

## Chapter Four

### Bias, Brains, and Skulls

#### *Tracing the Legacy of Scientific Racism in the Nineteenth-Century Works of Samuel George Morton and Friedrich Tiedemann*

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“He [Samuel George Morton] established, with unusual rapidity, a widespread scientific fame, upon the white radiance of which he has, dying, left not a single blot.”

—Henry Patterson, 1854<sup>1</sup>

“. . . There is a want of exactness in the manner Morton gives the facts [. . .] In conclusion, therefore, I do not think Dr. Morton a safe man to quote from.”

—Charles Darwin, 1847<sup>2</sup>

#### RACE, SCIENCE, AND BIAS: THE CASE OF SAMUEL GEORGE MORTON

In his trenchant study, *Racial Hygiene: Medicine Under the Nazis*, historian Robert Proctor points out that one of the major functions of science historically has been that of *apology*, the naturalization of the contingent and changeable social order by appeal to laws of nature. “It has long been recognized that if people can be convinced that the social order is a natural order,” Proctor writes, “and that the misery (or abundance) they find around them derives from the will of God or Nature or both, then attention can be diverted from those parts of the social order that are the true source of that misery (or abundance).”<sup>3</sup> The line between explanation and apology may be a fuzzy and a contested one, but certainly science has been used to excuse, whether for political, economic, or other reasons, those features of the world which call out for justification. Although religion, political power, personal conviction,

and “common sense” can be marshalled into the same service, science’s perceived objectivity, and its apparent freedom from subjective bias, can lend a tenacious facticity to the conclusions it is made to serve.

The concern of this chapter is objectivity and bias in *race science*, a definition of which may be the systematic study and comparison of human variation as organized into distinct demographic units, bounded by shared physical and genetic traits. There is often not much, if any, sunlight between race science and *scientific racism*, although the latter necessarily involves the denigration or elevation of some races in relation to others. At different points during the last few centuries, scientific racism was an important ideological organ of, for example, the Atlantic slave trade, colonialism, and the long legacy of racial discrimination in the United States and beyond. Below, drawing on new findings from his private correspondence and published works, we argue for a reinterpretation of the role of bias in the works of prominent race scientist Samuel George Morton (1799–1851). In particular, by contrasting Morton with the anti-race supremacist anatomist Friedrich Tiedemann (1781–1861), we show how bias has been consciously hidden in one of the foundational works of race science.

More generally, we observe, supported by many other scholars, that scientific racism is neither dead nor dormant, but is today at work.<sup>4</sup> Indeed, whether openly or not, many domains of contemporary science either tacitly rely on assumptions of fundamental racial difference, or misconstrue recent research in population genetics to reconstitute race as a biologically valid category, despite decades of research showing its invalidity.<sup>5</sup> In particular, since the 1960s, a series of studies by hereditarian-minded psychologists has asserted that racial differences in IQ (Intelligence Quotient) are innate and largely ineradicable.<sup>6</sup> Arising in the wake of such studies have been arguments that taxpayer-funded educational programs for low-income Black and Brown children should be reduced or scrapped, and that the mentally inferior should be incentivized to reproduce less.<sup>7</sup>

However, such claims have not gone unchallenged. For example in 1981, Stephen J. Gould (1941–2002), Harvard paleontologist and historian of science, published *The Mismeasure of Man* as an attack on the claim of racial differences in intelligence. As part of his pushback, one of Gould’s claims was that unconscious bias has been altogether rampant in studies of race and intelligence. Consequently, Gould’s *Mismeasure* explicated a harrowing history of bias through the figure of nineteenth-century naturalist Samuel George Morton. Morton was a craniologist; he collected and studied human skulls so as to define racial differences in brain size and intelligence. He published his results in a series of influential publications between 1839 and 1849. In Morton’s case, his work followed then-common assumptions about

straightforward links between brain size and intelligence, and suggested the intellectual inferiority of non-White races on the grounds of smaller average skull size. This result was read in Morton's time as a natural justification for the U.S. American institution of slavery.<sup>8</sup>

According to Gould, Morton's various published errors—from miscalculations, to shifting criteria for including measures of some skulls and not others—tended to support Morton's *a priori* position of White superiority, suggesting that Morton was *unconsciously* biased. Gould wrote that while *conscious bias* can be identified and expunged, leaving the image of scientific objectivity intact, the “prevalence of unconscious finagling, on the other hand, suggests a general conclusion about the social context of science.”<sup>9</sup>

In Gould's hands, Morton's case was an assault on the objectivity of nineteenth- and twentieth-century race science. Gould suggested that if bias infected research on race years ago, then bias may also reside in contemporary research on racial differences in intelligence; the remainder of his *Mismeasure* documents the twentieth-century reverberations of such bias. Exactly defining the impact of Gould's work is difficult, but he was widely considered among the most influential and popular science writers of his generation. *Mismeasure* won many awards and was perhaps his most politically relevant and widely read book. Since then, two direct critiques of Gould's historical methods and claims about Morton have appeared, and a bevy of defenses and further criticisms of Gould has followed in their wake.<sup>10</sup>

Due to the Morton-Gould affair, the work of Morton, a once influential but (until recently) rather obscure naturalist from the first half of the nineteenth century, has come to matter in the sociopolitical context in which Gould and those who responded to him wrote, for at least two reasons. First, the assumption of distinct human races with different innate intellectual capacities has again reared into public consciousness.<sup>11</sup> Second, through the various critiques and responses to Gould's examinations of Morton's work, the stakes of the debate have been heightened; contesting Gould's analysis of Morton, whether *tout court* or *à la carte*, has tended to generate suspicion of Gould's other scholarship.<sup>12</sup> While there may be good reason to contest some of Gould's claims about Morton's unconscious bias, this does not *ipso facto* validate the work of Gould's detractors and the targets of his critique, nor does it invalidate Gould's other research. Nonetheless, because the objectivity of Morton's work has become a matter of debate with symbolic significance beyond the case itself, we concern ourselves in this chapter with presenting new historical findings on the objectivity of Morton's work.

In this chapter, we argue there is ample evidence that Morton was, in fact, *consciously* biased. We provide updated scrutiny of his private correspondence and notes, contextualizing these in conjunction with records of his life, and

historical accounts on the context and methodology of his research. Altogether, this new assemblage of data on Morton and his nineteenth-century research undermines the image of a disinterested, impartial scientist whose methods and research were rigorously sound, even by the standards of his day. Ultimately, these findings prevent us from assenting to recent commentaries on Morton's "having been sinned against more than sinning,"<sup>13</sup> which attempt to salvage his image in the historical record. Furthermore, our evaluation suggests on the whole that *conscious bias* is as perfidious and hard to detect in science as unconscious bias, particularly when scientists actively attempt to conceal their own biases in a cloak of objectivity. In the end, the same vigilance and scrutiny that Gould suggested as antidotes to unconscious bias are probably the only route to dismantling the conscious variety, and just as necessary.

In what follows, we trace a history of scientific racism, showing how evaluations of the size and other characteristics of human heads came to be associated with measures of intelligence, and with fundamental racial differences. Then, we show how Morton's work emerged in response to that of another race scientist, Friedrich Tiedemann, who used skull measures to support theories of monogenism, racial equality, and abolition. Next, we detail aspects of Morton's life and times which clarify the overt biases borne out in his scholarship. In so doing, we reveal his conscious bias. Finally, we reflect on the implications of our new findings on the history of race science, and the significance of Morton's legacy.

## RACE ON THE BRAIN: THE RISE OF CRANIOLOGY

Drawn from the writings of travelers, missionaries, and colonial officials, European racial classifications were largely the product of secondhand reports and casual observation until modern comparative anatomy's rise at the end of the eighteenth century.<sup>14</sup> The dissection and study of bodies and bones allowed for repeated observation and measurement, and was thus more consistent with the Enlightenment's epistemological aims than conflicting, uncertain reports from the European colonies and beyond. In 1795, German anatomist Johann Friedrich Blumenbach's (1752–1840) division of the human species into five interrelated, but cranially categorized, racial "varieties" (Americans, Caucasians, Ethiopians, Malays, and Mongolians) both instituted enduring categories and prefaced nineteenth-century studies of brain size.<sup>15</sup> Others would share an attention to the skull as a locus of racial difference, including Dutch anatomist and artist Petrus Camper (1722–1789),<sup>16</sup> German anatomist Samuel Thomas von Sömmerring (1755–1830),<sup>17</sup> and French naturalist Georges Cuvier (1769–1832). Cuvier's 1817 report on a

dissection of the “Venus Hottentot” Sara Baartman in Paris asserted her small brain and resemblance to a monkey, undergirding his claim of the inferiority of Africans and their incapacity for civilization. For Cuvier, there proved “no exception to this cruel law which seems to have condemned to eternal inferiority the races with cramped and compressed skulls.”<sup>18</sup>

The link between brain size and intelligence was a common supposition of nineteenth-century naturalists, as it continued a long-inherited legacy in Western thought further bolstered by the practice of phrenology (see also chapter 2 by Wright in this volume, which describes the brain-centric legacies of anatomy before Western thought regarded racial difference as a problem). Phrenology was the attempt, begun by German doctor Franz Joseph Gall (1758–1828) in the late eighteenth century, to determine character and intelligence from the brain’s shape and size, as reflected through the skull’s exterior.<sup>19</sup> Phrenological principles were afforded apperency by cases of small-brained “idiots” and large-headed “geniuses” documented by physicians through plaster casts, paintings, and sustained phrenological observation.<sup>20</sup> Although phrenology was used to serve both reform and discrimination, its popularity into the mid-nineteenth century across Europe and the United States entrenched an increasingly anatomized view of racial difference.<sup>21</sup>

Through the anatomized body, the “capacity for civilization” and racial hierarchy were made legible, as was the theorized evolution of racial difference. Initially, a belief in biblical chronology and the divine creation of all life was common among European naturalists. Many tended to attribute racial differences to the effects of lifestyles and environments emerging after Noah’s flood, but accepted the fundamental unity of the human species. Their view, called *monogenism*, was contested by *polygenism*, which held that human races did not, in fact, share common ancestry. For polygenists, racial differences were heritable, fixed, static, and innate. Polygenism was first posited by French philosopher Voltaire (1694–1778) and Scottish historian Lord Kames (1696–1782) and began to take root in the late eighteenth century. By the mid-nineteenth century, an increasing emphasis on the collection of bodies and their measurement had made the polygenist view one of scientific racism. Indeed, both monogenists and polygenists used skull measurements to support their opposing racial theories.

### OF TWO MINDS: CRANIOLOGY AND THE IDEOLOGIES OF TIEDEMANN AND MORTON

In 1836, German anatomist and physiologist Friedrich Tiedemann (1781–1861),<sup>22</sup> conducted a large, systematic comparison of the skulls and brains

of orangutans and humans from Blumenbach's five races, with particular attention to the comparison of the "Aethiopian" (or "Negro") race and that of the European.<sup>23</sup> For his studies, Tiedemann filled skulls with millet, weighed them, then subtracted from that the skulls' tare weights. He concluded that his measurements of 489 human skulls, far more than those ever measured and compared before, showed no significant differences between Africans and Europeans. Refuting claims of African animality, he declared Africans no closer to the orangutan than Europeans. He opened his essay, submitted in English to the Royal Society, by suggesting that the work had "great importance in the natural history, anatomy, and physiology of Man; interesting also in a political and legislative point of view."<sup>24</sup> With the first large, systematic study of brain size in different "races," Tiedemann forwarded an argument *for equality* on the basis of cranial form.

After publishing his essay, Tiedemann received no retort with a comparable set of skull measurements until three years later in 1839, when Morton published the first of his two major studies of skulls, entitled *Crania Americana*.<sup>25</sup> The new publication revealed that Morton had attempted a comparative study similar to Tiedemann's; Morton used Blumenbach's racial classification and a measure of the volume of seed that would fit into a skull's braincase. However, rather than travel across Europe to the various anatomical collections to measure a wide assortment of crania, as Tiedemann did, Morton leveraged his central position as an administrator in Philadelphia's budding Academy of Natural Sciences (ANSP) to acquire the "skulls of all nations"<sup>26</sup> sent to him by explorers, military and colonial officials, and other naturalists, and through trade with other skull collectors. Thereby, Morton amassed one of the world's largest cranial collections, the "American Golgotha,"<sup>27</sup> that would eventually grow to encompass some nine hundred human skulls before his death.<sup>28</sup>

Importantly, Morton's conclusions starkly contrasted with Tiedemann's. Morton's measurements of 256 skulls showed that Caucasians had larger brains than all other races, followed by Mongolians, Malay, Americans, and Negroes, respectively. However, Morton refrained from spelling out the implications of his 1839 findings. Instead, it was the Scottish phrenologist George Combe (1788–1858) who wrote a "phrenological appendix" to Morton's *Crania Americana*, and stated, "The aggregate natural mental power (animal, moral, and intellectual) of the individuals composing any nation, will (other conditions being equal) be great or small in proportion to the size of their brains."<sup>29</sup>

At the time, Tiedemann was among the most celebrated anatomists in Europe,<sup>30</sup> and he was also going blind.<sup>31</sup> Though Tiedemann never responded in print to Morton's work, he surely knew of it; his anatomist son-in-law, Theodor Ludwig Bischoff (1807–1882), eventually published a critical review of

*Crania Americana*. It is also certain that Tiedemann, an avowed monogenist and abolitionist, ardently disagreed with Morton. Remarkably, however, even as Tiedemann and Morton both produced similar results regarding race and brain size, it was their interpretations which differed.<sup>32</sup>

As his *Crania Americana* shows, Morton averaged his measurements for each racial category and ranked them accordingly, despite great overlap in the ranges for these groupings, upon which he did not comment. Tiedemann's measurements also demonstrated overlap across racial categories. However, for Tiedemann this was evidence of the fundamental unity of humanity, and as a result, he did not average the skull volumes of races. Calculating averages of Tiedemann's data produces a table which matches Morton's rankings (see Morton's 1839 table of measurements in Figure 4.1 and one of Tiedemann's 1836 tables in Figure 4.2). Together, their works illustrate how their prior assumptions about racial difference structured their respective methods of data presentation and interpretation.

Although Morton's work is a definite response to Tiedemann's (see below), Morton only publicly mentioned Tiedemann in three brief passages about digestion and circulation in his 1849 textbook on human anatomy.<sup>33</sup> In fact, only in a posthumously published manuscript penned by Morton circa 1850 does he mention Tiedemann's craniological research. Morton noted that "Prof. Tiedemann, of Heidelberg, a learned and accomplished anatomist" had investigated the difference in brain size between men and women.<sup>34</sup> Morton then faulted Tiedemann's writings on racial differences for flawed measurement, despite admitting results "of great value."<sup>35</sup>

NOTE.—On the Internal Capacity of the Cranium in the different Races of Men.—Having subjected the skulls in my possession, and such also as I could obtain from my friends, to the internal capacity measurement already described, I have obtained the following results. The mean of the American Race, (omitting the fraction) is repeated here merely to complete the Table. The skulls of idiots and persons under age were of course rejected.

RACES.	No. of skulls.	Mean internal capacity in cubic inches.	Largest in the series.	Smallest in the series.
Caucasian.	52	87.	109.	75.
Mongolian.	10	83.	93.	69.
Malay.	18	81.	89.	64.
American.	147	80.	100.	60.
Ethiopian.	29	78.	94.	65.

Figure 4.1. Morton's table of cranial capacities from his *Crania Americana* (1839, 260). Note that Morton only reported individual measurements for "Americans" in his 1839 work. For every other racial group, he reported only the sample size, average, and range.

A. Male Skulls.			
	Names of the different Tribes.	Anatomical Collection.	Capacity of the cavum cranii.
			oz. dr. gr.
1.	{ Eboes, or Ibos, Negro of Congo. Died at Sierra Leone . . . }	Anatomical Museum of Dr. Knox at Edinburgh . . .	54 2 33
2.	Old Caffre . . . . .	Camper's Anatomical Museum at Groningen . . . . .	43 7 0
3.	Negro . . . . .	St. Thomas's Hospital, London . . . . .	42 6 30
4.	Eboes, Negro . . . . .	Collection of Dr. Knox . . . . .	42 2 37
5.	Negro . . . . .	Guy's Hospital, London . . . . .	42 0 23
6.	Negro . . . . .	St. Thomas's Hospital . . . . .	41 6 37
7.	Native of Madagascar . . . . .	Phrenological Society, Edinburgh . . . . .	40 5 30
8.	Negro . . . . .	Soemmerring's Anatomical Museum . . . . .	40 5 6
9.	Negro of Loango . . . . .	Camper's Collection . . . . .	40 0 20
10.	Negro . . . . .	St. Thomas's Hospital . . . . .	39 6 33
11.	Hottentot . . . . .	Collection of Mr. South, London. . . . .	39 6 21
12.	Negro of Guinea . . . . .	Camper's Anatomical Museum . . . . .	39 2 0
13.	Bosjes man . . . . .	Mr. South's Collection . . . . .	38 7 5
14.	Negro of North America . . . . .	Anatomical Museum at Groningen . . . . .	38 4 0
15.	Caffre . . . . .	Mr. South's Collection . . . . .	37 5 59
16.	Negro eleven years old . . . . .	Groningen Anatomical Collection. . . . .	37 5 0
17.	Negro . . . . .	St. Bartholomew's Hospital, London . . . . .	37 3 35
18.	Negro of Surinam . . . . .	Anatomical Museum at Heidelberg . . . . .	37 2 30
19.	Negro . . . . .	St. Bartholomew's Hospital . . . . .	37 2 11
20.	Negro . . . . .	The same . . . . .	37 1 22
21.	Negro . . . . .	St. Thomas's Hospital . . . . .	37 0 1
22.	Ashantee Negro . . . . .	Hunterian Museum, London . . . . .	36 5 32
23.	Bosjesman . . . . .	Phrenological Society, Edinburgh . . . . .	36 3 56
24.	Negro of Angola . . . . .	Camper's Collection . . . . .	36 4 20
25.	Negro . . . . .	Guy's Hospital, London . . . . .	36 1 32
26.	Negro . . . . .	Heidelberg Anatomical Museum . . . . .	35 7 0
27.	Negro . . . . .	The same . . . . .	35 6 40
28.	Native of Mozambique . . . . .	Camper's Museum. . . . .	35 4 0
29.	Negro of Guinea. . . . .	The same . . . . .	35 3 0
30.	Negro . . . . .	The same . . . . .	35 3 0
31.	Young Negro . . . . .	The same . . . . .	35 0 0
32.	Negro of Mozambique . . . . .	Mr. South's Collection . . . . .	34 6 0
33.	Negro of Curaçao . . . . .	Groningen Anatomical Museum . . . . .	34 4 0
34.	Negro of Cheribon. . . . .	The same . . . . .	33 3 0
35.	Bosjesman . . . . .	Phrenological Society, Edinburgh . . . . .	32 6 48
36.	Young Negro . . . . .	Camper's Collection . . . . .	32 0 0
37.	Young Negro of Madagascar. . . . .	The same . . . . .	32 0 0
38.	Negro . . . . .	St. Bartholomew's Hospital . . . . .	31 5 16
B. Female Skulls.			
39.	Negress . . . . .	Camper's Museum. . . . .	31 4 0
40.	Old Hottentot woman . . . . .	The same . . . . .	31 0 0
41.	Negress . . . . .	Guy's Hospital, London . . . . .	24 7 39

By these Tables it is clear that the cavum cranii of Negro women is smaller than that of the men; consequently they have an absolutely smaller brain, like the European women.

Figure 4.2. Tiedemann's table of "Æthiopian" cranial capacities from his article "On the Brain of the Negro, Compared with That of the European and the Orang-Outang" (1836, 505). This is one of five such tables in his 1836 article, with each table reporting measurements pertaining to racial groups originally identified in Blumenbach's classification. Note that Tiedemann measured skulls by the weight (of millet)—rather than the volume—that could be contained in the braincase. For all "races" but the "American," Tiedemann's 1836 sample was larger than Morton's 1839 sample (see Figure 4.1).

## MORTON'S CRYPTIC MOTIVATIONS

Since, unlike Tiedemann, Morton did not publish his opinions on the political significance of the scientific questions he was pursuing, attention to the archive of his private correspondence and other records gives important context to Morton's motivations. Whereas Tiedemann was obviously interested in providing a craniological grounding for racial equality, and is explicit in his views, Morton is, by contrast, cryptic.

Indeed, Morton seems to have held the political question of slavery as imponderable. One of the few references to slavery in his private writings, a journal of his visit to Barbados in 1834, reveals that while he thought gradual emancipation might be best, "The subject of slavery is trite and exhausted, nor if the wisdom of Solomon were to speak now would it avail any thing (*sic*) . . ." <sup>36</sup> In both public and private writings, Morton appears to have stayed carefully aloof of the debate as to whether slavery was a brutal crime against Africans, or a permissible way to treat incapable inferiors. Perhaps because he did not wear especially politically cumbersome convictions on his sleeve, Morton was professionally associated with colleagues on both sides of the issue. In fact, in his earlier years, many of his teachers and friends were outspoken abolitionists, such as physician Joseph Parrish (1799–1840). <sup>37</sup>

After receiving a medical degree from the University of Pennsylvania in 1820, <sup>38</sup> Morton sailed to Clonmel, Ireland, to visit his uncle James Morton, a successful merchant. James was so impressed by his nephew that he enrolled him as a medical student at the University of Edinburgh. <sup>39</sup> At that time, American universities were viewed as inferior institutions, and a European diploma would do more to help Morton build a practice. <sup>40</sup> While at Edinburgh, Morton befriended Thomas Hodgkin (1798–1866), a devout English Quaker, who at age twenty-one wrote an essay criticizing European abuses of Native Americans. <sup>41</sup>

Later, Morton traveled with Hodgkin to Paris for advanced training in anatomy. <sup>42</sup> Though former classmate Hodgkin and Morton remained friends in the decade following Edinburgh, their letters show sentiments straining as priorities diverged. <sup>43</sup> Eventually, in 1836, Hodgkin retired from medicine to focus on philanthropy, founding the Indigenous Protection Society and traveling around the world to relieve poverty and racial oppression. <sup>44</sup> This was around the same time Morton was devising his first craniological treatise.

Upon earning his M.D. from Edinburgh, Morton returned to Philadelphia, where he established a successful medical practice, taught classes in anatomy, and became a noted naturalist and active member of the Academy of Natural Sciences (ANSP). At the ANSP, Morton maintained close relationships with steadfast abolitionists and vocal anti-race supremacists. <sup>45</sup> Morton knew John Speakman (1783–1854), a Quaker apothecary who helped found the ANSP

in 1812, and was the “zealously religious” son of a fervently abolitionist father who “refused to use any article known to be a product made with slave labor.”<sup>46</sup> Further, William Maclure (1763–1840), the ANSP’s first president, wrote that slavery was a “disgrace to the civilization and knowledge of the day” which arose from “prejudices against color, arising from the false supposition of superiority being in the skin.”<sup>47</sup> Interestingly, Maclure donated the funds Morton used to hire lithographer John Collins (1814–1902) to illustrate *Crania Americana*.<sup>48</sup> Collins was himself an activist Quaker (and a cousin of Morton’s wife, Rebecca) who published antislavery poetry.<sup>49</sup>

In ensuing years, as his craniological work took off, Morton also maintained close relationships with some of America’s most outspoken race supremacists, including anatomist Charles Caldwell (1772–1853), whose *Thoughts on the Original Unity of the Human Race* (1830) has been described as “the first explicitly polygenist book written in English.”<sup>50</sup> Morton was also a friend and colleague of Josiah Clark Nott (1804–1873), a Paris-trained surgeon and Alabama plantation owner. A vocal White supremacist, Nott gained notoriety as a popular lecturer on what he called “niggerology,” arguing that “the negro (*sic*) attains his greatest perfection, physical and moral, and his greatest longevity, in a state of slavery.”<sup>51</sup> After Morton’s death, Nott compiled *The Types of Mankind*, arguably the most extensive statement of polygenism and pre-Darwinian scientific racism. The book’s dedication was “To the Memory of Morton” and included posthumous publication of Morton’s unfinished manuscripts, given to Nott by Morton’s widow. Nott’s coauthor was another of Morton’s virulently race supremacist colleagues, Egyptologist George Gliddon (1809–1857). In the 1840s, Morton had also befriended Louis Agassiz (1807–1873), the Swiss-born naturalist and influential Harvard professor of natural history, who had shifted from an egalitarian position to one of polygenism and White superiority after moving from Europe to the United States.<sup>52</sup>

This evidence of Morton’s professional relations suggests his ambivalence on slavery as a moral and political issue, although nowhere in his writing does Morton record a convinced opinion on the institution of slavery. His associates, however, were aware of the relevance of his studies. In particular, Gliddon, the Egyptologist, attempted to personally deliver a copy of Morton’s works to the pro-slavery South Carolina Senator John C. Calhoun.<sup>53</sup>

While Morton’s lack of an expressed opinion on slavery might provide the basis for an inference of impartiality, his close associations late in life with polygenist slaveholders suggest either a thinly veiled approval of the institution, or at least a willingness to hold his nose in the service of making a name for himself. Other archival evidence provides clear documentation of

Morton's conscious dissembling with his data, suggesting that whatever he was, Morton was not impartial.

### MORTON'S CONSCIOUS BIAS

In order to study the "skulls of all nations," Morton relied on a network of global connections.<sup>54</sup> By having doctors and military men collect Native American skulls from battlefields and graveyards in the Americas, Morton could trade these for difficult-to-acquire crania from collectors in Europe.<sup>55</sup> For example, in 1848, Morton sent Comanche and Peruvian skulls to Swedish craniologist Anders Retzius (1796–1860) in exchange for those of Finns and Scandinavians.<sup>56</sup>

The scope and opportunistic nature of Morton's collecting practices are suggested in his 1836 letter to U.S. Army surgeon Thomas Lawson, M.D., of Fort Mitchell, Alabama. Morton notes that his collection includes *only* sixty-three skulls of "American tribes," of which "but twenty-three of these are North Americans."<sup>57</sup> This letter was not handwritten, but was printed on a press, with a blank space for the name of the addressee, indicating that Morton sent out many reproduced copies of this same form letter. Through this particular correspondence, Morton was likely attempting to acquire skulls of the Creek Nation, because Fort Mitchell was the established U.S. Army garrison under use during the Second Creek War, or Creek Alabama Uprising, of 1836–1837.<sup>58</sup> As Morton sent the letter about a month and a half after the conflict's start, he likely knew that recently deceased Creek bodies would be available. Lawson, who would later become Surgeon General under U.S. President Andrew Jackson, never sent any crania, but Morton eventually acquired the skulls of Creek people through other contacts.<sup>59</sup>

All in all, Morton's skull-collecting, even if opportunistic, was organized by certain priorities. For his first book, *Crania Americana*, Morton was in need of Native American crania, as his printed correspondence suggests. After *Crania Americana* was released, however, Morton evidently became very concerned with acquiring "native" skulls from the African continent. To satisfy this priority, circa 1840 some fifty skulls of African-born enslaved were shipped to Morton by one Don José Rodríguez Cisneros (fl. eighteenth century), a physician of Havana, Cuba, whom Morton may have come to know through other naturalists or through a trip that he undertook to the Caribbean in 1834. In a July 1840 letter to Morton, Cisneros explained that what he had sent Morton were the skulls of enslaved "*bozales negros*"<sup>60</sup> whose skeletons had been dug up at the Vedado Farm on the outskirts of Havana. These enslaved Africans had likely died following a

cholera epidemic that swept through the region in the early 1830s (adding to the hardship of their enslavement).<sup>61</sup> Enclosed with the skulls he sent, Cisneros also included a letter thanking Morton for the copy of *Crania Americana* sent to him, remarking: “I received your appreciated letter in which you charge[d] me to procure 50 rare African skulls . . .”<sup>62</sup>

Morton’s desire for these skulls is also discussed in an earlier May 1840 letter he wrote to George Combe. In this letter, Morton emphasized that he was in the process of collecting:

At least 50 skulls of Native Africans (*sic*). The results obtained from such sources will of course be beyond cavil, and will compete fairly with Prof. Tiedemann’s experiments.<sup>63</sup>

This passage from his correspondence demonstrates that Morton *intentionally* took measures to collect the skulls of “native born” Africans with the specific intent of “competing with” Tiedemann.

What might Morton have meant in writing that he wanted to “compete fairly” with Tiedemann’s research? The claims extending from Tiedemann’s research were strengthened by the fact that Tiedemann (1836) had actually measured more crania than Morton had in 1839. Tiedemann’s work had also included the skulls of continental Africans. By contrast, Morton had studied only a few such Africans—nine of the twenty-nine Africans in his sample. Why the need for the skulls of continental Africans? Tiedemann’s 1836 claims refuted findings of smaller African brain size, a research result Tiedemann explained as relating to the sampling of “Negro” skulls impacted by the condition of enslavement: “[The] miserable remains of an enslaved people, bodily and spiritually degraded and lowered by ill treatment.”<sup>64</sup> Influenced by then-common theories that the manner of one’s life and environment had profound anatomical consequences, Tiedemann claimed that only the skulls of free, “native” Africans could assist in the investigation of sound anatomical research.

Morton’s intention to compete with his German monogenist rival led him not only to acquire the *bozales* to add to his collection, but to omit a major detail about their provenance in print. In his next major work, *Crania Aegyptiaca* (1844), after reporting on the small size of “Negroids” in Ancient Egypt as proof of African inferiority throughout all of known history, Morton inserts a footnote: “I have in my possession seventy-nine crania of Negroes born in Africa . . .” He thanks doctors in Liberia for sending the skulls, and “especially” thanks the Havana-based Cisneros, before noting that the recently acquired skulls have “eighty-five cubic inches for the average size of the brain . . .” and the “smallest but sixty-five.” Morton never mentions that the skulls sent by Cisneros (the large majority of his “Native Africa” mea-

surements in *Crania Aegyptiaca*) were those of the enslaved—lest he give Tiedemann’s supporters a grounds to dismiss this research.

With that very footnote, Morton was strategically addressing Tiedemann’s call for the study of non-enslaved Africans, while serving his own goal to prove their cranial—and thereby mental—inferiority. As mentioned above, nowhere in Morton’s published writings (except in posthumously published manuscripts) does he address Tiedemann’s craniology. Even so, Morton’s private correspondence is clear about his intention to compete with Tiedemann’s claims describing evidence of racial equality, as in: “The principal result of my researches on the brain of the Negro, is, that neither anatomy nor physiology can justify our placing them beneath the Europeans in a moral or intellectual point of view.” Thus, behind Morton’s superficial empiricism and objectivity was the methodical, conscious construction of a scientific *apology* for the slave trade. This bias led Morton to actively mislead in publication about the sources of his data.

### CONCLUSION: THE CLOAKED INTENTIONS AND CONSCIOUS BIAS OF SAMUEL GEORGE MORTON

Morton spends several paragraphs in his publications detailing his methods of measurement, assuring readers of their accuracy, and suggesting the toil that he and his assistant undertook in checking their own analysis.<sup>65</sup> Although Morton’s craniological work is, in volume, much more a labor of textual description and visual representation than it is of measurement, his measures and interpretations of skull size have long been at the center of debate about the value of his research. While opinions remain mixed on the objectivity of his measurements of cranial volume, what seems apparent from closer examination of Morton’s correspondence and the political and scientific context in which he worked is that Morton was not an impartial, unbiased scientist. Even if his data of cranial capacity are accurate, the manner in which he presented his data was biased by his desire to refute the abolitionist arguments of Tiedemann, his peer and principal rival.

The details we have presented in this chapter, which are drawn from Morton’s personal papers, reveal a man mindfully curating which evidence he would present and how he would present it. Also revealing is Morton’s choice to withdraw from overt political statements that competed with the apparent objectivity of his claims, as well as his attempt to obfuscate the sources of his “specimens.” Contextualizing Morton within the contemporary nineteenth-century debate on slavery in the United States and other slaveholding territories shows his work to be deeply invested in that debate, despite the apparent

disinterested stance of his writings on the question. Crucially, Morton's position significantly diverged from that of Tiedemann, who completed his seminal article by commending Great Britain on its abolition of the slave trade, declaring, "The chain which bound Africa to the dust, and prevented the success of every effort to raise her, is broken."<sup>66</sup> We can therefore conclude that Morton's bias was *conscious* and purposefully intended. This may have been even more pernicious than the unconscious bias of which he has been accused by Gould, particularly as he evidently attempted to obscure his bias from scrutiny.

It is also significant that craniology as a basis for arguments about racial difference outlived Morton's preeminence. In the aftermath of the American Civil War and the rise of Darwin's (1859) theory of evolution by natural selection, little more than two decades following the publication of *Crania Americana*, Morton's work began to suffer diminished political and scientific reception. Still, scientific apologies for racial hierarchy and discrimination on the basis of race lingered. As a result, modern fixations on embodied racial difference remain haunted by the legacies of foundational scientific racists like Morton, who exploited the bodies of the dead to entrench justifications for racial oppression.

Also important is how Morton's views on race were carefully cloaked in his writings. However, Morton's veiled intentions only tell part of the story. That abolitionists and egalitarians found no succor in his works on race and craniology, although pro-slavery advocates did, is telling. In subsequent years, Nott, Gliddon, and Agassiz, among others, would go on to elaborate on Morton's craniological corpus to fashion increasingly baroque and dogmatic arguments about the fundamental inferiority of non-Whites and their threat as social deviants and "polluters" of the White race.<sup>67</sup> Revisiting the history of Morton's labors, as we have done in this chapter, having combed through a unique, multilingual assemblage of historical texts, provides a careful examination of his dour legacy for lessons on the impacts and dangers of conscious, but discreetly hidden, bias in science.

## NOTES

1. Patterson, "Memoir of the Life and Scientific Labors of Samuel George Morton," in Nott and Gliddon, *Types of Mankind*, lvii.
2. Darwin, *Letter to Charles Lyell*.
3. Proctor, *Racial Hygiene*, 2.
4. Roberts, *Fatal Invention*; Marks, *Is Science Racist?*
5. Yudell et al., "Taking Race Out of Human Genetics," 564–65; Reardon, *Race to the Finish*.

6. Jensen, *Bias in Mental Testing*; Herrnstein and Murray, *The Bell Curve*; Rushton, *Race, Evolution, and Behavior*; Wade, *A Troublesome Inheritance*; Sesardić, *Making Sense of Heritability*; Gottfredson, "Egalitarian Fiction and Collective Fraud," 53–59.
7. Jensen, "How Much Can We Boost IQ and Achievement?," 1–123; Shockley, "Dysgenics, Geneticity, Raceology," 297–307; Richwine, "IQ and Immigration Policy."
8. Morton, *Crania Aegyptiaca*, 66–67.
9. Gould, "Morton's Ranking of Races by Cranial Capacity," 505.
10. Michael, "A New Look at Morton's Craniological Research," 349–54; Lewis et al., "The Mismeasure of Science"; Weisberg, "Remeasuring Man," 166–78; Kaplan et al., "Gould on Morton, Redux," 22–31; Weisberg and Paul, "Morton, Gould, and Bias"; *Nature*, "Mismeasure for Mismeasure," 419; Wade, "Scientists Measure the Accuracy of a Racism Claim"; Keim, "The Mismeasures of Stephen Jay Gould."
11. Evans, "The Unwelcome Revival of 'Race Science.'"
12. Gottfredson, "Resolute Ignorance on Race and Rushton"; Bouchard, "Genes, Evolution and Intelligence"; Cofnas, "Science Is Not Always 'Self-Correcting.'"
13. Lewis et al., "The Mismeasure of Science"; Tattersall, "Stephen Jay Gould's Intellectual Legacy to Anthropology."
14. Brace, "*Race*" *Is a Four-Letter Word*, 19–23.
15. Blumenbach described five racial "varieties" relating to geographic areas somewhat aligned with continents; see Blumenbach, *De Generis Humani Varietate Nativa*, 303–19.
16. Haller, *Outcasts from Evolution*, 9.
17. Sömmerring, Über die körperliche Verschiedenheit des Mohren vom Europäer, 12–13.
18. Cuvier, "Extrait d'Observations Faite sur le Cadavre d'une Femme Connue à Paris et à Londres sous le Nom de Vénus Hottentotte," 273.
19. Wegner, *Franz Joseph Gall, 1758–1828*; van Wyhe, *Phrenology and the Origins of Victorian Scientific Naturalism*.
20. Tomlinson, *Head Masters*.
21. Phrenology was rejected by many naturalists through the nineteenth century as well: see Davies, *Phrenology, Fad and Science*; van Wyhe, *Phrenology and the Origins of Victorian Scientific Naturalism*; Hamilton, "'Am I Not a Man and a Brother?"; Poskett, "Phrenology, Correspondence, and the Global Politics of Reform."
22. Tiedemann received a medical degree from the University of Marburg in 1804 and went on to study under experts including Sömmerring, Gall, and Cuvier. He attended Friedrich Schelling's (1775–1854) lectures and briefly advocated *Naturphilosophie*, but later turned to the functional anatomical approach exemplified by Blumenbach. As a professor at Heidelberg he published on embryology, physiology, and comparative anatomy. See Schmutz, "Einführung," in Tiedemann, *Das Hirn des Negers*, reprint edition, ix–xx; Theodor Bischoff, *Gedächtnisrede auf Friedrich Tiedemann*, 24.
23. On the meaning of the word "race" in the nineteenth century, see Brace, "*Race*" *Is a Four-Letter Word*; Smedley, *Race in North America*.

24. Tiedemann, "On the Brain of the Negro," 497.
25. Morton was born to Episcopalian parents of English heritage in Philadelphia in 1799. Orphaned by the age of seventeen, Morton went on to receive medical degrees from the University of Pennsylvania and from Edinburgh University in Scotland. An active member of the Academy of Natural Sciences of Philadelphia from 1827 to his death in 1851, Morton's lasting contributions to American science were his paleontological studies of invertebrates and his development of standard measurements for human crania. On Morton's life and work, see Stanton, *The Leopard's Spots*, 25–26; Roberts, *Fatal Invention*, 32–33; Painter, *The History of White People*, 191; Jordan, *Colonial Families of Philadelphia*, 1714–1715; Morton, *A Memoir of William Maclure, Esq.*, i; Grant, *Sketch of the Life and Character of Samuel George Morton*, 1–16; *New York Tribune*, "Death of Samuel George Morton," 5; on Morton's legacy, see Hrdlička, *Physical Anthropology, Its Scope and Aims*, 32–44; Hrdlička, *Letter to Edwin J. Nolan*; Mann, "The Origins of American Physical Anthropology in Philadelphia," 155–63.
26. Morton, *Crania Americana*, v.
27. Fabian, *The Skull Collectors*, 1.
28. Morton's cranial collection is today conserved as a resource for teaching and research by the Penn Museum in Philadelphia. Renschler and Monge, "The Samuel George Morton Cranial Collection," 30–38; Morton, *Catalogue of the Skulls*; Erickson, "Morton, Samuel George (1799–1851)," 689–90.
29. Combe, "Phrenological Remarks on the Relation Between the Natural Talents and Dispositions of Nations, and the Developments of their Brains," 269–71.
30. Schmutz, "Einführung," in Tiedemann, *Das Hirn des Negers*, reprint edition, ix–xx.
31. "Obituary Notices: Friedrich Tiedemann," ci–civ.
32. Although Tiedemann did not support claims of racial differences in intelligence, he did write: "There is undoubtedly a very close connexion (*sic*) between the absolute size of the brain and the intellectual powers and functions of the mind." Tiedemann, "On the Brain of the Negro," 502.
33. Morton, *An Illustrated System*, 312, 437.
34. Morton, "On the Size of the Brain," 299.
35. *Ibid.*, 300. Also, Morton's discussion of absolute brain size is a variation of text published a decade earlier by Andrew Combe (1797–1847). See Combe, "Remarks on the Fallacy," 14–15.
36. Morton, "Record of a Trip Taken by Morton to the West Indies," 5; Finkelman, "Prelude to the Fourteenth Amendment: Black Legal Rights in the Antebellum North," 431, *passim*.
37. Brace, "*Race*" *Is a Four-Letter Word*, 79; Friends Historical Library of Swarthmore College. "An Inventory of the Parrish Family Papers, 1780–1966."
38. Brace, "*Race*" *Is a Four-Letter Word*, 79.
39. Meigs, *A Memoir*, 14–15.
40. Brace, "*Race*" *Is a Four-Letter Word*, 79.
41. Stone, "Thomas Hodgkin," 368–75.
42. Kass and Kass, *Perfecting the World*, 71, 92.

43. Desmond and Moore, *Darwin's Sacred Cause*, 142–43.
44. Stone, “Thomas Hodgkin,” 368–75.
45. Rizzo and Rosenzweig, *Finding Aid, ANSP Philadelphia President's Office*, 12.
46. Peck and Stroud, *A Glorious Enterprise*, 6; Edward Nolan, *A Short History of the Academy of Natural Sciences of Philadelphia*, 5–6; Ruschenberger, *A Notice*, 46.
47. Quoted in Pitzer and Jones, *New Harmony Then and Now*, 70.
48. Cook, “The Old Physical Anthropology,” 36.
49. John Collins, “The Library Company of Philadelphia Digital Collections”; John Collins, *The Slave Mother*.
50. Caldwell, *Thoughts on the Original Unity of the Human Race*; Brace, “Race” *Is a Four-Letter Word*, 70.
51. Erickson, “The Anthropology of Josiah Clark Nott,” 103–20.
52. Gossett, *Race: The History of an Idea in America*, 59–60.
53. Brace, “Race” *Is a Four-Letter Word*, 69–71; Horsman, *Josiah Nott of Mobile*, 92–95.
54. Morton, *Crania Americana*, v.
55. Fabian, “The Curious Cabinet of Dr. Morton,” 112–37.
56. Morton, *Letter to Anders Retzius*, November 17, 1848.
57. Morton, *Letter to Thomas Lawson*, July 1, 1836.
58. Homans, *Army and Navy Chronicle, and Scientific Repository*, 352; Ellisor, *The Second Creek War: Interethnic Conflict and Collusion on a Collapsing Frontier*.
59. See specimen numbers 441, 579, and 751 in Morton, *Catalogue of the Skulls of Man*.
60. The word “bozal” is derived from the old Spanish “bosal,” meaning muzzled or bridled. It referred to a recently arrived slave who was in the process of being forcibly trained for life in servitude. An 1887 Spanish dictionary defined “bozal” as “*El negro recién sacado de su país* (A Negro recently removed from his country).” Faquineto, *Diccionario General Etimológico de la Lengua Española*, 733; Renschler, “An Osteobiography of an African Diasporic Skeletal Sample,” 21.
61. Meigs, *Catalogue*, 62.
62. Quoted in Renschler, “An Osteobiography of an African Diasporic Skeletal Sample,” 21.
63. Morton, *Letter to George Combe*, May 24, 1840.
64. Tiedemann, “On the Brain of the Negro,” 511.
65. Morton, *Crania Americana*, 249–56, 262.
66. Tiedemann, “On the Brain of the Negro,” 526.
67. Nott, in Nott and Gliddon, *Types of Mankind*, 397–98.

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