical reasons since there seems to be a tendency to see Agassiz as either a kind of religious heretic or an areligious secularist.<sup>5</sup> Although Jon H. Roberts seems more accurate in refurbishing Agassiz's reputation as a scientist by acknowledging his efforts to balance fact with theory, his argument that the Harvard zoologist "was determined to spread the gospel of empirical observation in natural history to the masses" that was "in accordance with the best tradition of tough-minded empiricism" is questionable.<sup>6</sup> As Nartoris points out, it really was not just empiricism that Agassiz was selling to his captivated audiences and students across America, it

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3. David K. Nartoris, "Louis Agassiz and the Platonist Story of Creation at Harvard, 1795-1846," *Journal of the History of Ideas* 66 (July 2005): 437-449, at 437.

4. Nartoris, "Louis Agassiz," 449.

5. Examples of the former include Edward Lurie, *Louise Agassiz: A Life in Science* (Chicago: The University of Chicago Press, 1960), 256; and Mary Pickard Winsor, "Louis Agassiz and the Species Question," in *Studies in Biology*, ed. William Coleman and Camille Limoges (Baltimore: The Johns Hopkins University Press, 1979): 89-117, at 111. Examples of the latter include Ronald Numbers, *The Creationists: The Evolution of Scientific Creationism* (New York: Alfred A. Knopf, 1992), 17; Louis Menand, *The Metaphysical Club: A Story of Ideas in America* (New York: Farrar, Straus and Giroux, 2001), 100; and Christoph Irmscher, *Louis Agassiz: Creator of American Science* (Boston: Houghton Mifflin, 2014), 29.

6. Jon H. Roberts, "Louis Agassiz on Scientific Method, Polygenism, and Transmutation: A Reassessment," *Almagest: International Journal for the History of Scientific Ideas* 2 (2011): 76-99, at 81 and 97.

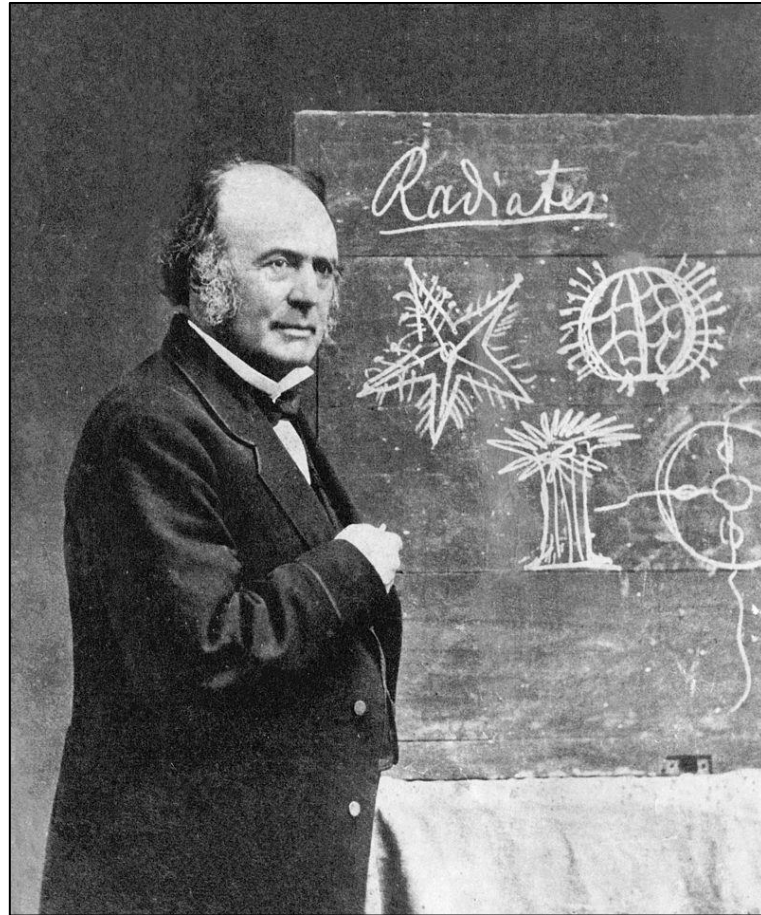


Fig. 1. Louis Agassiz shown here demonstrating Radiata in 1870, a now-defunct taxonomic rank established by Georges Cuvier in 1817. Agassiz was a popular ambassador for science among the masses, but his opposition to evolution and Darwin made him an outcast among his peers. His advocacy of racist polygeny makes him justifiably a pariah today. Photo courtesy of Wikimedia Commons.

was something much more; it was Platonism-turned-polygeny, a Macbethian gallimaufry of geology, biogeography, craniotomy, anthropology, taxonomy, and sociobiology mixed into a unique stock of biblical exegesis. For many this was merely a witch's cauldron full of politics and racial prejudice, but for others, especially Southerners at the brink of war seeking justifications for their peculiar institution, it was a thoroughly bewitching brew of "science" sanctified by scripture. Like Origen long before him, it took Agassiz who could speak like a Christian but think like a Greek to present this to the American people.<sup>7</sup>

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7. Arthur Herman focuses on the importance of the Church Fathers, especially Origen, in wedding neo-platonism with Christianity, calling Origen (after Plotinus's student Porphyry) a man who "lived like a Christian but thought like a Greek." See *The Cave and the Light: Plato Versus Aristotle, and the Struggle for the Soul of Western Civilization* (New York: Random House, 2013), 155. This fusion of old paganism with new theology established "a God who was 'beyond being,' eternal and uncreated. He was a God more powerful and pervasive than Plato's Demiurge but also more actively involved than Aristotle's Prime Mover. He had, after all, sent His son to earth as the *Logos*, a figure who finally reconciled the eternal split between spirit and matter, between divinity and mortality. The Platonized Christian God also made Plato's Forms seem more real, as the eternal patterns existing in the mind of God out of which he built, heaven, earth, and the rest of creation" (152). This was Agassiz's Christianity.

Besides amplifying Nartoris's compelling thesis, Agassiz will be situated within the highly charged religious, scientific, and political intersection of race in mid-nineteenth century Anglo-American discussions of ethnology and anthropology manifested in the polygenist vs. monogenist debate. Agassiz's misguided but impassioned arguments require contextualization with what is best called "the Darwin factor." Doing so will sharpen the focus on an important but often neglected aspect of this debate's influence on the direction that race would take in the years to come.

Putting these larger issues aside for the moment, the starting point for understanding Agassiz is to realize that, for him, the wonderfully complex world of life consisted not of transmuted species but of types and forms fixed by a creator. His job as a naturalist has been aptly described as an effort to observe with his rigorously trained eye and thus "keep track of the movements of God's mind throughout nature."<sup>8</sup> Far from being a deistic "secularizer" or, worse, one who "ignored" scripture altogether, Agassiz "charmed Americans with his deeply religious understanding of nature."<sup>9</sup> Put another way, Agassiz's empirical acuity as a taxonomist was merely a script for categories decreed from heaven. The taxonomic *scala naturæ* represented "ideas in the mind of God, a god who created all humans as one species but in several distinct and geographically separate acts of creation. One species but as many creations as races—this was Agassiz's philosophical anthropology."<sup>10</sup>

How was it that such an otherwise popular and urbane European gentleman-scholar came to such curious notions? Stephen Jay Gould explains that Agassiz's belief in geographical "centers of creation" and his extreme taxonomic splitting (the tendency to focus on small morphological distinctions to establish separate species) made him susceptible to polygenism.<sup>11</sup> This kind of typological perspective made Agassiz think in terms of "primeval organic forms" in which relationships between and among individuals was less important than their physical structures, in other words descent was subordinated to resemblance.<sup>12</sup> Thus, life was created at specific times and places in their respective typological forms again and again. Ethnologically, "races were made for places" such that each group was divinely created separately and distinctly as "a Negro Adam, a Mongolian Adam, and perhaps two or three more besides the Caucasian Adam," such that, in David N. Livingstone's words, "the question of Adam's identity and lineage, and the possibility that he might not have been alone, persistently reasserted itself."<sup>13</sup>

Edward Lurie is correct that Agassiz's special creationism "reaffirmed a central paradigm of pre-Darwinian biology."<sup>14</sup> But these scientific inclinations were intimately bound up with a literalist biblical hermeneutic; accordingly, he did not sidestep scripture but tackled it head on.

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8. Christoph Irmscher, *Louis Agassiz*, 98.

9. G. Blair Nelson, "Infidel Science! Polygenism in the Mid-Nineteenth-Century American Weekly Religious Press," (Ph.D. diss., University of Wisconsin, 2014), 93.

10. Nelson, "Infidel Science!," 130. It has sometimes been argued that Agassiz believed that each race was a separate species, but he insisted that his ideas on race had been mischaracterized. Agassiz always argued for equal rights even in the face of separate origins. Unfortunately, his polygenism turned "equality" into little more than a theoretical abstraction stripped of any real sociopolitical meaning. See Nelson, "Infidel Science!," 214.

11. Stephen Jay Gould, *The Mismeasure of Man*, rev. and expanded ed. (New York: W. W. Norton, 1996), 74-82.

12. Herbert H. Odom, "Generalizations on Race in Nineteenth-Century Physical Anthropology," *Isis* 58 (Spring 1967): 4-18, at 12.

13. David N. Livingstone, *Adam's Ancestors: Race, Religion and the Politics of Human Origins* (Baltimore: The Johns Hopkins University Press, 2008), 95, 135.

14. Lurie, *Agassiz*, 255.

Gould highlights Agassiz's articles in the *Christian Examiner* as "his major statement on human races."<sup>15</sup> This requires careful examination.

### Race and the Darwin Factor

It should be emphasized preliminarily that the issue of racial equality never divided neatly along monogenist and polygenist lines. Although Agassiz opposed slavery, he rejected racial equality, much as did the social reformer Charles Loring Brace. The fact that both men held staunchly opposing views on Darwinian evolution demonstrates that neither scientific position held the moral high ground regarding racial attitudes.<sup>16</sup> When Benjamin Disraeli declared, "Race implies difference, difference implies superiority, and superiority leads to predominance,"<sup>17</sup> he was stating a "commonsense" observation held by nearly all ethnologists, anthropologists, ministers, and their congregations. It was a dictum that fit as neatly with Manifest Destiny in America as it did with the British colonial Empire. More importantly, for those religiously inclined, it was a dictum that gave the appearance of divine sanction.

This is why the Bible could always be enlisted on behalf of either side. When the question was decided in favor of the monogenists, racism was able to carry on just as well as it had with the polygenists. Scientifically, Darwin recognized the designation of man's races from the standpoint of "rank" as "a matter of indifference" having little practical effect and predicted that "the dispute between the monogenists and polygenists will die an unobserved death" with the final acceptance of evolution.<sup>18</sup> The "science" of race during the nineteenth century really amounted to an intellectual justification for popular attitudes towards race more emotionally felt and viscerally expressed than objectively understood. Despite the fact that the monogenist/polygenist debate ended up largely as Darwin had forecast, the controversy dominated scientific and religious discussions in the stormy years leading up to the Civil War with Agassiz, America's leading authority, as the lightning rod of controversy, a controversy symptomatic of deeper issues at play. The problem, as Mark Noll observes, was a complex concatenation of issues involving a "literal hermeneutic, the failure of hermeneutical alternatives to gain cultural authority, and the exercise of deeply entrenched intuitive racism, as well as deep-seated convictions about the Bible as an authoritative religious book and slavery as an inherited socioeconomic relationship [stemming from it]."<sup>19</sup>

Christoph Irmscher opens his biography of Agassiz by contrasting his subject with the "caring" and "compassionate" Charles Darwin who was, citing Adrian Desmond and James Moore, motivated by the "cries of a tortured Brazilian slave" to develop a theory premised upon the oneness and unity of all humanity.<sup>20</sup> But even Darwin's science was built upon racial categories that could hardly be considered egalitarian. Indeed Desmond and Moore admit that Darwin was

15. Gould, *Mismeasure of Man*, 77.

16. Even as vocal a monogenist as Johann Friedrich Blumenbach openly inferred racial "degeneracy." It is important to recognize that attitudes of racial inferiority could be found as readily among monogenists as polygenists. See John S. Haller, Jr., *Outcasts from Evolution: Scientific Attitudes of Racial Inferiority, 1859-1900* (Carbondale: Southern Illinois University Press, 1995), 77-78; and Odom, "Generalizations on Race," 8.

17. Quoted in Odom, "Generalizations on Race," 9.

18. Charles Darwin, *Descent of Man and Selection in Relation to Sex* (1871; reprinted, New York: Barnes & Noble, 2004), 154.

19. Mark A. Noll, *America's God: From Jonathan Edwards to Abraham Lincoln* (Oxford: Oxford University Press, 2002), 421.

20. Irmscher, *Louis Agassiz*, 5.

fatalistic about it, believing that “the higher races of men, when high enough, will have spread & exterminated whole nations.”<sup>21</sup> In fact, they admit, “Darwin had ended up calibrating human ‘rank’ no differently than the rest of his society.”<sup>22</sup> It mattered very little whether one took an Adamite biblical or a rationalist secular interpretation of monogenism, whether the African race was a consequence of the curse of Cain or the result of the naturalistic degeneracy of “inferior physiological development,” these methodological differences brought about the same conclusions, namely, that “some races were inferior to others.”<sup>23</sup>

### **Agassiz’s Formula: Religion + Science + Platonism = States’ Rights Medicine**

It is within this rather toxic racial brew—eschewing simplistic notions of “good” monogenists versus “bad” polygenists—that the intricate and sometimes peculiar nexus of science, scripture, and Platonist special creation reached its apogee with Agassiz. He *did* make a careful biblical case for polygeny in three important essays, “The Geographical Distribution of Animals,” “The Diversity of Origin of the Human Species,” and “Contemplations of God in the Kosmos.” Here he presented an explicitly biblical argument for multiple creations. Although Agassiz admitted that the common ancestry of Adam and Eve derived from the “supposed authority of the Mosaic record” was widely accepted, he pointed out that this view was flawed. The law-like distribution of animals was neither the product of their voluntary migrations nor due to other physical causes, especially since these distributions seem located in deep time. Furthermore, there was nothing in the Mosaic account to suggest common descent. For Agassiz, the first chapter of Genesis discussed only how animals were preserved during the Noachian flood and it “relates chiefly to organized beings placed about Adam and Eve, and those which their progeny had domesticated, and which lived with them in closer connection.”<sup>24</sup> Furthermore, Agassiz insisted that Cain is represented as a wandering vagabond among foreign lands, as dwelling in the land of Nod, and taking his wife there (Gen. 4:14-17). Whence these people of Nod? Agassiz argued that the view of humans descending from a single pair—Adam and Eve—was unbiblical and unscientific. Admitting his “profound veneration for the Sacred Scriptures,” Agassiz insisted that the view of all humanity deriving from Adam and Eve was never stated nor even intended by Moses.<sup>25</sup>

In the second essay, Agassiz explains that *Homo sapiens* should be considered one unified human race, all of them had a common moral and intellectual make-up bestowed upon them by their Creator, but this did not mean a common biological origin *or* racial equality. Scripture dealt with the white race as it relates particularly to the Jews and it was not its intent to treat of the Chinese, the Malays, the American Indians, etc. “Whence did these nations come?,” Agassiz asks. They are, according to him, not connected to the line of Adam and Eve, having as he concluded, “an independent origin.” There is surely no conflict with Genesis because “We have no narrative

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21. Quoted in Adrian Desmond and James Moore, *Darwin’s Sacred Cause: How a Hatred of Slavery Shaped Darwin’s Views on Human Evolution* (Boston: Houghton Mifflin, 2009), 318.

22. Desmond and Moore, *Darwin’s Sacred Cause*, 318.

23. John S. Haller Jr. gives a detailed analysis of the monogenists and polygenists in “The Species Problem: Nineteenth-Century Concepts of Racial Inferiority in the Origin of Man Controversy,” *American Anthropologist* 72 (December 1970): 1319-1329.

24. Louis Agassiz, “The Geographical Distribution of Animals,” *The Christian Examiner* 48 (March 1850): 181-204, at 184.

25. Agassiz, “Geographical Distributions,” 184-185.

of the manner in which these parts of the world were peopled.”<sup>26</sup> Nowhere did Genesis even hint at a common origin of all peoples. Moreover, these distinct races are fixed. He asks rhetorically, “Have we not, on the contrary, the distinct assertion that the Ethiopian cannot change his skin, nor the leopard his spots?”<sup>27</sup>

This line of argument, of course, sat well with Southern apologists, and it had the added lure of scientific authority behind it. In medicine it took on particular “states’ rights” tones. For most physicians of the South, blacks were inherently inferior to whites. By intellectual capacity as well as physiologically blacks were allegedly better off under the paternalistic care of their wise and beneficent owners. By the time Agassiz arrived in America, Alabama physician Josiah Clark Nott was already arguing that blacks possessed less stamina than whites, that their lives were generally shorter, and that their intellectual prowess was measurably smaller than their Caucasian counterparts—indeed craniometric studies (the idea that you could calculate mental ability by measuring the cubic inches of brain space inside of skulls)—supposedly “proved” it. Moreover, Nott argued for a so-called “multiple Adams” theory of biblical origins in which blacks descended from an entirely separate line of ancestors. Known as polygeny, this theory relegated the inferiority of blacks to a separate species and this made their peculiarities, according to Nott, “an immutable law of nature.” Similarly, Samuel Cartwright, a physician from Natchez, Mississippi, even “identified” two diseases unique to blacks: *drapetomania*, a mental disorder that compelled slaves to run away; and *Æthiopsis*, a clinical disposition among slaves towards rascality. While this certainly seems like utter nonsense by current standards, Cartwright was taken seriously by his peers and was even made chair of the Louisiana Medical Association when he moved to New Orleans.<sup>28</sup>

This was at least partly facilitated by the tendency medicine had toward dogmatic rationalism. This could be found in the construction of elaborate theories and intricate nosologies of diseases. Where empirical data was presented, it was always subservient to an *a priori* theory. There were extreme empiricists during this period like Samuel Jackson and Elisha Bartlett who rejected all theorizing and relied on “trial-and-error gropings,” but by and large mid-nineteenth-century medicine was still dominated by rationalists. It would not be until 1875 with the rise and validation of medical bacteriology that scientific empiricism—the verification of observations and confirmation of hypotheses through controlled experimentation—would replace the crude empiricists and dogmatic rationalists.<sup>29</sup> Polygeny was made for the rationalist approach in medicine, particularly the Platonism of Agassiz. But he was not the only one. Although Josiah Clark Nott had little interest in religion, other aspects fit neatly within that Platonist strain. Paul A. Erikson has keenly observed, “Some of the key features of his [Nott’s] medical anthropology include physiological vitalism, his racial typology and idea of permanence of racial types, his disbelief that transformed races acclimatize or are transformed by nature, and his lack of scientific experimentation. All of these imply a kind of Platonic essentialism, in which life is separate from

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26. Louis Agassiz, “The Diversity of Origin of the Human Species,” *The Christian Examiner* 49 (July 1850): 110-145, at 134-135.

27. Agassiz, “Diversity of Origin,” 134-135.

28. See “States’ Rights Medicine,” in *Science and Medicine*, vol. 22 of *The New Encyclopedia of Southern Culture*, edited James G. Thomas, Jr. and Charles Reagan Wilson (Chapel Hill: The University of North Carolina Press, 2012), 120-123.

29. For a complete discussion, see Richard H. Shyrock’s classic essay “Empiricism versus Rationalism in American Medicine, 1650-1950,” *Proceedings of the American Antiquarian Society* 79 (April 1969): 99-150.

nature and some kinds of organisms are separate from others.”<sup>30</sup> Indeed for many polygenists Plato’s cave only relayed a partial truth, the other was his myth told to Glaucon in *The Republic* that citizens were “framed by God” out of metals of the earth: commanders of gold, their assistants of silver, and the followers—husbandmen and craftsmen—of brass and iron. These were immutable. This “noble lie” (told to maintain order) became a kind of biological determinism that in mid-nineteenth-century Anglo-America was “confirmed” not in earthly metals but in cranial metrics in which the largest brain “wins” the right to rule.<sup>31</sup> Whether one was a Platonist or not measuring skulls was an almost universally approved way of “scientifically” ranking humankind, and nearly *everyone* assumed a hierarchy of some kind. In the South, of course, rank mattered because it rationalized its peculiar institution and even in defeat “explained” its *Herrenvolk* democracy.

Acceptance of these self-serving ideas was found among the most progressive members of the Southern medical community. Erasmus Darwin Fenner, for example, helped establish several medical journals in the Crescent City and was instrumental in establishing the New Orleans School of Medicine, described by John Harley Warner as home to the “most aggressive body of proselytizers for a plan of education built around a recognition of the South’s medical distinctiveness.” For Fenner, he left no doubt of his position in the matter; echoing Agassiz, he declared: “If this be sectional medicine I cannot help it. It was not made so by me, but by Nature.”<sup>32</sup>

While most Southerners applauded this apologetic for slavery, some remained unconvinced and openly opposed these sweeping speculations. Presbyterian minister W. H. Moore of Richmond, Virginia, asked, “We would be glad to know how he [Agassiz] has discovered that Adam and Noah belonged to the white race at all.”<sup>33</sup> In the Southern Fire-Eaters’ epicenter of Charleston, South Carolina, the Palmetto State divines John Bachman and Thomas Smyth fought a lonely crusade against Agassiz’s scriptural libertarianism. When Agassiz delighted Josiah Clark Nott by announcing his full support of polygenism at the Charleston meeting of the American Association for the Advancement of Science in March 1850, Bachman, who chaired the session in which Nott’s paper was read, along with Smyth in attendance, must have felt like witnesses to a declaration of war. At least for Bachman and Smyth, the ignition point in Charleston had the benefit of being the location of three major southern religious weeklies, giving the Literary Society’s anti-polygenist minority a mouthpiece and outlet for their objections.<sup>34</sup>

While the exegetical debate raged, Agassiz added a third essay in *The Christian Examiner*, “Contemplations of God in the Kosmos,” defending his polygenist position. This interesting article is his most overtly sustained statement of Platonism applied to the life sciences.<sup>35</sup> Here he argues that if animal creation represents the specific thoughts of a personal and intelligent God, then all suggestion of development from natural law is preemptively ruled out. For Agassiz, nature was inherently teleological, the manifestation of an orderly, purposeful plan. A half dozen times in this relatively brief article, Agassiz refers to life as “forms.” He writes that these successive forms

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30. Paul A. Erickson, “The Anthropology of Josiah Clark Nott,” *Kroeber Anthropology Papers* 65/66 (1986): 103-120, at 115.

31. See Stephen Jay Gould, *The Mismeasure of Man*, 51-52.

32. Quoted in John Harley Warner, “A Southern Medical Reform: The Meaning of the Antebellum Argument for Southern Medical Education,” in *Science and Medicine in the Old South*, eds. Ronald L. Numbers and Todd L. Savitt (Baton Rouge: Louisiana State University Press, 1989), 215.

33. Quoted in Livingstone, *Adam’s Ancestors*, 96.

34. Nelson, “Infidel Science!,” 98.

35. Imscher recognizes the importance of this essay, even if Agassiz was “putting the theoretic cart before the horse.” See his *Louis Agassiz*, 238-239.



“represent in every way modifications of the same thoughts. And as surely may we conclude that this plan was framed prior to the beginning of creation, and was matured in all its parts, before the actual production of any special form.”<sup>36</sup> It is hard to imagine a more explicit expression of Platonist science than this. This was Agassiz’s attempt to harmonize the polygenesis of humankind with a pre-Adamist Genesis story.

Agassiz’s polygenist views are clearly odd from a modern perspective, and present-day scholars have found it difficult to place his views within conventional categories. For Agassiz, ethnology was a very public affair calling upon what he believed to be the most diligent science and earnest scriptural analysis. No “secularizing” or privatizing of religion was intended, and far from going “against the teachings of revealed religion” and certainly not “ignoring the biblical record” nor in any sense envisioning a “deistic” god (examples cited in footnote 4), Agassiz proceeded from his own reading of scripture—a reading shared by others, especially Southern apologists—to reach his own conclusions. For him, the language of Genesis demonstrated that the offspring of Adam and Eve (in this case Cain) did not proceed alone among the human population, and the “land of Nod” was *prima facie* evidence of “multiple Adams.” Of course from an exegetical standpoint this view is readily refuted as a prolepsis, a figure of speech referring to a place Cain peopled *after* he got there; initially it was merely an empty land of wandering.<sup>37</sup> Today it is more readily assumed that Adam and Eve are the spiritual ancestors of all humankind, viewing God’s image—*Imago Dei*—as his spiritual imprimatur of being human—*Homo Divinus*—and not necessarily a mundane or reductionist expression merely of biological descent.<sup>38</sup>

While polygeny was never a majority view among the clergy, even the famed theologian Alfred Edersheim, writing in 1876, left the question open, stating that “the Bible does not profess to give a detailed history of the world, nor even a complete biography of those persons whom it introduces. Its object is to set before us a *history of the kingdom of God*, and it only describes such persons and events as is necessary for that purpose.”<sup>39</sup> Agassiz would have agreed. Lurie emphasizes the “unorthodox” character of his subject’s biblical position,<sup>40</sup> but Agassiz’s lectures throughout the South were well received. For example, Edward J. Purse’s Savannah newspaper praised the Harvard professor. “We would,” he exclaimed, “advise all of our friends to attend these lectures: to Prof. Agassiz nature seems to have opened her volumes and disclosed the most precious secrets, not only valuable to men of science, but valuable to every one who wishes to trace the beautiful harmony of creation, and to ‘look from Nature up to Nature’s God’.”<sup>41</sup> Likewise, his Charleston lectures on the polygenic origins of the races between 1847 and 1853 were greeted enthusiastically by a Southern clergy committed to what has been called a thoroughly scriptural

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36. Louis Agassiz, “Contemplations of God in the Kosmos,” *The Christian Examiner* 50 (January 1851): 1-17, at 7.

37. See Eric Lyons, “The Land of Nod,” Apologetics Press, 2005. Accessed July 25, 2019. <https://apologeticspress.org/apcontent.aspx?category=6&article=696>.

38. See, for example, R. J. Berry, “Origins, Human Beings,” in *New Dictionary of Christian Apologetics*, eds. W. C. Campbell-Jack and Gavin McGrath (Downers Grove, IL: Inter-Varsity Press, 2006), 521. For an expansion of this approach to human origins, see geneticist R. J. Berry’s “Biology Since Darwin,” in *Darwinism and Natural Theology: Evolving Perspectives*, ed. Andrew Robinson (Cambridge: Cambridge Scholars Publishing, 2012), 12-38.

39. Alfred Edersheim, *Old Testament Bible History*, 7 vols. in 1 (1876-1887; reprinted, Grand Rapids, MI: Eerdmans, 1982) 1: 23-24.

40. Lurie, *Agassiz*, 259.

41. *A Friend of the Family* (August 6, 1850). Georgia Historic Newspapers. Digital Library of Georgia. Accessed July 27, 2019, <https://gahistoricnewspapers.galileo.usg.edu/lccn/sn89053686/1850-04-06/ed-1/seq-3/>.

“doxological science”—the systematic investigation of the natural world as a form of piety.<sup>42</sup> Orthodoxy is in the eye of the beholder. In fact, Agassiz argued rather counterintuitively but strenuously that the monogenist view threatened the orthodoxy of God’s providence by relying upon naturalistic mechanisms in the creation of racial diversity. Perhaps unintentionally, these monogenist Christians, according to Agassiz, substituted physical processes for the acts of God, separating nature from its divine creator.<sup>43</sup> In short, Agassiz leveled two charges against the monogenists: first, their idea of common descent lacked empirical support in nature; and second, they presented a diminished and compromised view of God and were, therefore, purveyors of heterodox doctrine. Agassiz’s polygenist views were obviously rooted in his own set of exegetical interpretations that were important to him *and* many others as a defense of Christian orthodoxy. Agassiz may not have been a *sola scriptura* fundamentalist, but neither was he unconcerned with relating the biblical account of creation with his own biological theories. Agassiz’s Christian polygenism may be accurately characterized as “a new threat to infidelity, one with a new character in which religiously corrosive ideas came disguised as orthodoxy.”<sup>44</sup>

So long as special creationism is defined as the empirical and exegetical support of the Genesis creation story marked by divinely established fixed species not limited to questions of the earth’s age, Agassiz remains best viewed as fitting this description in the ordinary sense of the term. Lurie is correct in saying that since biological development was deemed false, “special creation remained the only valid interpretation,” but he is wrong to say that this interpretation for Agassiz was to be “examined on the grounds of science, and science alone.”<sup>45</sup> His was a Genesis-driven idea about *how* God—an active, non-deistic god—established life on earth, verified by empirical evidence in the biological and geological records, but more significantly seen through a Platonist’s eye.

Agassiz’s Platonist idealism has been noted by his first modern biographer.<sup>46</sup> In 1973 Loren Eiseley called him “a Platonist at heart.”<sup>47</sup> And more recently Ron Amundson admits Agassiz as “the only genuinely Platonic species fixist.”<sup>48</sup> These are not vague speculations. The Rev. Thomas Hill, a longtime friend of the Harvard naturalist, describes an evening at his home in October 1848 when he and Agassiz were subjected to a long harangue against Plato’s innate ideas by an unnamed guest. Feeling satisfied that he had made his points and covered all possible objections, the guest awaited the anticipated approbation only to be greeted with Agassiz’s unimpressed reply, “Nevertheless Plato has been right.”<sup>49</sup> No doubt the evening ended on a rather quiet, awkward note.

Platonism, or perhaps better termed neoplatonism, explains much of Agassiz’s polygenism. One need only go back to his first encounter with American blacks. While in Philadelphia Agassiz described to his mother “the painful impression that I received” when served by “domestics” who were “men of color.” Describing their physical appearance in the most uncomplimentary of terms, they inspired in him a feeling “contrary to all our ideas about our confraternity of the human type

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42. E. Brooks Holifield, “Science and Theology in the Old South,” in *Science and Medicine in the Old South*, 136, 139.

43. Agassiz, “Diversity,” 134.

44. Nelson, “Infidel Science!,” 95.

45. Lurie, *Agassiz*, 263.

46. Lurie, *Agassiz*, 283.

47. Loren Eiseley, “Thoreau’s Vision of the Natural World,” in *Loren Eiseley: Collected Essays on Evolution, Nature, and the Cosmos*, edited by William Cronan, 2 vols. (New York: The Library of America, 2016) 2: 390.

48. Ron Amundson, *The Changing Role of the Embryo in Evolutionary Thought: Roots of Evo-Devo* (Cambridge: Cambridge University Press, 2007), 81.

49. Quoted in Thomas Hill, *The Life is More Than Meat: A Sermon* (Portland: Stephen Berry, 1874), 14.

and the unique origin of our species .... It is impossible for me to repress the feeling that they are not of the same blood as us.”<sup>50</sup> Here Agassiz seems to see not individuals but rather “types” of fixed biological forms. He does not explicitly indicate a separate species, but he comes close. Agassiz treats them as he would one of his specimens in a jar. Later, in his ill-considered contributed essay to the polygenists’ magnum opus, Josiah Nott and George Glidden’s *Types of Mankind*, he makes the startling revelation that “the differences existing between races of men are of the same kind as the differences observed between the different families, genera, and species of monkeys or other animals; and that these different species of animals differ in the same degree one from the other as the races of men,” some even more so. He called this “one of the most important and unexpected features in the Natural History of Mankind.”<sup>51</sup> Agassiz expressed this as a matter of religious and scientific faith, and most Southern clergy and physicians agreed.

### Darwin and Agassiz: Strange Bedfellows

This is hardly different from Darwin’s own human/animal continuity. For Darwin, there was “no fundamental difference between man and the higher mammals in their mental faculties.” Darwin explained that this difference “is one of degree not kind.”<sup>52</sup> In fact, both Agassiz and Darwin viewed race through the lens of craniometry, the gold standard for measuring comparative racial intelligence. Agassiz found his empirical data to support racial hierarchies in Samuel George Morton’s catalog of cranial measurements. Morton was a confirmed polygenist, and the frequent visits between him and Agassiz while the latter was in Philadelphia thoroughly converted the newly arrived Swiss immigrant. Morton’s collection of skulls “proved” a clear gradation of races, according to Agassiz, never mind that his methods were highly selective and full of confirmation bias. Morton’s large and elegantly printed volumes, *Crania Americana* (1839) and *Crania Aegyptiaca* (1844), made him the leader of the so-called “American School” (i.e. polygenist school) of ethnography with Agassiz his enthusiastic disciple.<sup>53</sup> Darwin was nearly as smitten with craniometry as was Agassiz. Strangely conflating nations and races, he cites craniometric data from Paul Broca and J. Barnard Davis approvingly, declaring, “The belief that there exists in man some close relation between the size of the brain and the development of the intellectual faculties is supported by the comparison of skulls of savage and civilized races, of ancient and modern people, and by the analogy of the whole vertebrate series.” Darwin confidently reported, it has been “*proved* [emphasis added], by many careful measurements, that the mean internal capacity of the skulls of Europeans is 92.3 cubic inches; in Americans 87.5; in Asiatics 87.1; and in Australians only 81.9 cubic inches.”<sup>54</sup> The reader can then rank his ethnic groups accordingly. No wonder that by 1866 even Nott could reconcile his racial ideas with Darwin’s monogenism, and,

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50. The complete quote is given in “Louis Agassiz on the Negro Race,” *The Journal of Blacks in Higher Education* 63. (Spring 2009): 20.

51. Louis Agassiz, “Sketch of the Natural Provinces of the Animal World and Their Relation to the Different Types of Man,” in Samuel George Morton and J. C. Nott, *Types of Mankind, or, Ethnological Researches, based upon the Ancient Monuments, Paintings, Sculptures, and Crania of Races*, 2<sup>nd</sup> ed. (Philadelphia: Lippincott, Grambo, 1854), lxxiv-lxxv. Also discussed in Irmscher, *Louis Agassiz*, 240-241.

52. Darwin, *Descent*, 53, 105.

53. Louis Menand, “Morton, Agassiz, and the Origins of Scientific Racism in the United States,” *The Journal of Blacks in Higher Education* 34 (Winter 2001-2002): 110-113. Menand gives a revealing description of Morton’s statistical and data-driven errors, such as arbitrarily skewing his quantitative measures to confirm *a priori* qualitative judgments, juggling his skulls between various racial categories to achieve expected (i.e. desired) average means, and similar questionable practices.

54. Darwin, *Descent*, 42.

in the end, “most of the hierarchical assumptions of the polygenists could be justified just as well, if not better, in Darwinian terms.”<sup>55</sup>

Viewed from this perspective, Agassiz’s polygenism was just one side of the polygenist/monogenist two-sided common coin of nineteenth-century racist anthropology and biblical exegesis. While practically speaking there was little difference between the two, philosophically there were major differences. Darwin saw human/animal continuity as biologically rooted in evolutionary development; Agassiz’s human/animal continuity was rooted in an idealist concept of forms based in the fixity of distinct races. In other words, for Agassiz, the “higher” and “lower” races were not part of a developmental process but were there from the beginning, instantiated in creation by the mind of God. Irmscher seems to subscribe to the thesis of Desmond and Moore that Darwin’s “unity of the human species” replaced Agassiz’s harsher polygenist racism with a “superficially more benign kind based on aesthetic preference.”<sup>56</sup> But this ignores Darwin’s own infatuation with craniometry; this is not “aesthetics” it is misplaced empiricism.<sup>57</sup> Irmscher’s caricature of Darwin’s racial views forgets that his most fundamental concept was that even monogenism is hierarchical in its racial divisions, and hierarchies imply rank, rank implies difference, difference implies struggle, and struggle implies winners and losers. “Remember what risks the nations of Europe ran, not so many centuries ago of being overwhelmed by the Turks,” Darwin wrote to William Graham on July 3, 1881, “and how ridiculous such an idea now is. The more civilised so-called Caucasian races have beaten the Turkish hollow in the struggle for existence. Looking to the world at no very distant date, what an endless number of the lower races will have been eliminated by the higher civilised races throughout the world.”<sup>58</sup>

Of course, Darwin was not expressing a unique opinion. His own “Bulldog” defender, Thomas Henry Huxley felt that the *Origin of Species* effectively ended the monogenist/ polygenist debate by nullifying the premises that divided them.<sup>59</sup> Essentially believing that this anthropological debate no longer mattered, he expressed doubt that the newly freed African Americans could survive on their own without the paternalistic protections of their masters. Huxley declared unapologetically that “no rational man, cognizant of the facts, believes that the average negro is the equal, still less the superior, of the average white man.”<sup>60</sup> John Tyndall was no better. In his famous Belfast Address in 1874 before the annual meeting of the British Association for the Advancement of Science, Tyndall spoke of human development in explicitly racial terms: “The period necessary for completion varies with the race and with the individual. As a round shot outstrips a rifled one on quitting the muzzle of the gun, so the lower race in childhood may outstrip

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55. On Nott, see Haller, *Outcasts*, 80. On monogenist/polygenist racism, see George M. Frederickson, *The Black Image in the White Mind: The Debate on Afro-American Character and Destiny, 1817–1914* (New York: Harper & Row, 1971), 235.

56. Irmscher, *Louis Agassiz*, 266.

57. A similar misplaced apologetic is offered in Adam Gopnik’s *Angels and Ages: A Short Book about Darwin, Lincoln, and Modern Life* (New York: Alfred A. Knopf, 2009). Gopnik capitalizes on Lincoln and Darwin’s shared birthdays of February 12, 1809, to claim both men as champions of emancipation and racial equality under a new evolutionary world order. In reality it is just another Whiggish variation on the relentless productions of the Darwin industry.

58. Darwin Correspondence Project, “Letter no. 13230.” Accessed August 21, 2019.

<http://www.darwinproject.ac.uk/DCP-LETT-13230>. According to Gopnik, *Angels and Ages*, 159: “Darwin’s great and repeated theme was not the short-term success of certain races, but the permanent non-existence of any.” But as Darwin’s letter demonstrates it inevitably came at the cost of racial extermination.

59. Haller, “The Species Problem,” 1326.

60. Thomas Henry Huxley, “Emancipation—Black and White,” in *Lay Sermons, Addresses, and Reviews* (London: Macmillan, 1887), 17. The essay originally appeared in the London periodical, *The Reader*, May 20, 1865.

the higher. But the higher eventually overtakes the lower, and surpasses it in range.” A racialized monogenism was easily translated for Tyndall, like Darwin, in cranial terms. After all, Tyndall argued, “the European inherits from twenty to thirty cubic inches more of brain than the Papuan. Thus it happens that faculties, as of music, which scarcely exist in some inferior races, become congenital in superior ones.” From such crude progenitors “arise at length our Newtons and Shakespeares.”<sup>61</sup> For a Darwinian monogenist like Tyndall, the “superior” could easily be derived from the “inferior”—it was the very essence of evolutionary progress—and the extant variability in the races was proof of that common descent.

The mistakes made by both monogenists and polygenists are really ontological at heart. Agassiz’s Platonism caused him to force his science through an “upper-storied” ontological realm of idealist/rationalism, while Darwin’s positivism relegated his science into a “lower-storied” ontology of reductionist/empiricism.<sup>62</sup> Nothing could have been further apart. If Agassiz’s three articles in *The Christian Examiner* represented his Platonist statement on behalf of special creation, then surely Neal C. Gillespie is right in calling “*Origin* . . . a manifesto for positivist science” that was “profoundly incompatible with special creation.”<sup>63</sup> Agassiz’s science made nature a dream of God with empirical window dressing; Darwin made science a uniformity of laws based on chance and necessity in a *closed system*. That closed system made the “lower story” (facts) autonomous in a way that it was bound to devour the upper (values).<sup>64</sup> In fact, Darwin’s positivist privileging of “facts” as objectively verifiable and “values” as merely subjective impressions or feelings launched a distinction that has been extremely problematic ever since.<sup>65</sup> This will be further explored in the next section.

The closing off of the rational from the empirical was effected, as Jon Roberts so convincingly argues, through making *methodological naturalism* the norm of scientific discourse.<sup>66</sup> Indeed, methodological naturalism is the *modus operandi* of positivism. Agassiz refused to constrain his observations through this *a priori* assumption. In his defense it should be noted that Darwin’s strong methodological naturalism, the insistence that naturalism is the only valid source of knowledge about the natural world, is an untenable philosophical position.<sup>67</sup> Its limitations are revealed in its inability to effectively address the anthropic principle in cosmology; the complex anthropological, psychological, and sociological nature of human beings; and statements of moral

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61. John Tyndall, “Belfast Address,” *The Victorian Web*. Accessed August 23, 2019. [http://www.victorianweb.org/science/science\\_texts/belfast.html](http://www.victorianweb.org/science/science_texts/belfast.html).

62. Neal C. Gillespie correctly locates Darwin’s science in positivism, defined as “that attitude toward nature that became common among men of science . . . which saw the purpose of science as the discovery of laws which reflected the operation of purely natural or ‘secondary’ causes.” Its materialism rejected all other supernatural causes or teleological factors. See Gillespie’s *Charles Darwin and the Problem of Creation* (Chicago: The University of Chicago Press, 1979), 8, 41-47. The influence of Auguste Comte, founder of positivism, early on in Darwin’s career has long been established. See Silvan S. Schweber, “The Young Darwin,” *Journal of the History of Biology* 12 (Spring 1979): 175-192; and Frank Burch Brown, “The Evolution of Darwin’s Theism,” *Journal of the History of Biology* 19 (Spring 1986): 1-45.

63. Gillespie, *Charles Darwin*, 66.

64. This is discussed at length in Francis A. Schaeffer, *Escape from Reason* (Downers Grove, IL: InterVarsity Press, 1968), 31, 36-38.

65. Hilary Putnam subjects the fact/value distinction to devastating critique in *The Collapse of the Fact/Value Dichotomy and Other Essays* (Cambridge, MA: Harvard University Press, 2004).

66. Roberts, “Louis Agassiz on Scientific Method,” 96.

67. Stephen Dilley argues that methodological naturalism was the central component of Darwin’s program to discredit special creationism. See his “The Evolution of Methodological Naturalism in the *Origin of Species*,” *HOPOS: The Journal of the International Society for the History of Philosophy of Science* 3 (Spring 2013): 20-58.

value, to name a few.<sup>68</sup> There is, in fact, ample literature to question the warrant for methodological naturalism.<sup>69</sup> From this standpoint Roberts is absolutely correct when he says that Agassiz's "resistance to methodological naturalism does not indicate that he was one whit more guilty of dogmatism than those who embraced the new norm."<sup>70</sup> There was, in fact, no greater dogmatism than the positivistic rejection of metaphysics and philosophy as meaningless, and it is still very much with us in the works of Stephen Hawking, Lawrence Krause, Chad Orzel, Neil deGrasse Tyson, Lewis Wolpert, and others. The chilling reductionist effect this has had in turning science into scientism has prompted one scholar to call for the replacement of positivism with the "amicable marriage of the rationalist and empiricist elements of metaphysics."<sup>71</sup> Agassiz's problem resided less with his philosophy of science and more with his misguided apologetic and empirical demonstrations of it.

Agassiz's passion to harmonize his science and religion was a laudable goal as enduring through the years as physics and faith from Isaac Newton to John Polkinghorne. Unfortunately, Agassiz's special creation failed to be scientifically durable or theologically sound. He spent the end of his life still popular among the masses even as his colleagues ignored him as irrelevant. Agassiz became a lamentable figure lost in the murky shadows of his own Platonist forms.

Given his odious connection to polygenism's ugly past, it has become fashionable today to either ignore this once famous Harvard naturalist or treat him like a pariah of the past. In the American historical imagination he marches across the stage somewhere between a criminal and a clown. To solidify this unfortunate image, his latest biographer has even reproduced the tragicomic picture of Agassiz's statue toppled with his head buried in the pavement in front of Stanford University's Zoology building following the 1906 San Francisco earthquake.<sup>72</sup> The image is darkly comic and the symbolism an unmistakable reminder of Agassiz's ignoble fall from grace.

Harvard's leading naturalist *did* make important scientific contributions to science. His Museum of Comparative Zoology remains a lasting achievement, and his Ice Age theory presented in *Études sur les Glaciers* (1840) and later put together comprehensively in his *Geological Sketches* (1866) is the foundation of glacial geology today. Yet the stench surrounding Agassiz's polygeny takes precedence over all. His was a peculiar defense of a peculiar institution, based upon its own peculiar formula comprising equal parts of religion, science, and Platonism. It was an ugly accretion of high-toned concepts yielding a sum of inglorious bigotry. But if this essay has shown anything it is that a very different formula of positivistic reductionism could produce

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68. For details, see Ernan McMullin, "Types of Methodological Naturalism," in *The Nature of Nature: Examining the Role of Naturalism in Science*, ed. Bruce L. Gordon and William A. Dembski (Wilmington, DE: ISI Books, 2011), 82-94, esp. 83-86.

69. See, for example, Alvin Plantinga's "Methodological Naturalism?," *The Philosophy Page*, from *Perspectives on Science and Christian Faith* 49 (September 1997): 143-154. Accessed August 22, 2019. <https://www.asa3.org/ASA/PSCF/1997/PSCF9-97Plantinga.html.ori>; and his *Where the Conflict Really Lies: Science, Religion, and Naturalism* (Oxford: Oxford University Press, 2011), 168-174, 177-178. See also, Steve Clarke, "Naturalism, Science, and the Supernatural," *Sophia* 48 (2009): 127-142; Steven Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design* (New York: HarperCollins, 2009), 436-437; Jim Bogen, "'Saving the phenomena' and Saving the Phenomena," *Synthese* 182 (2011): 7-22; William Curtis Holtzen, "Is There Anything Natural about Methodological Naturalism? An Assessment of Plantinga's Critics," in *Connecting Faith and Science*, ed. Matthew Nelson Hill and William Curtis Holtzen (Claremont, CA: Claremont Press, 2017), 31-57; and Robert A. Larmer, "The Many Inadequate Justifications of Methodological Naturalism," *Organon F* 26 (2019): 5-24.

70. Roberts, "Louis Agassiz on Scientific Method," 97.

71. Brian G. Henning, "Recovering the Adventure of Ideas: In Defense of Metaphysics as Revisable, Systematic, Speculative Philosophy," *The Journal of Speculative Philosophy* 29 (2015): 437-456, at 449.

72. Irmscher, *Louis Agassiz*, 344.

essentially the same results. Agassiz and Darwin may have been at loggerheads over evolution, but they could express racial views uncomfortably similar. It is interesting that both held to a biology that saw significant continuities between man and beast. This raises an interesting and important question: given the fact that naturalists as fundamentally different as Agassiz and Darwin could hold such common racial views, can it be concluded that nineteenth-century biology was ineluctably racist?

Not necessarily. An intriguing example is Darwin's archrival Richard Owen, curator of the Hunterian Museum of the Royal College of Surgeons. In 1858 Owen argued that humans deserve classification as subclass Archencephala ("ruling brain"). He did this on the basis of the absence of the hippocampus (a lobe in the brain) in apes, a structure allegedly unique to humans. Owen was openly—and rather viciously—challenged by Darwin's vocal defender, Thomas Henry Huxley. When Huxley demonstrated the presence of the hippocampus in an ape brain, Owen was seemingly devastated and history would record Huxley—and science—victorious. More germane to our purposes here, this and supposedly other brain commonalities were used by Huxley to demonstrate that blacks represented an intermediate hierarchical level between Caucasians and apes.

But Christopher Cosans has convincingly challenged this Whiggish account. For Owen the hippocampus of the ape was rudimentary, qualitatively different, and hardly the most significant feature of the human versus the ape brain, instead emphasizing the strikingly larger cerebral hemispheres of the human brain. Cosans insists Owen "yielded no high ground to Huxley," and he continued to argue that "the human brain expresses a unique developmental pattern."<sup>73</sup> Although Owen's approach was empirical and inductive, his Platonism made him take a decidedly more holistic approach than Huxley.<sup>74</sup> More importantly, Owen used these brain distinctions to demonstrate (in agreement with the German anatomist and physiologist Frederick Tiedemann, a Foreign Fellow of the Royal Society of London and an Honorary Fellow of the Royal Society of Edinburgh) that careful anatomical analysis demonstrated few important differences between *any* of the human races. Claims of racial hierarchies, for Owen, were unjust and unscientific. He bemoaned the "unholy traffic" in which greedy Europeans sacrificed "thousands of unoffending Negroes" at the idolatrous "shrine of Mammon."<sup>75</sup> For Owen, blurring the human-ape distinction would have serious implications for racial justice.

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73. Christopher E. Cosans, *Owen's Ape & Darwin's Bulldog: Beyond Darwinism and Creationism* (Bloomington: Indiana University Press, 2009), 109-110.

74. According to Nicolaas A. Rupke, "Richard Owen's Vertebrate Archetype," *Isis*, 84, no. 2 (June 1993): 231-251, Owen's ideas were really Aristotelian not Platonist. But Rupke is probably putting too fine a point on a philosophical technicality that Owen himself did not even appreciate. Owen stated, "I have used ... the word 'Nature' in the sense of the German '*Bedeutung*,' as signifying that essential character of a part which belongs to it in its relation to a predetermined pattern, answering to the 'idea' of the Archetypal World in the Platonic cosmogony, which archetype or primal pattern is the basis supporting all the modifications of such part for special powers and action in all animals possessing it, and to which archetypal form we come, in the course of all our comparison of those modifications, finally to reduce their subject." See his *On the Nature of Limbs* (London: John Van Voorst, 1849), 2-3. For more on Owen's Platonism, see Adrian Desmond, *Archetypes and Ancestors: Paleontology in Victorian London, 1850-1870* (Chicago: The University of Chicago Press, 1982), 42-143 *passim*; and Cosans, 19, 40, 45.

75. Cosans, *Owen's Ape*, 25.

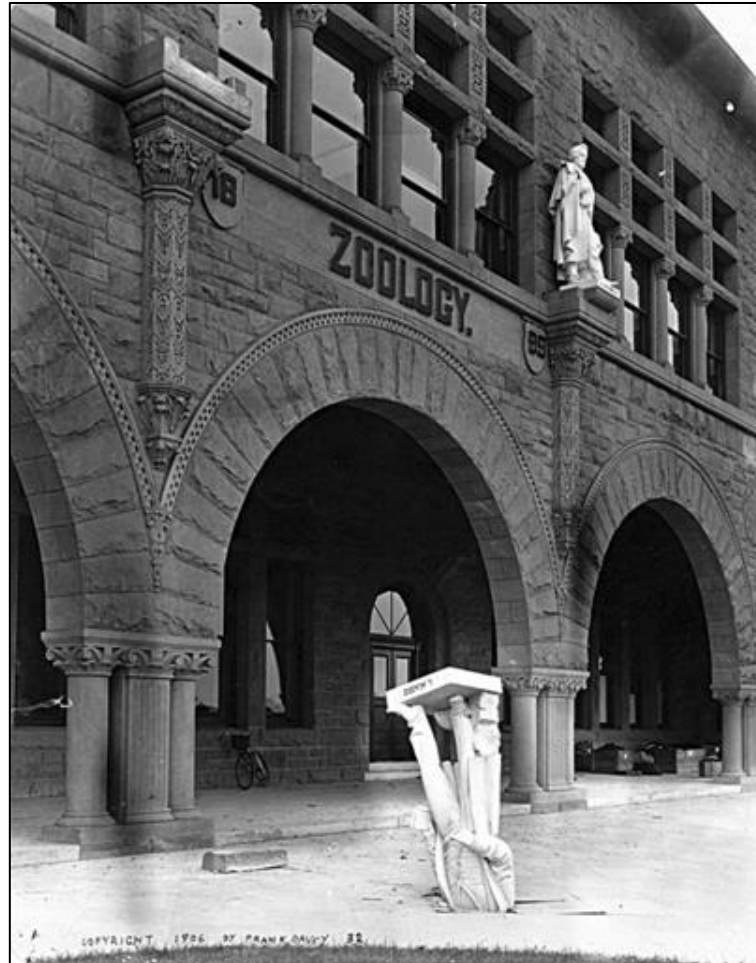


Fig. 2. The Louis Agassiz statue buried in the pavement of Stanford University's Zoology building after the San Francisco earthquake of 1906, an inglorious end to an ignoble career. Photo by Frank Davey (1860-1922), courtesy of Wikimedia Commons.

Huxley retorted that Tiedemann was acting “as the Negro’s advocate” and was letting sentiment interfere with his science.<sup>76</sup> He believed much the same of Owen. By dismissing Owen’s detailed anatomical analysis in favor of a crude, and sometime disingenuous, portrayal of “common” features of the human/ape brain, Huxley could himself blur important distinctions. Most egregious was Huxley’s unnaturally blown up size of the chimpanzee brain designed to visually drive home his point that human/ape brains were remarkably similar.<sup>77</sup> In effect, Huxley used inflated commonalities and diminished differences between humans and apes to bestialize Africans and other races he regarded as “beneath” the Caucasian. Good positivist that he was, Huxley relied upon a hard verificationism derived from his own confirmation bias to establish a division between science and the humanities based upon the fact-value distinction. Thus, he could portray his side of the argument as “fact-based” while Owen and Tiedemann’s pleadings were mere sentimentalities or worse, rank mysticism. The naturalistic fallacy of having facts dictate values is just one variation on the fact/value distinction.

76. Cosans, *Owen’s Ape*, 107.

77. Cosans, *Owen’s Ape*, 123.



In any case, Owen lost more than the brain debate with Huxley; he became caricatured by history's victors as a truculent deceiver and backward reactionary. Even before the neo-Darwinian synthesis, Owen was often lumped with Agassiz as an opponent of evolution, both benighted representatives of "the old biological school."<sup>78</sup> In fact, Owen was nothing of the sort. Owen adopted a form of divergent development he borrowed from Karl Ernst von Baer, what Michael Ruse has called a Platonist "unfurling of creation through time as revealed, increasingly, by the fossil record."<sup>79</sup> In so doing his evolutionary thinking is not based upon species immutability but on morphology that "can unexpectedly disclose its modernity."<sup>80</sup> Specifically, this is structuralist evolution found in empirically observable features of an organism's morphology and factors in important developmental aspects that is being increasingly defended by scientists today.<sup>81</sup> But the most modern of all is Owen's scientific support of racial equality. Looking back on the controversy, Owen was certainly prickly and imperious to a fault, but Huxley's opprobrious prose and wisenheimer attitude look as crude as the intellectual cudgel he used against Owen to racialize the brain.

### The Real Problem

Looking afresh at Agassiz we can see that the real problem was *not* Platonism. Darwinist realist and Agassiz idealist alike could fall prey to racism. It was not even the hotly politicized scientific landscape of America on the eve of Civil War as witnessed in States' Rights medicine, for the polygenist Agassiz was a Swiss-born naturalist at the center of New England's intellectual life at Harvard, and Huxley—a very different man—argued from across the pond as vehemently for white racial superiority as any Southern Fire-Eater. The real separation seems to be found in one's view of humankind. Are humans, as Darwin believed, different from animals only in degree but not kind (a notion curiously shared by none other than Agassiz)? Or are humans in some sense special, unique to the domains of all life as we know it? Owen answered the second question in the affirmative and was able to incorporate values into his science and thus failed to treat facts as abstractions unto themselves. For Huxley, the "facts" trumped all. But facts are never separate from the observer. All facts are in some sense phenomenal, an inescapable aspect of science to which Huxley was blind. As Cosans has pointed out, "We cannot replace our moral intuitions with scientific theories because rationality itself presupposes our moral intuitions, and science in turn presupposes rationality."<sup>82</sup>

Darwin's victory over Agassiz in terms of biology has had the net effect of tightening the triumphalist blinders, ignoring the fact that other evolutionary scenarios—à la Owen, for

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78. For example, see the Darwinian triumphalist account in A. Sedgwick, "The Influence of Darwin on the Study of Animal Embryology," in *Darwin and Modern Science: Essays in Commemoration of the Centenary of the Birth of Charles Darwin and of the Fiftieth Anniversary of The Origin of Species*, ed. A. C. Seward (Cambridge: At the University Press, 1909), 171. This was Adam Sedgwick, professor of Zoology and Comparative Anatomy at Cambridge University, who was the great nephew of geologist Rev. Adam Sedgwick who had excoriated his former student's *Origin* as a "mire of folly." What a difference a few years make! See also, Eric Nordenskiöld, *The History of Biology: A Survey*, trans. Leonard Bucknall Eyre (New York: Tudor Publishing, 1936), 479.

79. Michael Ruse, *On Purpose* (Princeton: Princeton University Press, 2018), 149.

80. Giovanni Camardi, "Richard Owen, Morphology and Evolution," *Journal of the History of Biology* 34, no. 3 (Winter 2001): 481-515.

81. Amundson, *Embryo*; Peter T. Saunders, "Beyond the Neo-Darwinian Paradigm," *Theoretical Biology Forum* 109, nos. ½ (2016): 123-130; and Michael Denton, *Evolution: Still a Theory in Crisis* (Seattle: Discovery Institute, 2016).

82. Cosans, *Owen's Ape*, 140.

example—need not carry with them positivist assumptions, human/animal connotations, or racial indictments. This should not diminish the real benefit of Agassiz's defeat, for with the thorough discrediting of polygenism under the "scientific" banner of States' Rights Medicine, never again would the medical profession entertain notions of regional distinctiveness on a racial basis. In addition, the end of polygenism helped push the idealist strain of "fanciful reasoning" in medicine toward the margins as the rise of bacteriology helped bring scientific empiricism to the fore after 1875.<sup>83</sup> Nevertheless, the positivist triumph meant that the acceptance of the fact/value dichotomy would have serious consequences for medical ethics. Indeed, bigotry could be just as unbecoming in a lab coat as in the slave-owner's frock.

The point here is to neither praise nor bury Agassiz. His enduring legacy, if it tells us anything, is that all biblical exegesis is not woven out of the same cloth. In the end the polygenist and the monogenist views could be "scriptural" and rooted in their own respective brands of social *and* religious orthodoxies, neither of which altered racial attitudes in any appreciable way except perhaps to unify them under one common "scientific" paradigm. Now the racially and socially unwashed were not only "unfit" but *dangerous*, subjects for a program of correction that would be carried out by a new generation of men very different from Agassiz in some respects and yet disturbingly similar in others, men like Herbert Spencer, Francis Galton, Walter Bagehot, William Graham Sumner, John Fiske, to name a few. But that is another story.

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83. Shryock, "Empiricism versus Rationalism," 128.